Community Based Rangeland and Livestock Management
Sustainable wealth creation in the Northern Communal Areas of Namibia
Livestock - enemy or friend for Namibia’s grasslands?

Through the 1990s the communal areas of Namibia experienced significant economic growth through the development and official recognition of communal conservancies that helped rural people to harness benefits from wildlife and tourism. While the spectacular landscapes and wild populations of game flourished under the protection by indigenous communities it soon became clear that in most rural areas grazing for livestock and for game was deteriorating. Similar deterioration was found on freehold land where bush encroachment and loss of perennial grasses steadily decreased the carrying capacity per hectare of land. While the production and export of healthy free-range beef and mutton contributes the third largest amount of income to the GDP and is the largest employer in the country, the national domestic livestock herd is in decline, with numbers south of the veterinary cordon fence now being 50% of what they were in the 1950s.

In response, research and teaching institution and national programmes such as SARDEP (Southern African Rangeland Development Programme), as well as individual farmers experimented with rangeland and livestock management approaches to help improve the productivity of grasslands and with that the productivity of the livestock sector. Most of these approaches were based on reducing animal numbers in order to prevent or at least reduce overgrazing. The lower stocking rates in some cases led to higher production per animal, but not to the overall increase in production of both forage and kilogram of meat produced per hectare.
The principles of sound rangeland management in the wild

By looking at the ecological process and the growth form of perennial grasses ecologists realised that perennial grasses benefit from being grazed as their growth points receive more sunlight to be converted into forage through photosynthesis. In addition the hoof action of large herds plays an important role in breaking soil capping, ensuring that more rainfall enters and stays in the soil for longer. This combined with concentrated dung and urine from large herds of herbivores improves soil fertility and increases production. Scientists and land managers who study the symbiotic relationship between animals and the forage they eat, understand that wild grazers prefer to be bunched into a close group to protect themselves against predators, such as lion, hyena, jackal etc. They not only eat, but trample down plant material before they move on to fresh pasture. The soil cover they leave behind provides protection against wind and water erosion and prevents extremes in day and night temperatures.
Observing the vast herds of wild herbivores on unfenced land researchers realised another vital aspect that keeps rangelands healthy: After a short period of relatively heavy animal impact (trampling, grazing and fertilising) animals move on to find fresh forage and water. It was noted that herds in many cases do not return before the grass sward has fully regrown. This provides sufficient time for the plants to replenish their root reserves from which new leaves can grow at the beginning of the growing season and after being grazed. The rhythm of root die-off and re-growth, together with the activity of soil living organisms builds a healthy aerated soil texture.
The principles of sound rangeland management with livestock

This same pattern of grazing was also utilised by pre-colonial livestock owners throughout Africa, where large herds of animals were herded to new pastures every day and livestock were moved from one cattle post to another in search of good grazing whilst ensuring sound management of the resource base. This good management practice has however been replaced by a situation where animals are permanently settled at a water point and animals are left to move wherever they want. This practice results in large losses to predators and theft and to a declining resource base in the communal areas of Namibia today.

In most cases it is no longer possible to return to these old ways, but it is possible to mimic them once farmers and herders know how a grass plant and the soil surface need to be treated in order to flourish and prosper. Farmers need to ensure that basic management is in place during the growing and non-growing season to ensure that the productivity of the land is restored. Most people do not realise that both over-rest and overgrazing result in decreased productivity of the land and that farmers need to be aware of what their management is doing above and below the ground.
The challenge facing farmers is how to enhance all of the positive effects on perennial grasses and soil that concentrated animals bring whilst only needing to strategically reduce and increase animal numbers based on the amount of rain and amount of fodder available to animals. In addition, most Namibian cultural traditions value high livestock numbers as a form of wealth, status and ancestral reverence. Therefore the previous approaches that centered on reducing animals without changing management were technically flawed and socially unacceptable and hence have largely failed to reverse land degradation in all dry climates of the world.
Herding to a grazing plan

The high animal impact from a concentrated herd of animals together with a long enough recovery period create the right conditions for perennial grasses to come back onto land which was previously dominated by annuals and which provides little security for farmers especially when rainfall is poor or delayed.

