

Namibia: Combating Land Degradation with Tools for Local-Level Decision Making

World Resources Report Case Study

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INTRODUCTION

Often described as “the land between two deserts,” Namibia is the most arid country south of the Sahel. With increasing land degradation, sub-Saharan African developing countries such as Namibia are expected to be hit hard by climate change (Stern, 2007). The United Nations Development Programme (2010) indicates that “*Climate change, including changes in short-term variation, as well as long-term gradual changes in temperature and precipitation, is expected to be an additional stress on rates of land degradation.*” Agriculture is a major land use in this arid country and is particularly susceptible to the effects of land degradation and climatic variability. Because land degradation is prevalent in rural areas, farming communities living in these areas in Namibia will likely be the ones for whom adaptation to a changing climate is most critical (Dirkx et al., 2008). It is therefore imperative that policy decisions that are made to ameliorate the problem reflect realistic needs at the local level, by promoting local participation and ownership.

This case study describes an approach to establishing and strengthening local-level

institutions for enhanced livestock management in Namibia’s rural areas, and how these institutions have been used to facilitate information exchange through a flexible locally-driven decision-making process. The approach, known as the Forum for Integrated Resource Management (FIRM) approach, was initially established to address the problem of land degradation that was affecting livestock farmers in Namibia. The FIRM approach allowed Namibian livestock farmers living in rural areas to participate in making informed decisions and take the lead in making choices about range-land management and their livestock (Bethune & Pallet, 2002; New Agriculturist, 2006). The case study also describes a complementary monitoring tool that was developed to feed information collected by the local community into the decision-making processes in rural areas. This tool is called Local-Level Monitoring (LLM) and was first implemented by livestock farmers in north-western Namibia. Local-Level Monitoring allows communities to use simple but scientifically-based indicators to measure changes in their natural resources over time. Information garnered from the field using the tool is fed into community-based decision-making platforms called Forums for Integrated Natural Resource Management or FIRMs. FIRMs make decisions about how to better manage their resources in response to changes in the

environment or livestock condition, for example. Now adopted in many different communities throughout Namibia's rural landscape, with differing environmental challenges, the FIRM approach and its complementary monitoring tool (i.e. Local-Level Monitoring) were not established in preparation for human-induced climate change. Rather, as described above, Namibia has long faced climatic variability and extremes, and locally-driven decision-making tools were established to enhance the capacity of local communities to withstand shocks and counter land degradation. However, locally-driven decision-making approaches such as the ones established in Namibia can be modeled elsewhere and will be critically important as variability is heightened in a changing climate.

approximately 700 mm/year in the far northeast, 1440 km inland from the coast (Sweet, 1998). All perennial rivers in Namibia are shared with its neighboring countries of Angola, Botswana, South Africa, Zambia, and Zimbabwe, and originate at a great distance. Only ephemeral rivers occur within the country; these are extensively dammed and their surface waters and alluvial aquifers used to provide water to population centers throughout the country (Sweet, 1998). The higher rainfall area in the northern 10% of the country supports approximately 50% of the human population, partially based on mixed crop and livestock subsistence agriculture. Grazing, by livestock or wildlife, represents the main land use throughout the remainder of the country (Mendelsohn et al., 2002).

The case study first presents the local setting and timeline of the FIRM approach. It will then delve into the factors that enabled implementation of the approach and Local-Level Monitoring, as well as hurdles encountered. It will conclude with a discussion of lessons learned, especially regarding the application of this approach to contending with a changing climate.

SETTING

In Namibia, mean rainfall ranges from less than 20 mm/year on the south Atlantic coast, extending between South Africa and Angola, to

