

**The Importance of Participatory Approaches
For Dry Land Management and
Anti-desertification Programs**

Based on Case Studies from
Burkina Faso, Ghana, Kenya and Zimbabwe

Prepared for the
Intergovernmental Negotiating Committee for a
Convention to Combat Desertification

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I. INTRODUCTION

Desertification, or land degradation in dry climates, is a problem estimated to directly affect about one sixth of the world's population. Desertification's effects are particularly severe in certain countries of Africa and Asia. Its indirect effects, in terms of contributing to poverty problems and human migration, are also significant.

Recent phenomena, such as intensive cash cropping, large scale human migration, and population pressure contribute to the problem. Extractive activities, such as mining and timber production, can affect watersheds and result in deforestation and ensuing desertification. Desertification can be a problem even in places which receive significant amounts of seasonal rainfall, as population pressures lead to soil degradation during the dry season, with consequentially greater pressure on the remaining arable land.

Since the causes of desertification include human activity as well as weather and climate-related changes, it is a problem that often can be prevented, alleviated, and even reversed through concerted human efforts. Efforts to combat desertification are underway in many places. Some of these have produced good results; others, despite significant investment of resources, have been less successful.

The reasons for success or failure of different programs to counter desertification are not well understood. One of the factors that has been suggested as a critical ingredient is the direct involvement in anti-desertification programs of local communities and citizens living in affected areas. But the nature of the local participation that may make anti-desertification programs more successful is not well documented. The purpose of this paper is to examine four cases of such participation from Africa and draw lessons from them about how community-level involvement can enhance the effectiveness of anti-desertification efforts.

II. METHODOLOGY

This study is the product of collaboration between four organizations:

- The African Association for Literacy and Adult Education (AALAE), headquartered in Nairobi, Kenya, with 22 National Associations throughout Africa;
- The Center for Community Studies, Action and Development (CENCOSAD), Accra, Ghana;
- The Organisation of Rural Associations for Progress (ORAP), Bulawayo, Zimbabwe; and
- The Synergos Institute, New York, USA.

In this study the direct involvement of African communities, community organizations and local non-governmental organizations (NGOs) in efforts to combat desertification were documented, studied and then analyzed for their policy lessons. After wide consultations with NGOs and other groups in each country, four cases were selected, one from each of the following countries: Burkina Faso, Ghana, Kenya, and Zimbabwe.

These four cases were selected because they demonstrate that significant knowledge about desertification exists in rural communities and that communities in these countries are taking effective action to prevent, halt and even reverse desertification.

The cases were prepared by African casewriters who have firsthand knowledge of the cases. The writers utilized both written materials on the cases and interviews with representatives from the cases in preparing the studies.

Based on the case studies, the paper draws lessons about:

- differences between conventional anti-desertification projects and participatory, collaborative projects; and
- ways in which governments, aid agencies and private donors can support collaborative and participatory approaches.

The findings and conclusions of the paper reflect a joint analysis of the cases by the three African casewriters and The Synergos Institute contributors.

III. CASES

A. Gabionettes, Afforestation and other Environmental Management Activities in Burkina Faso's Yatenga Region

Background

This case is from Burkina Faso's Yatenga region, an area of approximately 60,000 square kilometers with a population of about 540,000 inhabitants. Rainfall in the region averages about 500mm per year, but varies greatly from year to year. Population pressures on arable land, exacerbated in times of drought, have resulted in land degradation.

The local people are aware of these problems, and have responded through the activities of Naam groups. These groups, which are cooperative development associations, are an outgrowth of a traditional local institution -- the Kombi-Naam or "youth power groups." This traditional institution consisted of groups of male and female young people from a single village who would form work teams to assist in local field work and other tasks; payment for their labor would be collected after the harvest.

Today's Naams are regrouped within a national federation of 1,263 groups with about 300,000 members from throughout the country. This national Naam movement began in 1967 as an effort to promote environmentally sustainable development. Individual Naams are organized at a village level, and are coordinated through representative bodies at the district level and national levels. The method and philosophy of the movement consists of the group

and the individual taking charge of the search for solutions to their own problems.

At all levels, a major focus of the Naam groups is addressing environmental degradation and its effects: destruction of vegetative cover, reduction of soil fertility, decreased crop production and famine. These groups have recognized that regeneration of vegetation cover is the key to combating environmental degradation.