Rotating animals through a set of fenced camps or paddocks requires a big financial investment and poses challenges for keeping wildlife populations thriving. The alternative to static fencing is the herding of animals in a bunch where people determine every day where animal walk, graze and trample. An added advantage is that animals can be bunched more consistently and the stock density can be increased in a flexible way, allowing all animals sufficient selection as well as optimal impact on soil and plants.

The Namibian NGO Integrated Rural Development and Nature Conservation (IRDNC) recognised the powerful connection between indigenous tradition and the insights of modern rangeland science. As from 2001 they introduced communal farmers from conservancies in the Kunene region to the concepts and principles of holistic planned grazing through exchange visits to highly successful farmers in the SADC region. Following these trips traditional authorities, farmers and herders, sat together with support organisations such as the Ministry of Agriculture, Water and Forestry’s (MAWF) Directorate of Extension and Engineering Services (DEES).
They returned to discuss probable solutions to their circumstances. IRDNC and MAWF facilitated a process that encouraged livestock owners around one water point to combine their animals into one large herd during the day and to let the animals graze under their watch at a different place every day, bringing them back to the kraals at night to prevent them from wondering around in scattered formation. Farmers soon saw the benefits of this approach in terms of increased grass production, better animal condition, drastically decreased livestock losses to predators and stock theft. Production losses from disease and injury were also reduced where trained herdsmen accompanied their animals all day, every day.
The positive response by grasslands, animals and people in the small scale experiment in the Kunene region convinced not only the livestock owners to carry on herding to a grazing plan, but gained national and international attention. As part of its bi-lateral agreement with the United States of America, in 2010 the National Planning Commission (NPC) of the government of Namibia launched a pilot project called Community Based Rangeland and Livestock Management (CBRLM). The initiative is funded by the Millennium Challenge Corporation (MCC) and implemented by their Namibian counterpart the Millennium Challenge Account Namibia (MCA-N) under the auspices of the MAWF. The four-year contract was tendered internationally by MCA-N and the implementation of a Community Based Rangeland and Livestock Management (CBRLM) pilot project was awarded to GOPA. The focal area of the pilot includes designated rangeland intervention areas (RIAs) in Kunene, Omusati, Oshana, Oshikoto, Ohangwena, and Kavango regions. The target is to have 50 grazing areas actively practising CBRLM by the end of 2013 (see maps of implementation progress by March 2013 on page 14 and 15).
The focus of the intervention was also expanded to include the full chain of production, not focused only on rangeland but also on livestock production and health and marketing. Independent scientific monitoring and evaluation to inform the further expansion of the approach into more communal areas of Namibia accompany the implementation and outcomes.

The CBRLM programme addresses several aspects of vision 2030 of the Namibian government all at once: food security and safety, sustainable natural resource use management, climate change mitigation, rural poverty alleviation, vocational skills development and employment creation.

At the end of 2012 a mid-term internal evaluation revealed the encouraging successes and lessons learnt which are shared through this booklet.
Learning from fellow farmers

The intention of CBRLM is not only to “train” farmers to adopt a specific ‘best practice’ but to encourage farmers to think and observe for themselves and to facilitate processes where they can share and learn from their practical experiences. A natural consequence of this approach was that in 2010 all expert and field staff was first introduced to the principles of CBRLM by visiting demonstration sites established by IRDNC in Kunene and talking to farmers about their experience of having practised planned grazing and combined herding for over 3 years. This strategy of farmer-to-farmer exposure and exchange visits was used for mobilising the first grazing areas and resulted in the farmers returning to their respective regions and developing strategies and approaches that will work for them, whilst giving the grasses and soil what it requires. The most progressive of these sites in each region have now been established as demonstration sites within their regions to provide easier and cheaper access to local farmers. The relevant social and environmental experience is expected to result in increased adoption and implementation.
CBRLM is based on the collective planning and management of natural resources, livestock and skilled herders. The GOPA-CBRLM field staff operates in four regional cluster teams (Kunene, Omusati-Oshana, Ohangwena-Oshikoto, Kavango). Each of these teams regularly meets and plans with the regional offices of the Ministry of Agriculture, Water and Forestry’s (MAWF) Directorate of Extension and Engineering (DEES). Their combined understanding of and connections to traditional authorities and regional and local government helped the GOPA and DEES teams identify villages and communities where the intervention would likely be welcomed and feasible. At all levels the field teams started with hands-on presentations to explain the ecological understanding that underlies successful livestock production.
**Skills development for joint management**

The livestock owners of animals drinking from one water point elect a grazing area committee as the primary decision making group. Depending on the availability and local custom in some areas the livestock owners themselves or family members herd the animals. In other GAs the owners individually or the committee jointly employs herders. Sharing the upkeep and pay of a dedicated team of herders in many cases brought great relief to the poor households because previously every owner had to engage their own herder.