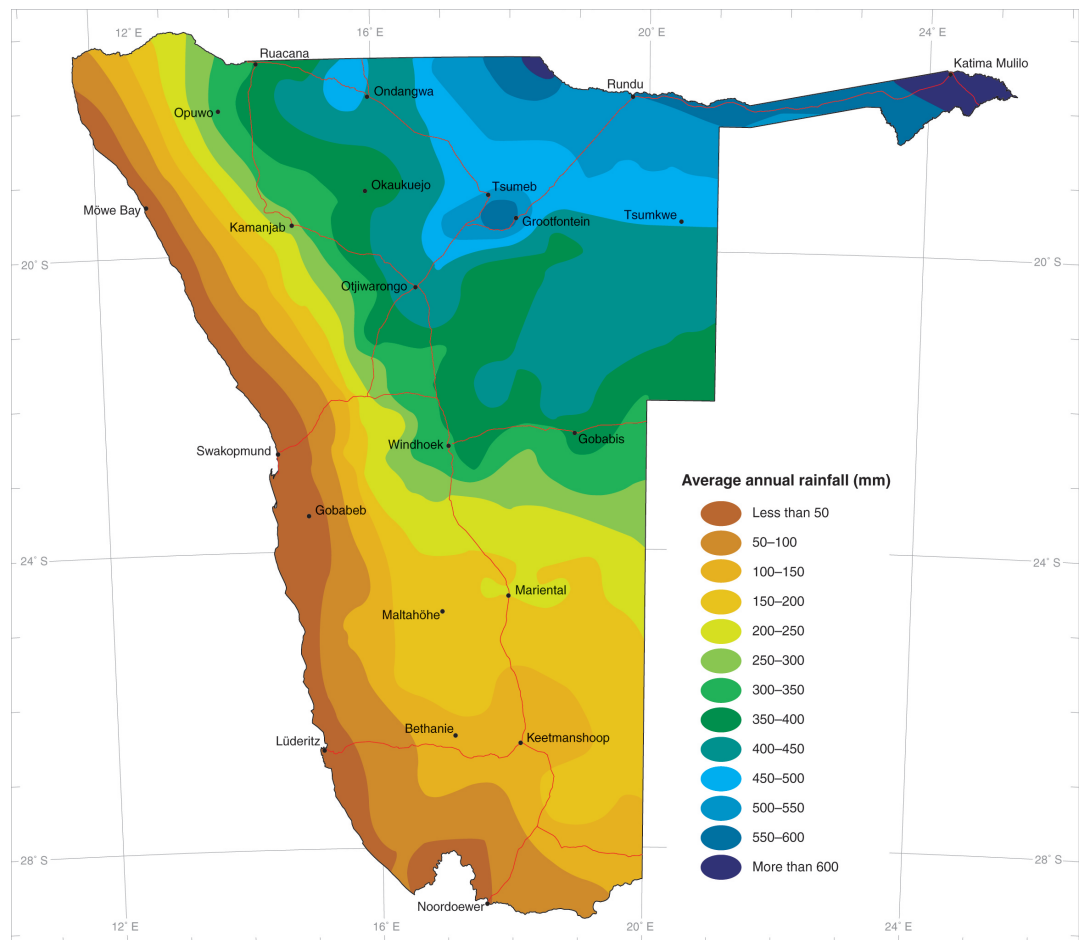


Figure 1: Average annual rainfall (Mendelsohn et al., 2002)

Studies on the vulnerability of agriculture to climate change in Namibia project shorter rainfall seasons, and more intense individual rainfall events are expected. It is not clear if overall rainfall will decrease or increase. Temperature is, however, expected to increase based on decadal trends; these higher temperatures will exacerbate the water balance through increased evaporation and evapotranspiration (Mendelsohn et al., 2002; Dirkx et al., 2008; Hulme, 1996; Galvin & Ellis, 1996).

TYPES OF RISK FACED

Namibia has long faced climatic variability and extremes, but in the past, the relatively small, mobile population with its herds of livestock was able to withstand shocks and counter climatic variability, land degradation and desertification (Kellner & Moussa, 2009). An extensive study was conducted by Dirkx et al. in 2008 on the impacts of climate change on the water and agricultural sectors in Namibia. Global Circulation Models were used, scaled down to regional level, as well as meteorological data from the government meteorological services (Dirkx et al., 2008). The study, and others such as Galvin et al. (1996) and Hulme (1996), suggests that Namibia will face ongoing increases in temperature, shortening of the rainy season and more intensive rainfall. All of these aspects have been recorded over the past several decades and are expected to intensify. As populations of people and livestock increase and climate variability is heightened, new approaches that empower communities to make decisions to address the changing situation are required. At risk are jobs, the economy, ecosystem health, livelihoods, well-being, culture, water supplies and

availability of food to throughout rural Namibia in varying degrees. Box 1 describes the characteristics of the potential impacts of climate change in Namibia.

Box 1: Potential Impacts of Climate Change in Namibia

Uncertainty is an issue affecting the rangelands and livestock industry. Communities' livelihoods are therefore affected by this uncertainty which reflects variable rainfall resulting in variable rangeland conditions that cannot be relied upon from year to year or even decade to decade.

Changes in mean climate, such as changes in temperature and precipitation levels, will affect the environment supporting the livestock industry and may cause a shift northwards to more suitable rangeland (Dirkx et al 2008).

Change in variability of the climate system in the form of an increase in already high variability is expected to influence rangelands.

The widespread spatial dimensions of climate change impacts are expected to influence the entire country making grazing refuges difficult to find.

LIVESTOCK MANAGEMENT AND LAND DEGRADATION IN NAMIBIA'S COMMUNAL FARM AREAS

Decision making for climate change in this arid, variable country has always been of concern for Namibia, particularly in rural communal areas. Communal areas represent that part of Namibia in which the state owns the land and people only have use rights over the land. The original purpose of communal areas in Namibia was for the indigenous people to share the common property resources that existed in open areas (NIED, 2010). Whilst commercial farmers in Namibia have "freehold" land rights that allow them to own and have title deeds to the land, farmers in Namibia's communal areas have only elementary land rights. Despite contributing about 5% to the national economy, communal areas occupy about 48% of the Namibia's land area (Sweet, 1998). According to World Bank figures, 63% of Namibia's population live in rural communal areas and the majority of

these people are economically disadvantaged (USAID, 2010).

