Community Based Natural Resource Management

SESSION CHAIR: HOWARD H HENDRICKS

Tuesday 20 July 2010, 11:00-12:30

Platform & Poster Presentations

PLATFORM PRESENTATION: A COMPARISON OF INDIGENOUS KNOWLEDGE (IK) AND MODERN SCIENTIFIC KNOWLEDGE (MSK) METHODS FOR DETERMINING THE SUITABILITY OF RANGELANDS FOR PASTORAL FARMING: THE CASE OF LOKGWABE GRAZING AREAS (KGALAGADI NORTH, BOTSWANA)

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Unreliable rainfall and dystrophic soils of semi-arid areas like Botswana are unsuitable for arable farming. This has led to a focus on livestock rearing for sustenance and commercial use gains in semi-arid regions.

The Botswanan government policies, such as the Tribal Grazing Land Policy (TGLP), aimed at developing pastoral farming have failed, possibly because they do not incorporate the physical and socio-cultural environment in which they operated. Also, they excluded the indigenous knowledge (IK) systems. Indigenous people have long associations with and a deep understanding of nature. Their traditional resource use practices and culture-based respect for nature have contributed significantly to the maintenance of most ecosystems and need to be part of policy development.

This study combined both the indigenous and modern scientific knowledge (MSK) systems to ascertain the suitability of Lokgwabe grazing areas for pastoral farming. A number of farmers actively involved in pastoral farming were interviewed to determine the areas they commonly use for grazing. Certain range grass species were sampled from these areas during the wet season and analyzed for nutritional content. Soil samples collected from grazing sites were analyzed in the laboratory for pH, cation exchange capacity (CEC), organic carbon (OC), phosphorus (P), sodium (Na), magnesium (Mg), calcium (Ca) and potassium (K).

Using IK, farmers identified eight potential grazing areas. Mean soil pH of these sites ranged from 4.4 to 7.7 while their CEC was generally low with values between 0.88 and 2.72 meq.100g^{-1}. Organic carbon and phosphorus, required by plants in high amounts, were also generally very low. The highest Na concentration was 0.07 meq.100g^{-1} and lowest 0.01 meq.100g^{-1}. Magnesium concentrations in the soil were all below meq.100g^{-1}. The lowest K was meq.100g^{-1} and highest 0.4 meq.100g^{-1}. Calcium concentration was generally higher compared to the other three exchangeable bases (K, Mg and Na) investigated.

All grasses showed a very high dry matter content. *Eragrostis lehmanniana* had the highest dry matter content with 93.3%. Magnesium in all the grass species was below 0.25%, while Ca was below 0.5%. The crude fibre range for the species was between 48.57% for *Aristida congesta* and 38.73% for *Urochloa trichopus*. *Digitaria eriantha* and *Schmidtia pappophoroides* had relatively higher K content (2.36 and 2.28% respectively) than all the other grass species, which all had a K content less than 0.85%.

Grass and soil analysis results were interpreted on a comparative basis to assess whether there is a relationship between MSK and IK systems. In conclusion, MSK reveals poor nutritional status of soils, which results in poor nutritional value in grasses eaten by livestock in the study area. Despite this, farmers still preferred these areas for grazing their livestock. Social considerations and the unavailability of other areas for grazing purposes due to other land uses were also observed to be the reasons for the choice of particular grazing areas.

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PLATFORM PRESENTATION: THE EMERGING COMMERCIAL FARMERS' SUPPORT PROGRAMME: BEST PRACTICES AND LESSONS LEARNT FROM MENTORING IN NAMIBIA

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Land reform in Namibia is not only about redistribution of land, but also includes the provision of effective post-settlement support services to improve and maintain farm productivity. Currently about 6 million hectares of white-own commercial farmland has been redistributed to previously disadvantaged Namibians, and government aims to increase this to at least 15 million hectares by 2020. This will subsequently increase the demand for effective post-settlement services by nearly 300%.

Making the transition from communal-tenure areas to managing land in the freehold tenure areas involves an abrupt change in terms of the farm business environment and farm management practices. New emerging farmers are expected to operate their farms as profitable businesses. This means optimizing outputs and maximizing incomes in a sustainable manner. These farmers have to achieve this in a market environment in which profit margins are tight at the best of times. Considering other constraints such as insufficient start-up capital and breeding stock, inadequate access to operating credit, not enough farm equipment, poorly maintained farm infrastructure, and insufficient access to information and knowledge, as well as natural risks such as drought and disease, the challenge is indeed big.