In support of efforts to combat environmental degradation at the local level, the national federation of Naam groups has developed a strategy to further sensitize local people to the problem of desertification and to provide access to appropriate technical knowledge. Two technical units -- the water unit and the agroforestry unit -- promote the use of technical interventions to address local environmental problems. All of these techniques are suggested to local Naam groups by the national federation as part of a menu of options which local groups choose from and implement themselves. Some of these activities, such as construction of *zai* (manure filled pits that, in addition to fertilizing the soil, retain moisture in degraded land during dry periods and help water enter the soil when it does rain), are traditional techniques that had fallen out of use due to the introduction of modern agricultural methods. Some of these approaches, such as the use of *gabionettes* (stone walls along land contours to hold soil and slow the movement of running water) together with *zai*, and installation of grass carpets, can be used to regenerate barren and highly degraded land.

The use of grass carpets to regenerate degraded land is a Naam innovation that is particularly noteworthy because the efficacy of grass in protecting and regenerating soil is often underestimated. Though grass is less conspicuous than trees, it can be very effective in protecting soil from wind and rain, helping rainwater sink into the soil, and preventing run-off. In many cases, the grass is also used as a resource for the production of medicine and crafts -- thus environmental management is integrated with rural production.

Information about these options for environmental activities reach local Naam groups through discussions and training at several levels. Trainers selected from the district level groupings of Naams travel from village to village as extension workers meeting with local groups. Local Naam groups select delegates -- termed local organizers -- for further training at the district level and by the technical units. Among the criteria used to select delegates is their commitment to remain in the village after training.

Training of these local organizers, as well as of the district level trainers, takes place at field schools, in the form of three to five day courses that can accommodate 50 to 100 trainees. All educational materials used in the training courses, including technical posters, booklets and slides, have commentaries in the national language of Moré. However, financial weaknesses have limited the translation and dissemination of information through technical posters and manuals.

...the peasants decide on the activities to be undertaken, and consequently organise themselves. The (national federation's) support at this level consists of training in order to help the peasants to take charge of the situation themselves.

Rugumayo

Together the trainers and local organizers help disseminate proven technical information to local groups, which in turn decide which environmental protection activities are most

appropriate to their local conditions.

The Naams measure their results in various ways. In 1992, 105,602 trees were planted, of which 64% survived into the following year. In 1993, 137,317 were planted. Gabionettes were constructed on 2,127 hectares of land, on which agricultural production improved by a mean of 39%. 5,145 villagers have been trained as local organizers.

Implications

- Adapting widespread existing institutions to address environmental problems can be an effective means of mobilizing large numbers of local people.
- Outside support can be effectively channelled to and through such institutions, particularly when those institutions have identified local needs. For example, support for translation and production of Naam technical materials could be an effective way to support the federation's work in environmental management training for farmers.
- The Naam method of using farmers as a key element in the dissemination of technical knowledge, both empowers local people and ensures that technical knowledge imparted is useable at the local level. It also allows for a two-way flow of information. The federation helps capture innovations created in particular places for wider dissemination.
- Provision of a menu of options to local people further ensures that projects undertaken are suitable to local conditions.

This approach uses farmers and communities as its focus. Farmers are quite willing to choose and implement both traditional and newer technical methods to fighting desertification because they are the ones who are most directly threatened by desertification's effects.

In contrast, conventional approaches to anti-desertification activities have viewed the problem principally through a framework of technology and resources. Farmers have been viewed mainly as targets for outside interventions rather than as decisionmakers and resources.

The Naam experience suggests that a key way for policymakers and donors to support anti-desertification efforts is to work through existing institutions that inform and mobilize large numbers of rural people.

B. Forest Protection and Forestry Programs in Ghana

Background

In Ghana, certain traditional beliefs and significant local understanding of ecology have contributed to preservation of trees and other parts of the natural environment. Despite this, pressure from farming, timber and fuel production activities have significantly degraded the natural environment. Forest cover in the country has been reduced from an original 82,000 square kilometers to only 24,000 kilometers by 1983. Trees maintain ground cover through their root systems, and also through their role in breaking wind and supporting other vegetation. Thus loss of trees represents a serious threat to other aspects of the natural environment and is often a first step in the process of desertification.

In the face of these problems, forest cover is being protected by communities due to local understanding of the ecological importance of trees, as well as by traditional beliefs protecting sacred groves. Recently, government agencies, NGOs and international organizations have begun to build on local knowledge and beliefs in efforts to preserve the natural environment through further protection and planting of trees.