Livestock farming is the main focus of communal areas, mixed with dry land crops in the northern part of the country (Mendelsohn, 2006). While crop farming depends on demarcated lands that are individually owned, livestock farming depends on using the commons as the key resource for maintaining the animals. Although fencing of communal land for private use was not allowed prior to independence in 1990, richer communal farmers soon started to fence off large areas of the commons for exclusive use (Kerven, 1997). This development caused more and more farmers to be restricted to smaller areas of available commons that evolved into areas of open access without coordinated management. This situation was exacerbated by an increase in the number of livestock in the communal areas, as livestock serve as a form of investment as well as indicate social status. In most instances, farmers were working independently of each other to achieve their own farming aims (Kambatuku, 2003a).

HISTORY

Local communities and commercial farmers in Namibia have always known the importance of monitoring and forecasting future changes in rainfall and temperatures for the survival of their livestock industry. Monitoring and forecasting environmental change has been practiced for centuries, mostly rooted in the experiences and traditions of the herder lifestyle of local communities (Kellner, 2009). In the past, droughts and occasional heavy rains guided the decisions and movements of cattle herders. Today, however, mobility is no longer a viable option as communal farms now feature extensive fencing in some areas, wide-scale provision of piped water and boreholes, and ever increasing livestock herds (Twyman, 2001). In addition, after Namibia gained independence in 1990, communal farmers also had

to address changing political, economic and social conditions accompanied by new approaches to natural resources management (Mendelsohn, 2006). It was imperative for Namibia to address this problem at the policy level in order to support its communal farmers.

POLICY LANDSCAPE

The policy landscape in Namibia, despite the contradiction between expectations for high productivity amidst prevailing aridity, represents a relatively progressive framework towards sustainable development (Dewdney, 1996; Desert Research Foundation of Namibia [DRFN], 2004). With independence in 1990, government attention was shifted from providing agricultural extension support for “freehold” commercial farms to supporting the communal farmlands. This was an attempt by the newly independent government of the Republic of Namibia to address the inequalities of wealth that existed between communal and commercial farmers prior to independence (NIED, 2010). With this shifting of focus came policies that also attempted to achieve sustainable development in communal areas. There was a strong effort to combat land degradation and desertification which were negatively affecting the livelihoods of farmers in communal areas.

Desertification and land degradation were incorporated in Namibia’s Green Plan presented by its president at the UN Conference on Environment and Development (Brown, 1992). Growing out of the Green Plan and in support of the United Nations Convention to Combat Desertification (UNCCD), Namibia established its Namibian Program to Combat Desertification (Napcod). The main objective of the Namibian Program to Combat Desertification was to “*improve the ability of rural communities to manage their land and resources more sustainably and to lessen their vulnerability to land degradation and drought* (Napcod, 1999).” The Namibian Program to Combat Desertification

was instrumental in strengthening local-level institutions for facilitating information exchange in the livestock management sector and establishing the FIRM approach (Seely, 2010; DRFN, 2004).

In addition to the Namibian Program to Combat Desertification, the following policy landmarks also sought to address the problem of land degradation and desertification that affect the agricultural and water sectors and apply to climate change in Namibia. These policy landmarks also support local community empowerment, to varying degrees, in rural areas.

- a) The National Agriculture Policy, 1995, has an overall goal *“to increase and sustain levels of agricultural productivity, real farm incomes and national and household food security within the context of Namibia’s fragile ecosystem.”*
- b) Namibia ratified the United Nations Framework Convention on Climate Change (UNFCCC) in 1995; the United Nations Convention to Combat Desertification (UNCCD) in 1996; and the United Nations Convention on Biodiversity (UNCBD) in 1997. All of these international agreements encourage local community participation in natural resource management.
- c) Other relevant policies include the Namibian Drought Policy and Strategy, 1997; National Land Policy, 1998; National Resettlement Policy, 2001; Water Supply and Sanitation Sector Policy, 1993, revised 2008; and National Water Policy, 2000.

POLICY INTERVENTION

Development of the Forum for Integrated Resource Management (FIRM) Approach and Local-Level Monitoring

With the focus of government extension services shifting from commercial to communal farming after independence in 1990, a number of donor-funded projects were designed to enhance communal farming and, *inter alia*, to develop the capacity of extension services to serve communal farmers (Kroll & Kruger, 1998). In particular, four donor-funded projects from two donor organizations (see Box 2) were piloted in the Kunene district in north-western Namibia, and implemented in conjunction with the Grootberg Farmers’ Association. The Grootberg Farmers’ Association is a well-run community-based organization based in the Kunene. Initiated by the community itself, the Grootberg Farmers’ Association was established in the 1970s and focuses on farming activities in the area. It is affiliated to the Namibian National Farmers’ Union (Taye, 2006).

Box 2: Donor-Funded Projects that Led to the Development of the FIRM Approach

German Technical Cooperation (GTZ) funding: Communal Area Water Supply Project, Sustainable Animal and Rangeland Development Project and Namibia’s Program to Combat Desertification (Napcod)

United States Agency for International Development (USAID) funding: Community Based Natural Resource Management project.