It was against this background that the two agricultural Unions in Namibia, the Namibia National Farmers' Union (NNFU) and the Namibia Agricultural Union (NAU) initiated the Emerging Commercial Farmers Support Programme (ECFSP) and solicited financial assistance from the European Commission through the ninth European Development Fund (EDF 9). The EU support came to an end in August 2009 and since then the Government of the Federal Republic of Germany, through their Agency for Technical Cooperation (GTZ) made a commitment to continue supporting this initiative for another three years until 2013.

This paper will discuss the different components of the project, with special emphasis on the use of experienced mentors from the private sector to assist government extension services in servicing emerging farmers to become fully-fledged commercial farmers. The paper will further discuss best practices and lessons learnt from this mentoring programme over the last two and a half years.

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PLATFORM PRESENTATION: MANAGEMENT OF COMMUNAL RANGELANDS - THE DIALOGUE BETWEEN SCIENCE AND INDIGENOUS KNOWLEDGE: THE CASE OF THE EASTERN CAPE

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Communal area rangeland resource users are an important part of the rangeland ecosystem; rangeland management policies and practice should, therefore, accommodate their socio-cultural practices and knowledge. Indigenous knowledge (IK) is often overlooked in range management research and policy. IK is linked with the livelihoods, always produced in dynamic interactions among humans and nature. Current rangeland management systems are products of scientific research with minimal IK input. Scientific findings are important in informing policy but implementation of such findings can be hampered by the cultural and political frames around them. These frames include perceptions, which form the appropriate context in which to analyse people's actions and decision-making. Incorporating resource users in research and formulation of policies will provide opportunities to capture their perceptions and aspirations, and thus to develop shared policies, improving implementation. The communal areas of South Africa have been governed by numerous pieces of legislation namely, Native Land Act No. 27 (1913), Native Trust and Land Act 18 (1936), Bantu Authorities Act (1951) and the more recent Communal Land Rights Act 11 (2004).

A communal range management project was started in 2006 to examine the role of different stakeholders in the development of strategies for the management of rangelands in the communal areas of the Eastern Cape. This case study identifies the different ways in which scientists and resource users perceive communal rangelands with the view of developing guidelines for the management of grazing areas in the Eastern Cape Province and to inform the process of national policy refinement. The research question was how much interaction exists between the perceptions of resource users and scientists. The underlying assumption is that the success of any intervention lies in the harmonisation of these perceptions.

Socio-economic data were collected using participatory rural appraisals and questionnaire-based surveys in 553 households and 33 focus groups in 11 villages of Amatole, Chris Hani and Ukhahlamba districts of the Eastern Cape Province of South Africa. Scientific methods such as the step-point method were used to gather data on rangeland condition.

Most of the respondents were females, while males headed most of the households. The average age of respondents was 53 years and average household size was seven. Social grants provide a stable source of income compared to natural resources. This has implications for the management of resources: for most of the grantees there are limited incentives to manage the resources. The limited education of the resource users affects their analysis of the complex interactions in the ecosystem, as well as their comprehension of the plethora of regulations governing natural resource use.

Institutions controlling access to rangelands varied from village to village. Generally a high percentage of respondents were not aware of institutions in their villages. Most of the resource users were not aware of the national policies on rangeland management, particularly the Conservation of Agricultural Resources Act 43 of 1983. Generally, there were rules in areas governed by traditional authorities but none in areas governed by political institutions.

Perceptions of resource users and scientific investigation of rangeland condition through basal cover were compared. In all the communities, respondents considered their rangelands to be in good condition (49%) and large enough to support livestock. The level of soil erosion was perceived to be high (51%) by most respondents. The perceptions agree with scientific basal cover estimates, suggesting that respondents use the evidence of bare ground and erosion to assess range condition. Scientific indicators of range condition, basal cover and soil erosion revealed that cover was significantly lower in sweetveld areas than in sourveld areas. The high rainfall in the sourveld favours vegetation growth, thus explaining higher basal cover. Scientific evidence and resource users agree that the rangelands are generally in fair to good condition.

It is clear from the findings of the study that perceptions of grazing rules and of the condition of grazing areas differ among stakeholders; this was the source of initial differences in the perceived condition of rangelands. Policies should incorporate resource users' knowledge and

scientific findings and promote community participation in rangeland management and monitoring. Indigenous knowledge related to the rules on the access and use of rangelands need to be considered during policy formulation for easy uptake of such policies. It is important for government to recognise the local institutions in communities, and work on strengthening them to improve management of communal rangelands. Farmers' associations are better equipped to guide rangeland resource users to understand and apply the policies and techniques designed by policymakers, since they were found to be the most organised civic institution in most villages. There is a need to improve coordination between traditional leaders and councillors, as conflicts which are prevalent between the two institutions curtail their effort towards improving communal range management. The proposed act on traditional leaders should aim at complementing the mandate of councillors, rather than creating much conflict.

