

Closing the gap: bringing communal farmers and service institutions together for livestock and rangeland development

T. Kroll* & A. S. Kruger†

*German Technical Co-operation (GTZ) GmbH, P.O. Box 80426 (Olympia), Windhoek, Republic of Namibia †Sustainable Animal and Range Development Programme (SARDEP), Namibia Private Bag 13184, Windhoek, Republic of Namibia

(Received 16 June 1997, accepted 12 December 1997)

Namibia is an extremely arid country with very low and erratic rainfall. It has a population of 1.7 million people; most Namibians are subsistence farmers living in communal areas that are underdeveloped and poorly managed. Most farmers raise livestock under harsh climatic conditions. The Sustainable Animal and Range Development Programme (SARDEP) helps communal subsistence farmers improve livestock production and range management. Work done by SARDEP concluded that communal farmers are poorly organized, unaware of participatory development and unfamiliar with the concept of self-help. SARDEP also suggests that sustainable livestock and range development in communal areas cannot be based on the conventional development approach. This top-down and input-oriented approach rarely meets farmer needs. In fact, the non-involvement of farmers in the development process leaves a wide gap of untouched development opportunities. To achieve sustainable development SARDEP decided to support a process that closes this gap between farmers and service institutions. SARDEP developed the 'negotiation approach,' which supports the empowerment of grassroots-level organisations, considered the prime movers for development. At the same time SARDEP helps service institutions interact closely with target groups and reorient their services toward well-formulated farmer needs and demands. To allow such development to grow, SARDEP also contributes at the national level toward formulating a conductive policy framework for sustainable natural resource management.

©1998 Academic Press Limited

Keywords: communal farmers; Namibia; SARDEP; community-based organizations

Introduction

Located at the south-west tip of the African continent, Namibia was the last African colony to become independent. This vast country (about 1 million km²) with only 1·7 million people became independent in April 1990. The new government embarked on

a path of reconciliation and affirmative action, with development efforts now focusing

on the previously underprivileged people, particularly in communal areas.

Namibia is called 'the land with the wide open spaces.' Its extensive savannas and grasslands are used by cattle, small stock and wildlife. Namibia is one of the most arid countries in the world. Annual precipitation is low and erratic, ranging from 20 mm in the south to 600 mm in the far north-east. The high variability of rainfall (coefficient of variation close to 40% for Windhoek) significantly reduces the meaningfulness of average rainfall data for the country (Kruger & Woehl, 1996). Water remains the most critical and limited resource. Namibia has not a single perennial river or stream except those shared with its northern and southern neighbours. Climatic conditions are extremely harsh and hostile. Summer temperatures can exceed 40°C, and the dry season can last up to 8 months. Namibia can be classified as arid to semi-arid with about 8% of the land area being considered dry sub-humid.

The agricultural sector in Namibia

The agriculture sector contributes about 10% to Namibia's gross domestic product, and about 70% of the population is involved in agricultural production. However, low and erratic precipitation greatly limits the choice of agricultural production. In response to the harsh climate, agriculture consists mainly of extensive livestock

production with limited potential for crops.

The agriculture sector consists of two farming sectors. One is a small but economically strong and well-developed commercial sector. The commercial sector involves about 6300 freehold title deed farms occupying about 52% of the agricultural land. The main production objective is to supply red meat for internal and export markets. About 90% of the production is for export to South Africa and Europe. Commercial farmers are well organized and represented by the Namibia Agricultural Union.

The second sector consists of about 140,000 subsistence farming households living in communal areas. These households represent 90% of Namibia's farming community. Most communal farming households are headed by women, vulnerable with low reserves, poorly organized and largely impoverished in the semi-arid southern

and western communal areas. The illiteracy rate is high.

In precolonial times land in Namibia was considered the territory of ethnic groups and was communally owned. By controlling a few water points and other strategic places, tribes controlled and used large areas of rangeland. The north had sufficient land for drought-tolerant millet crops to be produced on suitable soils under slash and burn practices. The nomadic movement (transhumance) of animals tracking rainfall and better fodder allowed farmers to keep large herds. Farmers were traditionally well organized and traditional leaders controlled the resources and their use (Kruger & Woehl, 1996).

Today those tribes farm under different situations, largely as a result of 100 years of colonialism. Tribes engage in subsistence farming in communal areas, which under the previous political system were referred to as homelands. These homelands, established by the colonial powers along ethnic and tribal differences, are the home and food

basket of 70% of Namibia's population.