Local people, especially older persons, have noticed marked changes in the fragile ecosystem, especially around areas where wetlands and swamps have been put under commercial rice cultivation and salt panning... Communities in these regions have, needless to say, been working assiduously to fight against the...desert.

Annorbah-Sarpei

Although in some parts of the country, such as the Northern Region to the east of the White Volta, there is a belief that trees can be dangerous, these beliefs are generally restricted to attitudes towards particular, individual trees. In contrast, in many parts of the country traditional beliefs in the sacred nature of groups of trees has been a starting point for community participation in anti-desertification efforts through re- and afforestation.

The Malshegu Sacred Grove is one example of preservation of trees through traditional religious beliefs. Community vigilance against molestation of the grove -- apart from collecting of certain forest resources during biannual rituals or special occasions sanctioned by village elders -- grows out of religious and historical belief in the importance of the grove and the danger to individuals and the community if the grove is damaged. This has helped the grove, which is located in an extremely dry and drought-prone area in the north of the country, to survive and fulfill significant ecological functions as a habitat for the region's fauna and flora.

The Ghanaian government has taken some steps that may help ensure that ecologically significant sites, such as the Malshegu Sacred Grove, are protected. Much of these steps are being carried out through the recently created District Assemblies, which are the lowest level of government public administration. District-level offices have been given special responsibility by the government "to promote through district bylaws and education on aspects of indigenous cultural practices which promote conservation of resources and enhancement of the environment such as sacred groves."

At the same time, the Ministries of Local Government and of Environment are providing some support for coordination of environmental activities at the district level, particularly by encouraging each district assembly to create a District Environmental Management Committee.

The extent to which these measures have yet had a significant impact on environmental protection is unclear. However, past experiences in Ghana suggest that when given sufficient authority and support, local government can help protect environmentally sensitive areas, particularly when the local community is working toward the same goal. One of the first examples of this is the Baobeng/Fiema sanctuary established by the Nkoranza District Council through a district bylaw. This area centers on a stream considered by local people to be the home of a god. The Department of Game and Wildlife supported efforts by the local people to survey the protected area, and also provided technical assistance. The combination of community interests (motivated by religious belief), local government initiative and outside technical support (in this case from the national government) has been effective in protecting a fragile ecosystem.

In other parts of the country, initiatives linking communities, local NGOs, and government agencies and foreign donor agencies have resulted in widespread tree planting. Some of these tree planting initiatives have a social/amenity component, using the amenity value of trees as a factor to mobilize community efforts.

In the Bongo area, these groups, including the Forestry Department, the Bongo-Agro Forestry Programme, the Environmental Protection Council, Amasachina, the Adventist Development and Relief Agency and others have contributed to increased community interest in tree planting and related activities. These activities include:

- the planting of seedlings;
- improvements in water supply infrastructure;
- interagency coordination and support for field research on raising tree seedlings most preferred by local people;
- improved transportation of people and seedlings; and
- educational campaigns and training programs using audio-visual aids and drama.

International donor agencies are increasingly playing a supporting role in such activities. Africa 2000 has organized educational and training activities to provide technical guidance to communities. It has also provided fora for diverse communities to meet and share experiences which have strengthened community development in activities including forestry and environmental protection.

Implications

- Government recognition of the importance of effective local level management of natural resources can be a key step in protection of existing forest resources. Ways to accomplish this include legal protection of sacred groves and other ecologically important sites, as well as the commitment of resources to protect these sites. Local

government is well-placed to implement these measures in concert with local people; however outside resources and technical assistance, such as assistance with surveying, may be needed as well.

- Well-directed technical assistance as well as support for inter-community networking can help community groups with afforestation and other environmental management activities.
- Existing local knowledge and belief systems can be a starting point for larger efforts to combat desertification.
- Environmental education and support for non-religious incentives for protection of sacred groves can reinforce traditional institutions that protect important natural resources. Care must be taken, however, to ensure that these efforts are not used as substitutes for traditional institutions.

C. Community Irrigation in the Kerio Valley of Kenya

Background

Kenya's Elgeyo Marakwet district of the Kerio Valley covers an area of 625 square kilometers with a population density of 10 to 30 persons per square kilometer and annual rainfall of 600 to 700 mm per year. In some contrast to the areas described in Burkina Faso, the land can be quite rich and is used for cash as well as foodcrops -- including citrus fruits, bananas, grains and cotton. The limiting factor in all these agricultural activities is water, and the land is becoming seriously degraded due to loss of topsoil (from erosion) and decline in both rainfall and soil moisture.