After exploring the existing local organisational structures such as water management committees it became clear that GA committees needed additional processes and skills for managing as a group and for making sound decisions that lead to the simultaneous advancement of wealth, financial self-reliance, social cohesiveness and a healthy productive eco-system.
It takes all kinds...

The local custom in most grazing areas says that livestock farming is the prerogative of men. One of the objectives of CBRLM is to broaden the participation and benefits to all genders and to the vulnerable members of the community. As a result of this in most GAs women are well represented on the committees and in some GAs women are herding their own and fellow members’ livestock. To further enhance the opportunities and benefits to women training in small stock husbandry is offered specifically to women as in most GAs they have the responsibility to look after goats and sheep. A small stock-pass-on-scheme was started at the end of 2012 to involve also those households in grazing areas that do not own livestock yet. The first female offspring of the seed herd is passed on to secondary beneficiaries.
Water supply and infrastructure

A critical pre-requisite to combined herding is that all livestock can drink water quickly after each other, either before going out in the morning to graze or before they are kraaled at night. Most water points were inadequate in that the re-charge of the trough was too slow or that the storage capacity of the reservoir was too low. While this water delivery was acceptable when animals came to water in small groups spread over the whole day GOPA facilitators soon realised that water delivery for combined large herds required upgrading of water points. MCA Namibia and the Directorate of Water in MAWF are drilling and installing to Rural Water Supply standards additional boreholes on the condition that planned grazing and combined herding is practised at these water points. Other grazing areas receive additional storage tanks and improved flow to troughs. In wildlife-rich grazing areas, elephant proofing of water installations was done to ensure reliable water supply for people and animals.
Combined herding to a grazing plan

Herders and farmers receive training in low-stress livestock handling skills to better adjust the density and speed of a herd’s movement.

This initial practice reveals if the people in a grazing area are committed to adopting a new way of rangeland and livestock management or not. Those who are committed will go through a more formal grazing planning process which includes:

After having established the boundaries of their grazing area on an aerial photograph farmers are guided by field staff to divide their land into several smaller areas according to special features that are important to consider when deciding where animals are best taken for grazing at specific times of the year.

The areas are marked on the map as a kind of virtual camp or paddock, except that the boundaries can change without moving a fence. The herders and livestock owners are then taken through a process of considering all management concerns, such as common approach of veld fires, livestock needs, herders’ needs and the grass plants needs as well as water availability and cropping and tourism activities and occurrence of poisonous plants at specific times in the year. After this, they plot the projected moves of the herd through the camps on the map. The actual movement of the herd is also marked on the map and later transferred to a grazing chart on which additional information about rainfall, number of animals etc. is documented.
**Herders as asset managers**

The practice of using children and school drop-outs as herders has led to the low esteem herders commonly are associated with. One of the greatest challenges of the CBRLM programme is to uplift the skills and status of herders to function and to be recognised as managers of significant assets (livestock and wildlife) and of a national resource (soil, bio-diversity and water). While the first years of the CBRLM programme focused on mobilising livestock owners the coming years and finding out what traditional skills of herding are still alive in the communities, the training of herders will enjoy priority in the second half of the project period.

As an experiment in some GAs trained and deserving herders who do not yet own livestock are also eligible for a small-stock-pass-on gift as an incentive and to improve loyalty by trained herders.

It is hoped that this will also help address the challenges that have been experienced where small stock are not herded together with large stock.
Drawing up and following a livestock management plan

Besides the routine vaccinations carried out by the Directorate of Veterinary Services, GAs receive advice on supplementary vaccinations against lethal diseases that are common or likely to break out in their specific region.