Clearly defined and demarcated, these areas show signs of neglect caused by decades of isolation. The infrastructure is poorly developed. Only a few small towns exist. Services are inadequate. Roads are bad. Telecommunication hardly exists. There are too few hospitals, clinics and schools. Better educated people have moved away. Most remaining people farm open land areas as they were traditionally farmed. Although some areas are fenced and even may have camps, these areas still fall under communal land without freehold title deed.

Commit production to product These farm to minimi loss during grazing zo obligations communal more often

Farmers adapted to drought. C input, low to the com not individ

Unlike of the colonia modern or subsistence

Unforture realities, pavailability 30–50 year dealt with eroded serilocated in resource panagement.

Meanwh control of subsistence

Despite and its situation are and natural solve land u of farming a economical

Resp

In view of resources, s institutions. Namibian s significant management fear openly realize that

ts now focusing

ve savannas and of the most arid from 20 mm in a fall (coefficient eaningfulness of emains the most or stream except conditions are C, and the dry semi-arid with

mestic product, 1. However, low production. In ensive livestock

is a small but nmercial sector the agricultural mal and export a and Europe. bia Agricultural

ouseholds living nibia's farming nen, vulnerable ni-arid southern

of ethnic groups other strategic in had sufficient under slash and racking rainfall aditionally well use (Kruger &

of 100 years of which under the ads, established nome and food

ised by decades all towns exist. kists. There are yed away. Most med. Although ider communal Communal farmers produce under a different land use situation and have different production objectives than their commercial counterparts. Their farming objective is to produce food mainly for the household while some surplus may enter the market. These farmers have the goal of producing high stock numbers to gain social status and to minimize production risk. The high animal numbers help reduce the risk of total loss during drought. The family bred herd may be divided and spread over different grazing zones to avoid total loss. Subsistence farmers keep their few animals for social obligations (marriage, funerals, fines) and can hardly afford to sell them. Better off communal farmers, however, consider livestock as economic assets and market them more often.

Farmers own mainly indigenous small-framed breeds (Sang/Nguni), which are well adapted to the harsh climate and environment and cope well with disease, heat and drought. Compared to their commercial counterparts, communal farmers apply a low-input, low-intensity and risk-minimizing farming strategy. This strategy is well suited to the communal system, where land and its natural resources (grass, forests, etc.) are not individual property but are jointly owned and used.

Unlike commercial farmers, communal farmers received little or no support from the colonial governments. They were given no subsidies and had no exposure to modern or other forms of agriculture. Even now after 7 years of independence most subsistence farmers survive only on the traditional knowledge of farming.

Unfortunately, many such traditional farming practices are not adapted to new realities, particularly in respect to high population growth and reduced land availability, natural resource degradation and inadequate land administration. Only 30–50 years ago traditional authorities still guided the use of natural resources and dealt with trespassers of local rules, norms and values. Since then this system has eroded seriously. But new western lifestyles, with their operational base and authority located in urban centres, have initiated a whole range of negative social and natural resource processes which could not replace the inexpensive and decentralized management and control mechanisms of traditional authorities.

Meanwhile large tracks of traditional communal grazing areas are mostly under the control of wealthy local businessmen who do not recognize the needs of most subsistence farmers.

Despite strong efforts by the government, urban-based authorities remain indifferent and ineffective in exercising control over natural resources and dealing with the land and its people in a fair and sustainable manner. The government recognizes this situation and envisions setting up regional land boards to confront the present land and natural resource use dilemma. While such land boards may give guidance and help solve land use disputes, in the end the resource users themselves must find new forms of farming and land use practices that are socially acceptable and environmentally and economically sound.

Response of communal farmers to the conventional input-driven development approach

In view of the aggravating circumstances of land availability and overuse of natural resources, subsistence farmers have begun to respond. Alone or with the help of service institutions, they have started forming community-based organizations (CBOs). Namibian subsistence farmers have come to realize that their own CBOs can play a significant role in development. But CBOs are still weak, lacking know-how and management capacity, leadership quality and authority. Grassroots based, CBOs still fear openly challenging urban and traditional authorities. But they have begun to realize that they can overcome their weaknesses. They have experienced a certain

degree of acceptability among local authorities despite their lack of legal recognition or

strong national representation.