At that time, the traditionally sectoral approach of donor organizations and government extension services towards communities had several shortcomings, including duplication of efforts, confusion about who was responsible for what, and the absence of a holistic view (Bethune & Pallet, 2002). Thus in the Grootberg area, the implementation of four different projects with different requirements and with the same community-based organization proved difficult for all parties involved. It soon became clear that the Grootberg community was unable to put in the required effort for each separate initiative although they recognized the value of each of the four donor-funded projects (Bethune & Pallet, 2002; Seely & Montgomery, 2009). In an unprecedented approach, the four donor-funded projects, at the request of the Grootberg Farmers' Association and the government, agreed to pool some of their resources and interactions in order to work in a coordinated manner to support the community (Desert Margins Program, 2004; Seely, 2010). This was done in close consultation with the executive committee of the Grootberg Farmers' Association and with its membership's full approval (Seely & Montgomery, 2009). This coordinated approach became known as the Forum for Integrated Resource Management approach with an emphasis on 'approach' rather than a blueprint for coordination (Kambatuku, 2003a). That is, the FIRM approach provided overall guiding principles to address coordination that could be adapted for each community-based organization as they saw fit. The purpose was to:

“Develop a replicable model of inter-sectoral co-operation by implementing integrated management practices in a manner that ensures that renewable natural resources produce sustainable and equitable flows of benefits to communal area resource user groups (Manning & Seely, 2005)”.

The establishment of the FIRM approach was first initiated as a responsive measure, and eventually became a forward-looking flexible policy preparing

for future changes. The approach was designed initially to provide a two-way communication mechanism between the communal farmers on the one hand and government extension services and donors on the other in order for the community to make better-informed decisions about their own livestock management and natural resources management in general (Kambatuku, 2003a). It is also important to note that the approach empowered a community-based organization to “*organize, plan and monitor development activities in their area while coordinating the interventions of others, i.e. service providers* (Desert Margins Program, 2004).”¹

Initially the Grootberg Farmers' Association and the four projects worked with agricultural extension services as their government partner and service provider. The pooled funding from the four projects supported two volunteers who helped the Farmers' Association develop a constitution, institutional arrangements and operating procedures including, importantly, financial management (Seely, 2010). At the same time, the four projects took the opportunity to introduce the concept and modalities of development planning including implementation, monitoring and evaluation to the community (Seely, 2010; Kruger et al., 2009). Soon the approach evolved to be a community-driven process involving not only the Grootberg Farmers' Association, the four projects, and agricultural extension, but also other service providers from government, non-governmental organizations, and the private sector. Most importantly it provided the community with the organizational strength and credibility to engage with a variety of other stakeholders such as members of the community who were not initially involved, as well as other donors (Kruger & Kambatuku, 2003).

¹ Service providers included government, NGOs, donors, private sector, etc.

Although the FIRM approach has developed throughout the country, it does not represent a uniform national project but rather a number of individually initiated organizational developments amongst communities (Seely, 2010). At the individual level, each community-based decision-making institution or platform for information exchange that follows the approach is called a Forum for Integrated Resource Management or FIRM (plural: FIRMs). The FIRM approach has also been expanded by various partners working with other communal farmers and their organizations (Kruger & Kambatuku, 2003; Desert Margins Program, 2004). As the approach evolves, it tends to be called by different names with slightly different areas of focus. At the same time, the focus amongst communities and supporting donors has recently shifted from addressing land degradation to adapting to climate change, using already established community-based organizations and institutions (UNDP, 2009).

The FIRM Approach at the Institutional Level

The FIRM approach has been adapted at the individual community-based level and takes many types of institutional forms. FIRMS are usually organized around an existing community-based organization such as the Grootberg Farmers' Association and may take the following forms:

- a) A community-based structure or FIRM such as the Grootberg Framers' Association that takes the lead in coordinating the activities of the community and those of service providers. In some instances, service providers and commercial farmers are members of a FIRM;
- b) An annual planning FIRM meeting organized by the community, inviting and involving service providers, or
- c) At least half-yearly, a review/monitoring and evaluation FIRM meeting is called by the community including service providers to ensure accountability on all sides.

(Adapted from Desert Margins Program, 2004)

The Grootberg Farmers' Association was essentially the first FIRM. This FIRM “*coordinated service provision by a variety of government and non-government bodies; wrote its own proposals for funding; established a Women's Desk; undertook integrated land-use planning; and implemented sustainable resource management plans at the local level. Community members undertook exchange visits and participated in various national and international gatherings focused on sustainable resource use* (Desert Margins Program, 2004).”

Local-Level Monitoring

A major tool was developed to help communities and the information-exchange platforms (FIRMs) in their decision making. This tool is known as Local-Level Monitoring and is central to decision making for communities whose focus is on livestock management such as the Grootberg Farmers' Association. It was originally introduced by service providers and funders (USAID) and adopted as a tool for communities to use at their own initiative for management of their resources (Kruger et al., 2008; Kambatuku, 2003a). Scientists had a part to play in the establishment of Local-Level Monitoring. In particular, they provided the baseline and helped with the development of tools for monitoring and analyzing results (Kruger et al., 2008; Kellner & Moussa, 2009).