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PLATFORM PRESENTATION: THE EFFECT OF THE LAND RESTITUTION PROGRAMME ON POVERTY REDUCTION AMONG THE KHOMANI SAN

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The Land Restitution Programme launched in 1994 in South Africa is a tool intended to assist communities such as the Khomani San to reclaim ownership of their ancestral land. The Khomani San made their land claim in 1995. They were awarded land and resource rights including areas inside the Kgalagadi Transfrontier Park. Land restitution can potentially increase average household income, improve income distribution and consumption levels, better infrastructure and result in more access to natural resources, and, as a result, reduce poverty and inequality. The expectation that comes with land ownership is that it will result in improvements in livelihoods, and serve as a drive that generates economic and social benefits to the land claimants. The aim of this paper is to assess whether the land and resource rights awarded to the Khomani San through the land restitution programme are contributing towards their well-being compared to the non-beneficiaries – the Khoekhoe ethnic group.

Multi-topic surveys were used to assess the impact of these rights on poverty reduction in the Kgalagadi area. Information with regard to income, consumption and access to nature was collected from households. This paper uses the OLS regression model to assess the contribution of 'having restituted land' on household income and consumption, while the Probit model is applied with regard to access to nature.

The negative coefficient of the restituted land estimate (-0.185) implies that households do not gain much in terms of per capita income and are therefore not better-off compared to the non-beneficiaries. Moreover, this suggests that households who have benefitted from the land restitution programme do not necessarily earn higher income. Having greater access to land is not statistically significant ($P>|t| = 0.302$) in terms of contributing towards household per capita income generating potential of the restored land. Access to more land following the land restitution programme (restituted land) is not significant ($P>|t| = 0.887$) in terms of influencing food consumption expenditure (despite being positive, 0.144).

Nevertheless, restoring land to the indigenous people contributes ($P>|t| = 0.022$) towards their non-monetary well-being, as the beneficiaries tend to fare better in terms of having greater access to natural resources (0.892 coefficient). This is an important result as indigenous people are heavily dependent on nature and having greater access to natural resources can off-set their low-income and food consumption levels: access to natural resources such as medicinal plants, wild fruits, bush-food, hunting and firewood, and access to ancestral sites has cultural and symbolic importance, hence these are a proxy for access to nature.

The 'restituted land's' lack of contribution on food consumption expenditure and income support the argument that provision of land alone is not a guarantee to improvements on the beneficiaries' well-being. Post settlement support is critical if at all progress is to be made in this regard.

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POSTER PRESENTATION: HOW TO ENGAGE COMMUNITIES IN SEMI-ARID RANGELAND MANAGEMENT PROJECTS

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Sustainability of rangeland management projects often depends on the manner in which such projects are initiated, introduced and executed. Although the general principles of community or multi-stakeholder engagement apply to projects in semi-arid rangelands, for example: *i*) negotiating entry into a community (i.e. identifying legitimate processes that must be followed); *ii*) building rapport (dealing with "gatekeepers" like people in power, and/or key-informants); *iii*) having a realistic timeline; and involving relevant stakeholders in all stages of the project (i.e. planning, facilitation, and monitoring), two additional challenges that must also be taken in consideration regarding projects in semi-arid environments taking place over long distances in remote areas were found. These include long travelling distances and poor infrastructure (e.g. roads, telecommunication).

This is especially true for the internationally funded project that will be carried out by the North-West University (NWU) in the Mier area of the Kalahari region, Northern Cape Province, South Africa. One of the main objectives of the PRACTICE (**Pr**evention and Restoration **Acti**ons to **C**ombat D**e**sertification: An integrated assessment) project is to engage communities to link Science and Technology advances and traditional knowledge on prevention and restoration practices to combat desertification with implementation, learning and adaptive management, knowledge sharing, and dissemination of best practices.

The distance from the NWU to Mier is great, roads are not regularly maintained, and farmers predominantly only speak Afrikaans. Such circumstances make it very difficult to involve all relevant stakeholders in the planning, implementation, and monitoring of projects. It also makes regular, direct contact with stakeholders, generally regarded as a key component in the success of such projects, a very lengthy and costly exercise, and has a dramatic effect on a project's timeline. Solutions from a psycho-social perspective on how to overcome these challenges will be discussed during the Congress.

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