Namibian subsistence farmers are also beginning to work together with governmental and non-governmental service institutions. But subsistence farmers know little about the approach of service institutions to support the development process. They do not realize that much of the forthcoming help will be top-down and input-oriented. Service institutions are mainly 'shopping' for farmers and offering them free infrastructure and other items to show their commitment. Farmers, on the other hand, appreciate gifts, but rarely would know whether service institutions will contribute sustainably to solving their problems. Farmers also have problems realizing the implication of some gifts, which may cost too much in maintenance.

Unfortunately, gifts largely benefit the provider and not the user. The provider gains in status and credibility. Donations do not raise questions or ask for accountability but are perceived as coming from a source of plenty. In most cases handouts help providers stay firmly in control of the development process, with no need to understand and respond to the complexity and needs of communal farmers. The input approach, in fact, allows service institutions to avoid dealing with the time consuming and difficult task of investing in the capacity building of the user group so that self-initiative, planning and implementing of development are controlled by the affected people

Largely engineered and controlled from urban centres, the common response to poverty alleviation in communal areas has remained input-oriented. But an alternative approach has begun to emerge. This approach places the affected people in the centre of the development process and may be more suitable for finding more sustainable solutions to the problems of communal farmers.

SARDEP

Soon after independence in 1991, the Namibian Ministry of Agriculture, Water and Rural Development initiated the Sustainable Animal and Range Development Programme (SARDEP). SARDEP has been receiving support from the Federal Republic of Germany through the Deutsche Gesellschaft fuer Technische Zusammenarbeit (GTZ) for the period 1991-1999. The Namibian financial contribution has steadily increased over the past 5 years and is now well over 30% of the overall budget. SARDEP consists of a national co-ordinator and an administrative secretary at headquarters, four regional co-ordinators based at major regional agriculture extension centres and 12 local facilitators who are grassroots-based and stay in defined communal pilot areas. SARDEP is assisted by one Namibian and two German advisors.

SARDEP was created to help communal farmers under their difficult socio-cultural and economic situations to design for sustainable rangeland use and improved livestock production. SARDEP's overall goal is to contribute toward reducing land degradation caused by human interference in the communal grazing areas of Namibia. SARDEP is being implemented in phases.

The orientation phase

SARDEP started in 1991, with a 4-year orientation phase. This period was required for the following purposes: to establish an adequate implementation structure; to analyse and document the resources, production systems, conditions and constraints for rangeland use; to find possible solutions for range management and livestock production based on community needs and demands; to help local communities test some of th for possibl and impro

During the define their sustaining subsistence describe th

- (i) The o produ poore more range insuff
- (ii) The e currei respon The p the cu farme tions) educa
- (iii) Despi funds' input inputs food r
- The i adequ self-he manag rotatio structi effecti sustair CDC,

Possible

Communal a decline in population, eight strate co-ordinate sustainable: egal recognition or

ther with governarmers know little ent process. They ad input-oriented. fering them free on the other hand, as will contribute ems realizing the e.

The provider gains accountability but uts help providers understand and iput approach, in ming and difficult hat self-initiative, affected people

mon response to But an alternative ople in the centre more sustainable

lture, Water and ge Development om the Federal ische Zusammecontribution has the overall budget, tive secretary at culture extension stay in defined and two German

alt socio-cultural and improved d reducing land reas of Namibia. some of the solutions to identified problems; to monitor and assess the tested solutions for possible replication; and to devise a strategy for sustainable rangeland management and improved livestock production.

The present situation as perceived by communal farmers

During the orientation phase SARDEP helped farmers analyse their situation and define their roles. Local households defined their current roles and objectives for sustaining a decent living for a growing population in the communal areas and ensuing subsistence for their households. Using this role and objective, farmers were invited to describe their current situation as follows.