Hoof care, de-horning, branding, safe and effective castration are taught and demonstrated by livestock experts and specially trained facilitators. Selective treatment of parasites to reduce immunity of disease organisms is promoted and farmers are encouraged to regularly clean out kraals.

Livestock experts offer training on the basic treatment of common birthing problems, injuries and key illnesses.

Besides the training field staff help farmers to draw up a management plan that projects when each of the husbandry activities is done as well as how and how much it would cost.
Animal nutrition and health

Considering the nutritional needs of especially the cows before and just after giving birth and taking them to where the best forage is at that stage helps to improve re-conception and with that the overall productivity of livestock farming. Similarly the needs of animals destined for slaughter or for work as draught animals receive special attention when deciding how long they should walk to grazing and back. The improved quantity and quality of available forage boosts the immune system of all animals and they become less susceptible to common disease. The frequent moves from one grazing area to the next reduce the re-infestation with parasites such as ticks and worms.

Recent observations and research has shown that strategic supplementation of vital minerals and nutritional compounds may be needed to improve the overall digestion and adsorption of nutrients and to address mineral imbalances in the diet of the animals for better growth, weight gain and reproduction.

As part of the GA committee’s annual action planning and budgeting they are doing a marginal reaction comparison of costs and benefits of various special livestock improvement strategies, such as mineral supplementation or breed enhancement options. This helps farmers to choose those actions that bring them the highest return for the money and effort they spend in a particular year.
Herd structure improvement and access to bulls

Depending on the geographic region and enterprises that the owners are engaged in their production goals include any of the following: animals as a form of saving or wealth, animals passed on by ancestors and therefore with a holy status, draft animals, animals destined for being given as a gift at weddings or other festivities, animals for sale to cover big expenses such as illness, school or study fees, the purchase of a vehicle or house building materials etc. Seldom do farmers depend on or want to use income from livestock to pay for day-to-day expenses.

Taking into account the combined production goals of all the farmers in the GA, the livestock expert or field staff help farmers identify unproductive animals. These include animals that are losing value or cultural status due to age and/or condition, or those that do not reproduce (such as market-ready oxen) and take up resources that would be better invested in breeding animals. While initially animal numbers may drop, farmers gain in the long run by selling off and preventing animals with low fertility to spread their genes through the herd.

Following the bulls are examined through a breeding soundness examination and the current ratio of breeding females to mature healthy bulls is assessed. If there are significantly more than 25 females to one bull, strategies are discussed to obtain additional bulls.
Managing risk to grow wealth over time

The culling of unproductive and infertile animals combined with sound rangeland management is expected to build wealth as fast as possible. To manage risk this means however that animal numbers will need to be reduced strategically when below average rainfall occurs. This will ensure that large die-offs of animals do not occur and the sooner animal numbers are reduced the fewer animals will need to be removed. Once good conditions return then animal numbers can be increased again.

If this is done carefully the resource base should also improve over time allowing more animals to be held per hectare than was previously possible. The drought facing Namibia in 2013 may require that CBRLM engages with strategic de- and re-stocking to avoid the decimation of herds and wealth as occurred in the 1980s.

As part of addressing in-breeding and to facilitate genetic improvement MCA Namibia made available money for a revolving fund where the CBRLM support organisation sources and transports registered bulls for GAs to buy. Approximately one hundred bulls were distributed up to the end of 2012 and more bulls as well as small stock will be sourced through the revolving fund.

To offer a more cost-effective and self-reliant alternative, GAs are encouraged to only castrate those male offspring that are clearly not suitable for production breeding and to exchange well adapted bulls with other farmers in the region to ensure genetic diversity instead of purchasing bulls from further away.
Management plans and production records

CBRLM integrates inputs from various experts and capacities, such as rangeland management, livestock management of cattle and small stock, community development, water point care and livestock marketing. In order to make this integration easier, grazing area committees are encouraged to start a GA Book. A robust lever arch file holds photographs, maps, management plans and handwritten minutes in the local vernacular. Field staff take photographs of these entries and send them to the CBRLM coordinating office where an electronic and hard copy of the GA Books is kept to inform the progress reporting and planning of support to the GA. During exchange visits these GA Books serve as additional source of information, especially in the demonstration areas where the content is translated into English whenever a new page is added.
Financing joint management

Joint purchasing of fuel to pump water, herders’ equipment, vaccines and veterinary medicines can reduce the cost per animal and per farmer. To this end guidelines to set up and run a Grazing Area Fund (GA Fund) were developed together with farmers across all the regions. Money contributions are collected from livestock owners into a combined cash box and a bank account from which the joint expenses are then paid. As a start-up capital, GAs receive match funding up to a certain annual limit. The GA knows that this match funding is only temporary support and that they must prepare for self-sufficiency.