To address these problems, a complex and extensive irrigation system has been developed. It directs water from six main rivers through a system of over 40 canals with a total length of more than 250 kilometers. The longest of these canals is over 14 kilometers, and some of them direct water over slopes of more than 40 degrees. The system, parts of which are more than one hundred years old, uses permeable dams (to slow the flow of water), sluices and terraces (to control the flow of water) and aqueducts up to five meters high. It is used only during the dry season (drawing water from the rivers), being closed during the rainy season to minimize potential damage by large volumes of water.

The people's perception of the process and causes of land degradation is firmly based on their experience, and their perception is generally in agreement with scientific definitions of the process of desertification.

Rugumayo

This discussion will not examine the technical aspects of the system, but instead will consider the institutional structures that have constructed and maintained this system in the face of increasing population pressure on water and soil.

The system is not controlled by one group, but rather individual canals are constructed, maintained and owned by clans -- thus kept in operation communally. In some cases, based on the location of clans' landholding and sources of water, clans have joined together to

construct, maintain and own individual canals, with smaller diversions carrying water to each group's land. And, in other cases, clans with little or no landholding in the area enter into a special relationship with landowning clans and lineages to obtain *de facto* joint-ownership of canals.

Water for domestic consumption and for livestock is taken from whatever source is most convenient, regardless of ownership.

Allocation of water resources for irrigation is based on the *de facto* ownership described above, managed through monthly meetings of all those who use a particular canal. During these meetings, schedules of allocations to particular villages are set, and individual landholders within a village meet in turn to determine allocation at that level.

Maintenance of the system is similarly carried out through a system of clan-based communal labor and committees of elders that make decisions on the system, particularly when conflicts arise. It is noteworthy, however, that the system has developed over time to anticipate water shortages and allocate the resource so carefully during these periods that conflicts rarely occur. In addition, user involvement in decisions about water allocation helps mitigate ill-will amongst competing users.

The system is not perfect. It is not well-coordinated with specific soil-conservation efforts. Health hazards due to inadequate disposal of human and animal waste exist. And it is susceptible to damage due to flooding. Its maintenance is very labor intensive. The local people would like sturdier materials with which to build the system in order to reduce maintenance labor demands and to put less pressure on scarce local timber. And the local people would like to construct small local dams for water storage. They have the skill to do so, but they lack the materials. Outside agencies with resources or expertise to address these problems could enter into an effective partnership with communities on these issues.

Perhaps the system's greatest weakness is closely related to its strength. Being based on construction, maintenance and ownership by traditional clans, the system's survival is currently based on survival on the strength of local clans as economic and educational institutions. As Western-influenced modern educational and economic activities in the region increase, knowledge and engineering skills necessary for the survival of the system are not passed on to the new generation. Western-style educational and economic systems should not be used as substitutes to their traditional counterparts, but rather offered to communities as complements.

In contrast to the relative success of the irrigation scheme in Elgeyo Marakwet, many conventional irrigation projects in Kenya have been less successful. Many of these, such as the Bura project on the Tana river, have used significant amounts of capital but have not been appropriate to local cultural and economic conditions. The Bura project, which has cost over US\$100 million (from the Government of Kenya and the World Bank), significantly disrupted local patterns of land use and employment patterns (introducing an overwhelming cash-crop based economy), with negative effects. Population in the area increased suddenly and pressure on the land for energy needs led to further land degradation. Local institutions, which had not been involved in the process, were not in a position to address these problems. On the technical level, flooding and siltation were significant problems.

A smaller conventional project, the Hola project also on the Tana river, also met with poor

results. These can largely be attributed to a lack of community participation in the planning and implementation of the project, which could have informed outside planners of the history of the river periodically changing its course.