- (i) The **outputs required** to achieve these objectives are not adequate. Livestock production is not qualitatively or quantitatively performing well enough. The poorer segment of the population is increasingly impoverished and is depending more and more on off-farm income sources and migration. The overuse of the rangeland reduces its production potential, resulting in degradation, soil loss, insufficient forage and low tolerance of forage to drought.
- (ii) The **environment** in which the task should be fulfiled is also not conducive. The current land tenure system is uncertain and does not encourage initiative and responsibility for sustainable land use (e.g. fodder subsidies during drought). The population growth rate is very high and exceeds 3% in communal areas. At the current rate Namibia's population will double every 25 years. Communal farmers also have poor access to proper basic infrastructure (roads, communications) and services (extension, research, marketing, credit, veterinary, health, education).
- Despite **limited internal resources** within communities (e.g. manpower, funds), internal resources are not always adequately supported by **external inputs** from both governmental and non-governmental sources. Not all the inputs from outside are relevant to the needs of self-sustainability. For example, food relief to sustain people is increasing.
- (iv) The internal structure and organization of local communities are far from adequate. Because the management capacity for new collective tasks is low, the self-help capacity is low, and dependency on outside support is high. High management capabilities in traditional systems to cope with transhumance, rotational grazing, etc. are disrupted by outside interference. Existing formal structures for resource management and collective decision-making are not effective. Because of land degradation, an increasing part of the poor cannot be sustained by livestock production and has no alternatives for income (KEK/CDC, 1994).

Possible solutions for achieving the future vision of communal farmers

Communal farmers concluded that to achieve the objective of sustainable land use and a decline in human-induced land degradation and to improve the welfare of the rural population, the whole system of communal land use needs to change. Farmers listed eight **strategy components** that need to be addressed by the relevant actors in a well co-ordinated manner to achieve the desired results. Quite correctly they suggest that sustainable resource use in communal areas requires addressing issues that at first sight

od was required on structure; to and constraints it and livestock ommunities test may seem to have little relevance to solution of the problem related to livestock and range management improvement. These components are as follows.

(i) Resettlement of large communal farmers to title deed areas. The population in communal areas will double within the next 25 years from the current 1 million people (70% of the population) to about 2 million people (still 70% of the population). This growth will inflict tremendous pressure on already limited resources (land, grazing, water). Government will therefore have to promote the resettlement of large communal farmers to title deed areas in a way so as to relieve pressure on communal lands.

(ii) Improved marketing. In a variable environment where animal numbers have to be adjusted to the variable fodder base, an efficient marketing system needs to be in place. Apart from the need for adequate marketing infrastructure (e.g. auction pens), enough buyers should attend auctions to encourage competition for better prices. Farmers also need timely and regular information on market prices for

different classes and types of livestock.

(iii) Alternative income-generating activities. The objective of this component is to reduce dependency on livestock production. Where income generation cannot be diversified because of a lack of natural resources, alternatives such as shifting from raw material production (live animals) to processing raw products (slaughtering, meat, leather, shoes) is essential. Thus a part of livestock processing can be kept in the area, and direct involvement with livestock production can be reduced.

(iv) Land tenure system. The objective of this component is to promote the improvement of the frame conditions needed for sustainable rangeland management and improved livestock production. Land in the communal areas is state owned, and no title deeds are allowed. This land tenure systems creates the problem of open and uncontrolled access to the rangeland resources by anybody. The uncertainty of control over and access to land and the management of the rangeland, as well as the urgently awaited Communal Land Bill, offers few incentives for local communities to implement sustainable rangeland management practices.

(v) Alternatives for capital accumulation. In line with the true tradition of the African pastoralist, livestock (mainly cattle) are still considered the major source of security and wealth. If no acceptable alternatives for capital accumulation can be found to offer possibility for security and wealth, farmers will always try to reinvest money into cattle and keep them on the already degraded rangelands.

- (vi) Local investment packages. The objective of this component is to develop, test and implement packages such as saving schemes to promote local funds and strategies that will generate money from outside the community for investment in rural areas.
- (vii) Institution building on communal land. An obvious gap separates the traditional authorities on communal land and the newly created administrative bodies. Traditional authorities can no longer assume full management responsibility, and the new administrative bodies cannot yet take over. Empowerment of community-based organizations should be emphasized so that development can be steered in rural areas.
- (viii) Sustainable improvement of livestock production. This is a clearly defined agricultural component. Farmers have to be supported in recognizing, testing and implementing sustainable rangeland use and improved livestock production practices under specific situations. In the very area where they live farmers need support for extension, research, veterinary services, marketing and credit. Emphasis should also be placed on enhancing the ability of farmers to track better fodder in times of fodder scarcity (KEK/CDC, 1994).

At the enc brought to institutions sector. Far list their co outside to services the workshop t about their support to government of communic conducive practices.