Local-Level Monitoring is essentially a monitoring tool designed in conjunction with the community to measure changes in certain indicators over a given time. Different communities may select different indicators to monitor but they usually include: (i) condition of livestock, that involves the farmer matching the condition of 25 animals per month with five pictures ranging from very poor condition to very good (ii) condition of fodder and its availability, which also uses pictures taken at sites (iii) condition of rangeland, and (iv) rainfall, which is measured with a volumetric rain gauge (Kellner & Moussa, 2009; Seely, 2010). By analyzing and

discussing the results of these observations, a basis for decision making is established. According to Seely (2010), these indicators may be measured monthly or more or less frequently, depending on decisions by those community members involved in the implementation of the tool. Local-Level Monitoring is not implemented by service providers nor are incentives provided to communities by service providers (Seely, 2010). Indicators are identified during discussions amongst FIRM members from the community and service providers.

Interpretation and discussion of the implications of the monitoring results take place at FIRM meetings with assistance from service providers as needed. The implications identified through the monitoring tool, for example, poor grazing conditions or poor livestock condition at the end of the rainy season when condition should be good, are integrated into the operational plans of the FIRMs. The operational plan may thus include, for example, some form of group-managed rotational grazing or group herding to give particular areas of rangeland a rest, or may include nutrient supplements for livestock in the form of salt and nutrient blocks for animals (Kruger et al., 2009). The Local-Level Monitoring concept

“tries to integrate the knowledge, experiences and data captured by the local land user to make them more aware of the causes of changes in their rangeland and will help in the decision of appropriate management strategies that can be implemented or adapted that suit their specific needs (Desert Research Foundation of Namibia, 2007).”

The Local-Level Monitoring tool therefore emphasizes a more direct early warning system for communities who are directly affected by land degradation (Shikongo, 2005). This is applicable for monitoring and adapting to climatic changes as well. Benefits to communities arising from decisions based on the results of Local-Level

Monitoring are usually enhanced rangeland for their livestock and eventually increased incomes and improved livelihoods for the communities. Benefits also include development of communities that are more self-sufficient, a reduced need for service providers to supply drought relief, greater turnover of farm products and other enhanced economic developments for the community and the economy in general (Seely, 2010). Table 1 shows the key players usually involved in the implementation of the FIRM approach (i.e. donors, civil society organizations, government agencies and other key actors) and their roles.

Key players	Roles
Community-based-organizations, e.g. Farmers' Associations	Leader of FIRMs, convene meetings, lead compilation and follow-up on implementation of operational plans
Ministry of Agriculture, Water and Forestry – Government Extension Officers	Provide community-based organizations with information about farming, opportunities for funding, access to equipment, and inform development projects and other government agencies about organized community-based organizations.
Directorate of Veterinary Services – Extension Officers	Provide veterinary advice and medications for livestock.
Directorate of Rural Water Supply – Extension Officers	Maintain water points, provide information; support Basin Management Committees that involve CBOs as stakeholders
Ministry of Environment and Tourism	support various evolved organizational CBOs
Other ministries	On request from community-based organizations, provide information and support within their mandates, e.g. Ministry of Health and Social Services, Ministry of Education
Non-governmental organizations	Backstop FIRMs & Local-Level Monitoring; help establish indicators and methodologies; provide training and information
Private sector	Provide training and information; maintain businesses where agricultural requirements, e.g. salt-licks, medicines, ear tags and other supplies can be purchased
Donors- For example, German government through GTZ; USAID; Norwegian government, European Union(EU	Funding for initial establishment and testing of FIRMs and Local-Level Monitoring through the Namibian program to combat desertification(Napcod); contributing to formation of community-based organizations using variations of the Forum for Integrated Resource Management(FIRM) approach
Other donors for example, United Nations Development Program(UNDP), Global Environment Facility (GEF)	Initially supported development of the Forum for Integrated Resource Management (FIRM) approach; they intermittently participate in FIRM meetings and some support the community-based organizations directly. The United Nations Development Program(UNDP) for example, support Integrated Natural Resource Management/ Local Level Coordination (INRM/LLC) through the Global Environment Facility(GEF)UNDP Country Pilot Partnership (CPP)

Table 1: Key Players Involved in the Forum for Integrated Resource Management Approach

The FIRM–Local-Level Monitoring Communication Mechanism

Exchanges amongst members of community-based organizations and service providers — including the various extension services (water, veterinary, agriculture) provided by Ministries, NGOs and the private sector — take place at FIRM meetings (Akhtar-Schuster & Bigas, 2010). These exchanges help to identify the community's information needs such as information about farming, livestock health and management, and sources of funding from donors and government programs. In addition, service providers might provide information that they think would be of interest to the FIRM, for example, new programs being introduced by government (Seely, 2010). The two-way exchange is essential to ensure that service providers are responding to the information needs of the community and that the community understands the implications of the information provided by the service providers (Akhtar-Schuster & Bigas, 2010; Kambatuku J., 2003a).

Local-Level Monitoring is one of the sources of information that helps FIRM members make collective decisions, for instance, about communal rotational grazing or about marketing livestock. The FIRM helps to ensure that the lands used communally by all are managed as commons and not used simply as open access areas with no traditional or imposed regulations (Seely, 2010). Information exchange is an important aspect of Local-Level Monitoring. The information may come from farmers focused on livestock condition, rangeland condition, or fodder availability, or from school children measuring rainfall. Information may be collected and analyzed individually or in groups and is then discussed at FIRM meetings (Kruger & Kambatuku, 2003). This exchange enhances discussion amongst community members as well as with service providers. After discussions in FIRM meetings, solutions may include: adoption of communal herding; rotational grazing while

ensuring sufficient rest for parts of the range; seasonal rather than continuous breeding by separating bulls and cows much of the year; introduction of improved livestock; and efficient and effective livestock marketing rather than maintaining large herds as status symbols (Seely, 2010). New information from Local-Level Monitoring is constantly integrated into the FIRM discussions and contributes to decision making when understood and accepted. On the other hand, information concerning marketing of livestock, animal health, animal nutrition, rotational grazing and other rangeland management practices, as well as advice on training opportunities are requested and provided through service providers.