Implications

- A system with multiple and flexible benefits to the users, as well as benefits to a range of users (for households, farming and livestock) can produce a high level of local commitment to the initiation and support of a project than systems that benefit narrower components of rural society.
- Local technical expertise is sufficiently high to manage complex environmental projects. Efforts should be made to maintain this expertise even as outside educational systems and technical knowledge are introduced to rural communities.
- Knowledge of local social, economic and physical conditions can be a key ingredient for successful projects. Although outsiders can often obtain a reasonable knowledge about certain aspects of local conditions (and multi-disciplinary teams of outsiders can obtain a broader picture), the most comprehensive assessment of local conditions can often be obtained from local people themselves.
- Outside support (in the form of financing and/or materials) for effective projects based on locally-identified demands can help mobilize local resources (in the form of labor). Many conventional development projects are designed to use local labor. However, when communities play a key role in designing and planning development projects it is likely that their interest in providing labor will be greater and longer-lived. The longevity of local labor mobilization can be particularly critical for projects in areas such as irrigation, where maintenance is a key aspect of long-term success.
- Channeling outside support through partnerships with existing institutions (such as clan organizations and water users groups) can help ensure that the support is used in ways appropriate to local conditions.
- Occasional conflicts in allocation of scarce resources are often inevitable. However, when conflicts are anticipated and then addressed in ways that make the various actors are aware of other groups' needs, they are less likely to undermine cooperation. Transparency of decisionmaking, particularly about scarce resources, along with a multistakeholder partnership approach that shares decisionmaking among all the parties, can be key factors in addressing such conflict.

D. Anti-desertification Activities in Low-income Regions of Zimbabwe

Background

Traditional natural resource conservation in Zimbabwe was an outgrowth of the cultural importance attached to certain animal and plant species by local elites. Kings and chiefs would designate certain animal or plant species as totems for certain groups of people. Each group was forbidden from killing its totem, and as a consequence, demand on certain species was reduced. Often, these were ecologically important, or key, species whose existence is essential for the survival of other species.

Zimbabwe also has a history of conventional anti-desertification efforts, some of which have met with poor results. In 1938, the colonial government recognized that pressure on land in rural areas was having severe effects on soil resources and passed a law creating a Natural Resources Board in 1941. This body recognized that without intervention the country's native reserves (land set aside for use by the native population which was generally marginal land of limited productivity) were seriously threatened by desertification. It is noteworthy that pressure on native reserves was at least partially a result of forced movement of indigenous people to these lands.

The same law that created the Natural Resources Board also called for the creation of local conservation committees which included farmers and other local people. In practice, these committees were only created in white areas.

To address the problem of desertification in the native reserves, local people were required to build contour ridges in order to protect the soil. However, without conservation committees and without efforts to educate the public on the role of the contour ridges, the program met with resistance in these areas. The program was viewed by the public as a political imposition of the colonial government rather than as a useful environmental activity.

At the same time, nationally mandated efforts to protect livestock in the native areas worked at cross purposes to the soil conservation efforts. Centralized dipping stations were created which caused large movements of animals and large animal concentrations in particular areas, with resulting soil erosion along tracks to dipping stations and around the stations.

Immediately after the end of minority rule, the government worked to popularize soil conservation and other environmental activities through awareness workshops for people in areas threatened by land degradation. However, despite significant official support for the awareness workshop program, there appears to have been little adoption of practices discussed at the workshops, except in the area of treeplanting, as described below. This lack of action appears to be a result of the target audience of the workshop program, which tended to include more women than men. Although women in Zimbabwe play a key role in carrying out both farming and environmental activities, in many places decisionmaking power rests with men. Without support for increased decisionmaking or decision-influencing power by rural women, or greater involvement of men in the workshops, environmental education seems to have had little effect.

It is also possible that if the workshops' content had been tied more closely to those aspects of environmental conservation over which women have control, the impact would have been

greater. To broadly generalize, rural women typically locate and collect water and wood for daily household use, and raise animals and maintain gardens to produce food for home consumption. Thus maintaining water, vegetation and soil resources close to the home is important to them. In contrast, men may tend to be more concerned about the quantity of water available in a place to which they can take animals, in commercial uses of trees, and in soil conservation for market agriculture and animal husbandry.

In other development sectors, such as birth control and family planning, the education of women has often been a decisive factor in the adoption of new practices. However, it is possible that these successes are due not only to women obtaining greater awareness of their options, but also to their obtaining information that helps them influence men's decisions.

Thus, although participants in the workshops overwhelmingly viewed the workshops as informative and relevant to the environmental situation of their areas as a whole, the weakness of the program appears to have been mainly in the extent to which participants (mainly rural women) can implement what they learned or impact local decisionmakers (rural men).

It is also noteworthy also that some sources, including a recent study by the Southern Africa Development Coordination Conference, suggest that the root cause of deforestation (and ensuing environmental degradation) in the region is not firewood collection (often by women) but land clearing for agriculture. This is an area where men are usually the main decisionmakers.

As mentioned above, one environmental management activity promoted by the workshops was adopted by a large majority of participants: tree planting. At the same time, it is important to recognize that during the same period, a national campaign to promote tree planting was also underway (reaching all components of society, both female and male), and so the workshops might be viewed as reinforcing that effort.