These fir. three areas organization and formula support inst their service capacity of ment work the creation management

To impleme information and range m to be accept developmen implemental coaching ar appraisal, ad and exposur

Field staf workplans. A ensure that a all SARDEF regular mee replanning.

The appr textbooks. In at building t and become development present their development

Meanwhile of their own

I to livestock and

The population in current 1 million (still 70% of the 1 already limited 7e to promote the 1 a way so as to

numbers have to ystem needs to be ture (e.g. auction petition for better market prices for

component is to eration cannot be such as shifting g raw products part of livestock it with livestock

to promote the ngeland managenal areas is state tems creates the rces by anybody. nagement of the Bill, offers few ngeland manage-

tradition of the the major source ccumulation can will always try to ded rangelands. to develop, test local funds and for investment in

es the traditional nistrative bodies. esponsibility, and nent of commulopment can be

clearly defined ognizing, testing stock production ive farmers need ing and credit. farmers to track

The SARDEP strategy

At the end of the orientation phase SARDEP organized a strategy workshop that brought together farmer representatives from the communal areas and about 35 institutions representing government, non-governmental organizations and the private sector. Farmers were given the opportunity to elaborate a joint vision for the future, to list their constraints and to determine self-help solutions and support needed from outside to achieve the vision. Service institutions were also invited to state what services they are providing or plan to provide for communal farmers. From this workshop the following conclusions were drawn: communal farmers have a good idea about their vision for the future, but they lack the ability to voice their demand for support to implement their solutions; support organizations (governmental, non-governmental and private) are not providing services matching the needs and demands of communal livestock farmers; and frame conditions (e.g. land tenure) are not conducive to sustainable rangeland use and improved livestock production practices.

These findings led to the elaboration of the SARDEP strategy with emphasis on three areas of involvement: to establish and build the capability of community-based organizations to enable them to identify and prioritize their problems, seek solutions and formulate their demands so that they can successfully negotiate with any possible support institution to implement solutions; to help support institutions reorientate their services to match the needs of communal farmers, and also to strengthen the capacity of the Ministry of Agriculture, Water and Rural Development for development work in communal areas; and to contribute to policy formulation and promote the creation of a policy framework conducive to sustainable natural resource management.

Closing the gap

To implement its strategy SARDEP needed to qualify its staff to act as facilitators, information brokers, negotiators and mediators. Technical know-how about livestock and range management was considered less important in selecting staff than the ability to be accepted and to work with people. The investment in human resource development has had a tremendous effect on the performance of the SARDEP implementation team. To qualify staff for assuming those functions, much training, coaching and guidance have been given. Training included participatory rural appraisal, advanced training for workshop moderation, goal-oriented project planning and exposure to similar or related programmes and projects.

Field staff are highly motivated. They elaborate and implement their own workplans. Annual workplans, which are elaborated jointly, give overall guidance and ensure that all work is orientated toward objectives. Quarter meetings are organized for all SARDEP staff to evaluate progress made and to agree on how to proceed. These regular meetings provide opportunities for participatory reporting, reviewing and replanning.

The approach developed by SARDEP is not the blueprint strategy found in textbooks. In principle it is an approach that facilitates and supports a process aimed at building the capacity of community-based organizations (CBOs) to be recognized and become involved as strong partners in the development process. Since development also involves service delivery institutions, CBOs need to be able to present their cases and to negotiate for support so that they can maintain control of developmental actions.

Meanwhile, CBOs have implemented, with support of service institutions, a number of their own projects, such as building and rehabilitating small earth dams, growing

managemen

communitie

RI

supplementary animal feed, supplying veterinary drugs, purchasing breeding animals and erecting small cool rooms for vaccines. Projects that have been planned by target group CBOs are in line with the community's locally available financial resources and fit the local managerial capabilities. In this way farmers are indeed in command and control of development actions (Fitter, 1997).