Decisions made by FIRMs are often taken at monthly or quarterly meetings. Small sub-committees are established for crucial issues and authorized to make decisions and report to the next FIRM meeting (Bethune & Pallet, 2002). Alternatively, decisions are taken by established or *ad hoc* sub-committees and reported to the main committee. Decision making within a FIRM is facilitated more efficiently if the community-based organization at the heart of the FIRM has a strong leader (Manning & Seely, 2005).

As the government extension services and NGOs also have their external communication partners, information may be widely exchanged. Drawing on their experience within the FIRMs and the support of national and regional service providers, some community-based organizations develop their capacity to such a level that they have the information and the ability to communicate directly with international bodies and national policy makers (Montgomery & Seely, 2009).

For example, the chair of the FIRM at Grootberg (a local communal farmer) attended and contributed to the first United Nations Convention to Combat Desertification (UNCCD) meeting of the Committee for the Review of Implementation of the Convention (CRIC1) in Bonn. He had already been part of a group that presented to Arba Diallo in Namibia, who was head of the UNCCD at the time. In addition, he participated in an international symposium on desertification in Cape Town, South Africa (Montgomery & Seely, 2009). Figure 2 illustrates the FIRM mechanism for potential information exchange.

OUTCOME

A major outcome for struggling communal farmers as a result of the development and implementation of the FIRM approach, augmented by Local-Level Monitoring, was enhanced communication and information exchange at all levels (Kambatuku,

2003a; Kellner & Moussa, 2009). On the ground, community members, extension service providers from various ministries, the private sector, and non-governmental organizations worked together to see that livestock and rangeland management improved. Such improvements included more timely reduction of livestock numbers and selling of livestock as dry periods developed. They also included community-organized action to establish rotational grazing and

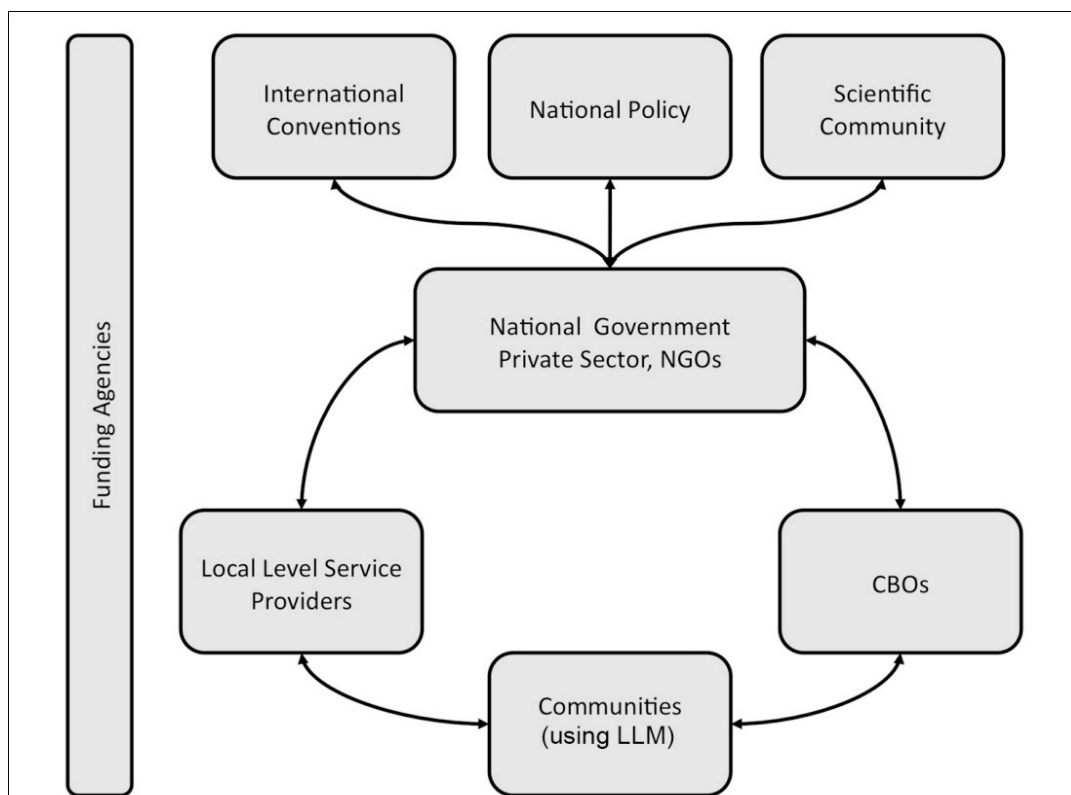


Figure 2: The FIRM Communication Mechanism - FIRM communication represents a continuous exchange among all management levels.