Today, successful community-based anti-desertification efforts in some of Zimbabwe's poorest areas (Matabeleland and Midlands) have been successful because they have linked these efforts to existing patterns of human settlement, local culture, and efforts to improve the situation and influence of women. These initiatives, led by ORAP, a mass movement of over half a million rural people, have emphasized increasing the number of access points to water for livestock in order to reduce pressure on land in any particular location. ORAP educates its members and other local people on environmental protection, particularly protection of soil and water resources, through culturally appropriate means, such as drama troupes. The traditional concept of *zenzele* (self-reliance) is emphasized in motivating and mobilizing rural people to take charge of their development activities.

In addition, ORAP members have worked to alleviate the affects of drought, which affects southwestern Zimbabwe every three to five years, on average. Through programs designed to ensure a stable water supply (such as through building dams and improving wells and boreholes), to store food following good harvests, to transport food from surplus to deficit areas during hard times, and to develop and popularize the use of drought resistant strains of crops (including indigenous varieties), ORAP prevents large human and animal migration during droughts which can result in additional pressure on the small amounts of land remaining arable during difficult periods. A direct result of less movement of people and animals has been less disruption of the natural environment.

...answers on "why an area has turned to desert" may lie within those grassroots communities. There is also a need to respect a people's ideologies because these explain the world and suggest desirable activities and outcomes. We need not assume what people think.

Norbert Dube, 1993

ORAP emphasizes the role of women as key actors in rural development, and its efforts to support the role of women as decisionmakers have resulted in improved management of natural resources by the portion of society that actually carries out many of these activities -- rural women.

Implications

- A lack of local understanding by the public of the reasons for and goals of externally initiated environmental protection projects can severely undermine local participation in project implementation. In contrast, public education efforts tied to existing local cultural traditions can be particularly effective.
- Improvements in the status of women as decisionmakers and/or in their ability to influence male decisionmaking in rural development can help protect the rural environment because women typically play a central role in management of natural resources, particularly resources close to the home.
- Given the different roles of women and men in rural society, environmental education should often focus on the specific interests and needs of each group.
- Resettlement, migration and concentration of human and animal populations can have adverse effects on fragile natural environments. Ensuring that food and water are available where people live can, beyond minimizing disruption to those people's lives, also combat desertification.
- Given the significance of land clearing for agriculture in causing deforestation and ensuing land degradation, outside intervention in efforts to address local problems should come solely from an environmental perspective, but should also consider other issues, such as rural food production and demographics. This implies a need for greater coordination between agencies (both governmental and non-governmental) involved with rural development.

IV. OVERALL FINDINGS

The four cases described above suggest that participatory approaches to combating desertification can be highly effective. The following findings emerge from these case studies:

Finding 1. *Substantial knowledge exists at the local level.*

In Ghana, local people have developed a substantial body of knowledge about various local ecosystems. In Burkina Faso, local groups have pioneered the use of grass carpets and other innovative technologies to regenerate degraded land. In Kenya, a complex gravity-fed irrigation system has been built that transports water over and around extremely steep gradients. Local knowledge has been and can continue to be a key element in combating desertification.

Finding 2. *Participatory approaches to combating desertification can mobilize significant community resources and produce self-sustaining results.*

In Burkina Faso, it is local farmers who mobilize to carry out environmental protection and regeneration activities through a federation structure that both draws information from and provides information to those farmers. In Kenya, clans mobilize local labor to build and maintain the irrigation system in ways that make effective use of a scarce resource. In Zimbabwe, women in rural areas take the lead in developing and maintaining food reserves to be used in time of drought, as well as introducing drought-resistant strains of crops. This commitment of community resources is often long-lived and large in size. It can be particularly important in initiatives in which ongoing maintenance is required.

Finding 3. *Traditional social, religious and economic institutions often play an important role in protection of the natural environment.*

In Ghana, traditional religious beliefs about the importance of sacred groves of trees have resulted in protection of very fragile local ecosystems such as the Malshegu sacred grove. In Burkina Faso, a traditional form of collective labor has been expanded into a nationwide environment and development movement that mobilizes farmers for self-sustaining environmental protection activities. In Zimbabwe, the traditional philosophy of *zenzele* motivates and mobilizes rural people for large-scale environment and development activities. In Kenya, clans and committees of elders play key roles in coordinating a complex irrigation system. In all these places, traditional agriculture and animal husbandry practices, which emphasize production of a variety of goods with a significant portion for local consumption, have generally been less destructive to the fragile natural environment than production systems emphasizing a narrower range of cash crops.