For CBOs to take charge of development, they need a conducive environment. Such an environment particularly requires a reorientation of service institutions that normally perceive themselves as the motor of development. SARDEP's approach involves service institutions in rethinking their roles and functions and eventually redesigning their services to match the CBO's demands. Service institutions are helped to understand and accept the partner role of CBOs. They are encouraged and supported to enter into a negotiation process that clearly finds the agreement of all stakeholders in what to do and how to go about doing it. Because it is a more temporary programme within the Ministry of Agriculture, SARDEP decided to act as a facilitator in promoting a change process and an adaptive management style, based on principles such as interactive participation, target group focus and orientation, promotion of self-help, co-operation, transparency and accountability. Most implementation tasks are not being carried out by SARDEP but by communal farmers who are assisted by governmental and private institutions. Over a period of 2 years SARDEP was instrumental in supporting the Directorate of Research and Training to reorientate research from commercial to communal needs, 'on-station' to community based 'on-farm' and from basic to more adaptive and participatory research.

Several on-farm projects have been implemented. These projects involve farmers in the research work supported by the Directorate. Communal farmers have very limited access to veterinary services. SARDEP managed to facilitate a process where communities erected basic coolers and basic handling facilities. SARDEP also selected community members for basic animal health care training. The Directorate of Veterinary Services will then provide training, drugs and vaccines as well as professional backstopping to these people. In doing so, the access of farmers to veterinary services will be tremendously improved. Implementing this project required a negotiation period of more than 12 months.

SARDEP promotes an evolutionary process of communal empowerment and the mobilization of self-initiative and self-help. At the national level it concentrates its limited resources on policy reform and institutional change. At the local level it focuses on strengthening rural CBOs, considered the prime mover for development. SARDEP realizes that livestock and particularly range management improvement are not possible within the next 3 to 5 years.

Since there is no quick technical solution for sustainable natural resource management, SARDEP aims at long-term returns from inputs to human capacity building. SARDEP encouraged participating communities to organize themselves. It then provided training on problem identification and project formulation and developed the capacity to enable farmers to implement and manage their projects. Farmer project proposals are complemented by financial support from SARDEP but require at least a third of the investment in farmer contributions in cash and the completion of a financial management training course to ensure a high degree of ownership, acceptability and sustainability.

Conclusions

The SARDEP approach is still new, but close monitoring and frequent evaluations until 1999 will provide enough evidence about successes and failures of this approach. The development of technical solutions alone is not enough to support local farmers in solving their problems related to livestock production and improvement of range

Community achieve the SARDEP and develor approach). I enables subs own solution relevant serv or failure of institutions a

together, and

way without

Fitter, J. (199
Namibia: M
KEK/CDC. (
Mission Re
Programme,
Kruger, A.S. &
arid and se
Developmen
GMbH, Esc

reeding animals lanned by target al resources and a command and

vironment. Such nstitutions that DEP's approach and eventually itions are helped encouraged and agreement of all se it is a more lecided to act as ient style, based and orientation, ty. Most implenal farmers who riod of 2 years and Training to 1' to community esearch.

volve farmers in ave very limited process where EP also selected Directorate of nes as well as s of farmers to project required

erment and the concentrates its il level it focuses ment. SARDEP rement are not

atural resource numan capacity e themselves. It ormulation and their projects. n SARDEP but n cash and the high degree of management practices. A prerequisite for success is the empowerment of the local communities to assume or resume responsibility for managing their own resources. Community involvement in the development process must be given highest priority to achieve the desired level of success.

SARDEP moved away from the practice of controlling the development approach and developing technical packages and offering them to the communities (input approach). Rather, SARDEP developed the negotiation approach, a process that enables subsistence farmers and their community-based organizations to devise their own solutions to their problems and, where necessary, to negotiate more support from relevant service institutions on issues which are outside farmer capacities. The success or failure of SARDEP will at the end be measured in how far farmers and service institutions are able to 'close the gap' between themselves and working in partnership together, and the extent to which farmers can solve their own problems in a sustainable way without SARDEP's involvement.

References

Fitter, J. (1997). Explanations to the SARDEP approach (GTZ internal document). Windhoek, Namibia: Ministry of Agriculture, Water and Rural Development.

KEK/CDC. (1994). Support for the Organisational Development Process of SARDEP. Main Mission Report. Windhoek, Namibia: Sustainable Animal and Range Development Programme, Ministry of Agriculture, Water and Rural Development.

Kruger, A.S. & Woehl, H. (1996). The Challenge of Namibia's Future: sustainable land-use under arid and semi-arid conditions. Frankfurt am Main, Germany: Agriculture and Rural Development, Technical Centre for Agriculture and Rural Co-operation, DLG-Verlags-GMbH, Eschborner Landstrasse 122, 60489.

ent evaluations f this approach. rt local farmers ement of range