appropriate resting of the grazing lands. Other improvements included active herding of animals in predetermined directions as rangelands varied after use, and cooperative purchases of required livestock medications. As a result of monitoring and subsequent information exchange, communities have been able to, for example, provide good supplementary feeds to prevent declines in livestock condition during the dry season. The selling of

livestock to prevent overgrazing during dry periods has allowed communities to bank their wealth in the form of bank accounts and increase income and livelihoods. This is in contrast to the traditional method of keeping livestock as a form of wealth even when it is in poor condition. Some of the more evolved FIRMs, known as “innovation platforms” have allowed communities improved access to markets and improved technologies for livestock management (van Rooyen & Homann, 2010). Others such as “event books” have proven to be a cost effective tool for aggregated data collection (Stuart-Hill et al, 2005).

The development of strong community-based organizations which interacted with government and other service providers helped to facilitate local/national communication within ministries, a weak link previously identified in the Global Environment Facility/United Nations Development Programme-funded National Capacity Self-Assessment (NCSA). Community-based organizations, government extension services and non-governmental organizations spread information about the process within their organizations and, in some instances, externally. Information relevant for policy development was disseminated in various forms: briefs within ministries; awareness-raising activities ranging from workshops that involved decision makers as well as FIRMs; to presentations to the Standing Parliamentary Committee on Economics, Administration and Natural Resources; to dissemination of single page broad sheets known as Environmental Updates to members of parliament by the Desert Research Foundation (DRFN) of Namibia (Seely, 2010).

The FIRM approach itself and the Local-Level Monitoring tool have evolved and been adopted by a variety of other projects (Bethune & Pallet, 2002). This can be interpreted as a successful development of the concept. Even though individual FIRMs evolved and adopted new names and modalities of operation, the overall objectives remained the same.

Local-Level Monitoring and its successor approaches are expanding and making information available to others at the national level. Obtaining and sharing information is a welcome development for farmers, for extension personnel, and all who are attempting to work together to improve livestock and rangeland management. Meanwhile, pressure from donors to require innovation has also led to newly named approaches that, nevertheless, essentially follow the FIRM approach and/or Local-Level Monitoring. Below are some examples of such projects and programs:

- a) **Event books:** The event book system is a tool similar to the Local Level Monitoring tool developed for livestock farmers. Game guards who are members of community-based organizations that focus on wildlife management record information concerning wildlife population trends, for example. Event books have mainly been established through the USAID-funded Community Based Natural Resource Management project (Stuart-Hill et al., 2005).
- b) **Innovation Platforms:** The AgriBank of Namibia has adopted a market-based approach under its Farming Support Program and named it Innovation Platforms. It facilitates dialogue between the main local players in the value chain: farmers, input suppliers, traders, transporters, processors, wholesalers, retailers, regulators, and the research and development fraternity (van Rooyen & Homann, n.d.).
- c) The United Nations Development Programme (UNDP) Country Pilot Partnership – Integrated Natural Resource Management Program Local Level Coordination (CPP/INRMP/LLC), funded by the Global Environment Facility, has adopted and adapted the FIRM approach. Although directly evolving from the extensively tested FIRMs, it used different terminology as required by the donor (Montgomery & Seely 2009).

d) The Global Environment Facility Small Grants Program uses the FIRM approach supported by Local-Level Monitoring to support, *inter alia*, their Community Based Adaptation to Climate Change Self Help Groups. Again, this represents a similar approach with different names and emphasis. Small grants are made available to community-based organizations that have organized themselves and have developed their own proposal. The proposal and its implementation include a mechanism for monitoring and evaluation that echoes the approach used by Local-Level Monitoring (UNDP, 2009).

REASONS FOR SUCCESS

The success of this initiative can arguably be attributed to the creation of a bottom-up and flexible adaptive mechanism in Namibia that has the ability to respond effectively to the impacts of land degradation and now climate change in rural areas. Several other factors contributed to its success and are described below.

Relationship between Actors in the Policy Arena

A lot of environmental work in Namibia is enhanced because of the good working relationship between the government and NGOs (DRFN, 2004). NGOs often serve as conduits for conveying information from community-based organizations on the ground to the national level. The Namibian Program to Combat Desertification, through which the FIRM approach and Local-Level Monitoring arose, was a partnership of government and NGOs. A lead NGO was responsible for financial management of the program and reported to the Ministry of Environment and Tourism, which was the signatory with the donor throughout the three phases of the 10-year program (Seely & Montgomery, 2009). Another NGO served as the lead implementing agent working with a variety of other government, private sector and community

stakeholders, and won a tender for implementation during the three phases of the Namibian Program to Combat Desertification (Seely & Montgomery, 2009). Other NGOs served on the Steering Committee while yet others were members of the FIRMs at various sites. Cooperation between donors and government during the establishment of the first FIRM and associated Local-Level Monitoring in the Grootberg area was excellent (Seely & Montgomery, 2009). As elaborated above, the flexibility of the donors to allow funding from four different projects, addressing communal area water supply, sustainable animal and rangeland development, community-based natural resource management, and desertification, to be partially combined to support one community-based organization was unprecedented at the time. The donor-funded projects were supported by two ministries, the Ministry of Environment and Tourism and the Ministry of Agriculture, Water and Farming, which made the collaboration even more exceptional.