Finding 4. *Desertification should not be viewed as solely an environmental problem, but rather as both a symptom and cause of broader rural problems.*

In Zimbabwe, desertification is closely tied to pressure on fragile land created by population

pressure and the legacy of colonization. It is best addressed through efforts to support the rural economy as a whole. In Ghana, timber production and other activities designed to support the national economy and generate foreign exchange have contributed to desertification. In many places, inordinate emphasis on a small number of cash crops is often a response to broader poverty problems or an effort to increase export earnings, or both. In many cases, it is environmentally unsustainable and contributes to desertification.

Finding 5. *Local government can be a key official actor in supporting community-based efforts to combat desertification.*

In Ghana, District Assemblies have recently been established as the most local level of government administration. They are well-placed to work with communities and are doing so through Environmental Management Committees.

Finding 5. *Participatory and conventional approaches to combating desertification differ significantly.*

Participatory approaches to combating desertification place people and communities at the center. In Burkina Faso, local farmers make decisions about which of methods will be used in their communities to protect and regenerate the soil. In Ghana, communities are the key actors in many successful forestry activities. In contrast, conventional approaches to combating desertification such as the Hola and Bura projects in Kenya, often emphasize the importance of outside technology and investment. However, outside technology and investment, such as the technical support provided for the Baobeng/Fiema sanctuary, can be beneficial when, as the cases suggest, they can support, rather than to substitute for, community-based efforts. (See chart below.)

Conventional projects are capital and resource-intensive; and regard desertification as a technical problem. Their starting point is that people have no technology...local, participatory, collaborative projects are labour-intensive; they focus on community sensitisation, training and acquisition of skills as a prerequisite for combatting desertification.

Rugumayo

ILLUSTRATIVE DIFFERENCES BETWEEN CONVENTIONAL AND PARTICIPATORY ANTI-DESERTIFICATION PROJECTS

<i>Feature</i>	<i>Emphases of Conventional Projects</i>	<i>Emphases of Participatory Projects</i>
Focus	Scientifically based solutions; transfer of technology; motivation and training	Cultural and practical; community-based solutions; local self-reliance and self-help; potential bridging organizations
Conception, initiation	Government and donor agencies; external implementing agencies; outside consultants	Partnership between government, local NGOs, local community institutions, and donor agencies
Relationship to local culture and economy	Marginal, sometimes conflictive	Well-integrated, supportive
Goals, objectives	Usually set by governments and donors	Arise from communities or from consensus between communities and other parties
Outcomes, end-products	Environmental protection gains	Environmental protection gains plus local empowerment and new collaborative partnership structures
Planning, management and supervision	Government or executing agency	Diverse parties working collaboratively
Sources of technical information	Government experts, contractors and consultants	Communities plus government experts, contractors and consultants
Sources of local cultural and institutional information	Typically not utilized	Local individuals, NGOs and community institutions

V. CONCLUSIONS AND RECOMMENDATIONS FOR FUTURE ACTION

Perhaps the most important conclusion that emerges from these case studies pertains to the source of motivation and initiative for conducting anti-desertification efforts. These cases dramatically demonstrate that local communities harbor the will and commitment to prevent loss of their lands and livelihoods to the progressive effects of desertification.

While not surprising, this fundamental reality sometimes becomes obscured and indeed weakened when outside groups -- government agencies, technical groups and NGOs -- seek to launch program of their own conception and design at the local level. The challenge for outside agencies, including policymakers and donors, is how to identify and join with successful community-based initiatives combating desertification in ways that respect local interests and agendas. An approach in which outside resources support local efforts will ultimately result in strengthened local institutions that can effectively address desertification problems as well as play important roles in other environmental and development activities. External agencies and governments need to build upon local community concerns and actions to prevent degradation of their lands. External resources and actions need to support and enhance local resources and action.

A second fundamental conclusion emerging from these case studies is that rural communities in Africa may be resistant to Western-style modernization, outside technology, market incentives and increased integration with the national global economies unless they are integrated with or reinforce indigenous society and the local economy. Rural communities often perceive that these outside forces and interventions, such as market-driven emphases on cash-crop production for export or incentives for adoption of new environmental technologies, can be destructive to both traditional society and, in the long run, the natural environment as well.

Governments and aid agencies can help initiate anti-desertification projects by utilising existing organisational and leadership structures in local areas, as well as existing anti-desertification activities, however small these may be. In other words, external agencies must participate in locally existing programmes as invited participants, infuse acceptable tools, capital and contribute to capacity and institutional building...