Local Ownership

The approach has succeeded because wherever it is applied it gives ownership to those involved. It adapts and evolves to support a variety of environmental, social, economic and institutional situations. Local-Level Monitoring is driven by the communities themselves and the information gathered and results analyzed are used by communities for their own livestock and rangeland management.

Mechanisms to Push Decisions Through Quickly

The mechanisms for pushing through decisions quickly were established during the Namibian Program to Combat Desertification which supported the formation, evolution and implementation of the FIRM approach and Local-Level Monitoring when they were new, untested concepts. A decentralized decision making approach allowed less senior

members of a steering committee to make urgent decisions when needed. This was adopted in the various adaptations of the FIRM approach (Seely, 2010).

CHALLENGES

Evaluations of the FIRM approach have identified some challenges. For example, recent documentation suggests that the FIRMs were at times plagued by limited sustainability and limited capacity of communities to spearhead interventions on their own within a specified time frame. The Desert Research Foundation of Namibia (2004)

indicated that, *“Transition to complete self-reliance is slow and mainly determined by the rate of change with which the community is comfortable. This requires considerable patience and flexibility from all other stakeholders, particularly projects bound by a certain timeframe and rigid spending patterns”*. Indeed others have argued that individual FIRMs per se were not necessarily 100% successful in reaching their objectives of collective livestock and rangeland management (Seely & Montgomery, 2009). Table 2 summarizes comments obtained from a brief survey of those involved in the original FIRM, at the Grootberg Farmers’ Association.

Table 2: Achievements and Challenges of the FIRM Approach (adapted from Seely & Montgomery, 2010).

Achievements	Challenges
<ol style="list-style-type: none"> 1. Involves a variety of stakeholders interested in the same issues. 2. Serves as a platform for sharing of information and knowledge. 3. Provides a platform for integrated planning, involving a variety of stakeholders. 4. Focuses on support where it is really needed. 5. Puts the community in the “driver’s seat.” 6. Is conducive towards improving understanding and the development of long-term visions. 7. Minimizes duplication of activities. 8. Provides a holistic picture of the challenges and opportunities within a community. 9. Allows opportunities for participatory monitoring, evaluation and adjustment of planned activities. 10. Improves transparency with respect to roles and responsibilities of different partners. 11. Ensures more efficient use of human and financial resources. 	<ol style="list-style-type: none"> 1. Mainly initiated by external service providers. 2. A lack of buy-in from some important partners in the field of natural resource management. 3. Issues of power at the local level have a negative effect on the community. Lead community-based organizations may sometimes become the “elite” within their community. 4. Still some one-sided competition among certain service providers. 5. Institutional and financial sustainability not clarified for when donors withdraw. 6. Irregular attendance of some service providers, e.g. extension services and non-governmental organizations 7. A lack of continuity and high turnover amongst representatives of the different organizations represented in a FIRM. e.g. extension service providers, non-governmental organizations, community-based organizations

CONCLUSIONS AND LESSONS LEARNED

Local-level decision making processes have been adopted worldwide, and they have become ever more pertinent today in the midst of a changing climate. “*Although resource users have the greatest interest in and often know best how to use resources sustainably, this information is often not considered at higher levels, in planning and policy design, by extension service providers, or other support organizations* (UNDP, 2009).” Namibia has been hailed for attempting to bridge this gap through the Forum for Integrated Resource Management–Local-Level Monitoring initiative (UNDP, 2009). The initiative has greatly improved communication between decision makers and local farmers, but has yet to make a significant impact on national level laws (Akhtar-Schuster, 2010). Although driven by a need to provide bottom-up decision making, this model suffers from the usual trap of unsustainable financing when donor funding “dries up.” The approach does tend to require ongoing support at varying levels. It requires inputs from service providers that, although it is their mandate, they may not be prepared or have the capacity to provide. As a consequence, in places where ongoing support cannot be provided, or where there is a high turnover of the members of the community-based organization as a result of their newly gained

expertise, the process has not continued (Seely, 2010). Finance to support FIRMs and Local-Level Monitoring is therefore essential as the program is being established (Kambatuku (Ed.), 2003a&b). We argue that the government (national and regional level) should be more vocal about the successes of FIRMs and other bottom-up approaches and that it should encourage strengthening of community-based decision-making platforms and tools. In Namibia, the population is very focused on what the government thinks, and government promotion would encourage more bottom-up action (Seely, 2010). For example, the government may need to embark on an aggressive public education campaign about the effects of land degradation on future livelihoods for the younger generation, especially in light of climate change, in order for the initiative to continue as a locally-driven approach. It also needs to engage the private sector more effectively to provide sustainable financing. Nevertheless, the establishment of the Forum for Integrated Resource Management in Namibia has received acclaim and has been replicated elsewhere especially in southern Africa. This type of community-based approach that empowers local communities to take the lead in staying informed about changes in their environment provides a simple but scientifically-based early warning system that will enable them to better adapt to changes in climate.

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