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What many African communities and development organizations are calling for is not increased use of outside incentives and interventions, but strengthening of those aspects of traditional society that have resulted in resilient communities and sustainable practices in a time of shrinking external resources and assistance. A recent paper related to case studies of large scale development partnerships in African countries states "in the face of crumbling 'modern' values and morals, institutions and social service delivery systems and facilities, the African peoples have had to resort to their ancient value systems, institutions, science and technology to preserve themselves and to survive a rogue world order."

Outside agencies must avoid falling into the trap of traditional approaches to development, wherein assumptions are made about the value of modernization and technology, and the

social aspects of development are addressed only in efforts to motivate (through economic incentives and other means) local populations. These assumptions can no longer be taken for granted, particularly in addressing as complex a problem as desertification.

A third fundamental conclusion is that environmental protection goals can be successfully achieved when external agencies and governments integrate their anti-desertification efforts into existing cultural systems, economic systems, and local organizational structures. External resources and technologies and local community action need not be incompatible, but instead can reinforce each other.

However, because they often entail very different cultures, in practice they too often work at cross purposes, undermining the effectiveness of both. These cases reveal the rich complexity, diversity and holistic quality of community systems of organization related to anti-desertification activities. Technology in the form of training, equipment, work plans, and regimes of work are often not easily introduced into and successfully integrated with the local cultural systems. Technical experts and advisors generally are not well-trained for or suited to assessing and understanding these cultural systems or to designing approaches that could integrate them with externally introduced technology.

From the findings and conclusions presented above, a number of concrete recommendations emerge for policymaking and donor organizations interested in combating desertification:

- Replace strategies and approaches that seek to "motivate", "persuade" or "provide incentives" to local communities in order to obtain their "cooperation" with strategies that fully acknowledge and respect local culture and perspectives and that build action upon partnership anchored in local and community self-determination. See *Building Development Projects in Partnership with Communities and NGOs: An Action Agenda for Policymakers*, *Holding Together: Collaborations and Partnerships in the Real World*, and *Multiparty Cooperation for Development in Asia* for further discussion and illustrations of partnership approaches.
- Provide assistance for anti-desertification and development projects in ways which support, rather than disrupt, the existing local economy, social systems and patterns of human settlement.
- Strengthen existing and emerging local social and economic institutions that protect and maintain the local environment while also addressing other development needs. This might include traditional institutions such as clans in Elgeyo Marakwet and newer institutions built upon traditional structures such as the Naam in Burkina Faso and ORAP in Zimbabwe. In some cases, local governments can provide an institutional structure for environmental management activities. Support for national level action to support local government, and to sometimes devolve more decisionmaking authority to the local level, can have important positive effects.
- Consult with local groups on the effects of other development activities on land use and the local environment.
- View desertification as one aspect of weakened rural society and economy, and address it ways that are integrated with other development activities. Often this will require greater coordination of activities between outside parties.

- Support development activities that benefit broad sectors of the local population as opposed to activities -- such as production of cash crops -- that favor narrower components of society. Examples include social forestry and water use activities that serve household, agricultural and other needs.
- Support development activities that benefit multiple families and ethnic groups and that support women as well as men. The role of women is particularly important in that women are often most directly affected by certain consequences of desertification -- such as declining water tables necessitating significant time be spent each day travelling to collect water -- and are also often most involved in the collection of firewood. In addition, in many places women tend to be less involved in the production of cash crops than men and more involved in the growing of a range of foodcrops (often indigenous varieties) with less adverse impact on the natural environment. Working with local women's groups in their efforts to secure rights to land tenure, to play a larger economic role in agricultural activities, and to influence male decisionmaking can be important ways for governments and outside agencies to promote environmentally sustainable agriculture.
- Provide local groups with support to strengthen their existing environmental management efforts. This support can take many forms and is best used in response to expressed local needs. In some cases support might be material -- for example locally constructed water management projects such as the one in Elgeyo Marakwet could be more effective with additional construction materials. In others it might be technical, such as the support for the effort to establish Ghana's Baobeng/Fiema sanctuary.
- Build on traditional attitudes toward the natural environment, such as beliefs in the importance of trees, with additional knowledge and information about environmental protection. Respect, support, and use locally developed technical expertise and integrating the provision of new technology and skills with the local expertise. Outside knowledge should be used as complement for existing knowledge.

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