Similarly to farmers elsewhere most GA members come from a habit of “crisis management”. When something runs out of stock, like fuel or breaks down then only money is mobilised. Very often this causes interruption of herding and planned grazing or a delay in treating sick animals leads to death. Therefore CBRLM facilitators help GA committees to draw up an annual action plan. Following they calculate and document a financial budget for the prioritised projected expenses as well as for unforeseen costs.
The action planning and budgeting also includes a survey of where the weakest link currently is in the chain of producing livestock or livestock products from natural veld. Instead of following advice by visiting experts or public media the farmers are encouraged to critically look at where they would get the greatest return for the effort and money they are investing in any activity.

Based on the projected costs the GA members discuss and decide on a way to calculate the contributions each of them will make, at what time intervals and any other rules pertaining to the financial management and administration.

The treasurers, secretary and chairperson of the GA receive training in a simple, yet transparent bookkeeping system on stationery translated into local vernacular. This allows them to report back to livestock owners - even those not resident in the GA. The actual transactions are compared to the forecasts in the budget and through this the GA committee can detect problems and adjust their plans timeously.
Pro-active and strategic marketing of animals

The total cost of paying for all the cash expenses of a GA can range between N$ 50 000 and N$ 250 000 per year, depending on the number of animals and the choices that farmers make in terms of livestock improvement strategies. To help pay for these production expenses as well as for the livestock owners livelihoods CBRLM encourages and facilitates the pro-active marketing of unproductive and market-ready animals. Instead of waiting until the moment of need arises and taking the risk of getting a poor price for an animal when it is in poor condition or because the current market price is low due to high supply and low demand, farmers are explained the dynamics of seasonal market fluctuations and the pricing according to carcass conformation and quality grading.

Sensitive observation and discussions with farmers revealed the main reason for their common resistance to selling or consuming animals at a faster rate. The low rate of replacement i.e. the relatively low number of calves born and surviving does not allow for greater off-take, if the total number of animals should be maintained or even grown.

All production goals are served by increasing the proportion of healthy and annually re-breeding animals in a herd and by selling off old and unproductive old oxen to make available grazing for productive animals. By earning cash from livestock to pay for the cost of keeping livestock, rather than subsidising it from off-farm
Because the bulk of beef that is consumed in the urban areas of the Northern Communal Areas originates from south of the veterinary cordon fence, the marketing component of CBRLM collaborates with other national programmes to enhance the purchasing of meat from the northern communal areas for public institutions and by formal and informal meat sellers in the NCAs. The most common reason for not buying meat from the communal areas is often the inconsistency in quality of meat and at times the inferior quality due to poor livestock condition. CBRLM can help farmers to achieve better body condition scores at the time of slaughter and therefore can become more competitive in the greater Namibian and regional meat market.

Because the Northern Communal Areas in general and some regions in particular are severely restricted by inadequate infrastructure and organisation of livestock marketing facilities CBRLM support organisations work with other industry stakeholders and government to improve regional auction facilities and coordination of sellers and buyers. More recently the formation of regional cooperatives was initiated to enhance farmer participation in and benefit from the marketing process.
Mainstreaming CBRLM

Although it is conceptualised as a pilot project, CBRLM has already shown sufficient advantages that warrant planning for mainstreaming of the successful aspects of the programme. It is believed that the pilot has to date developed innovative processes, tested and trialed them and that they are ready for up-scaling at a national level. Up-scaling must include greater integration into existing structures whilst retaining the effectiveness and flexibility through partnerships. An enabling environment needs to be created to allow farmers to manage grass poaching and non-compliance with rules established in a GA. The development and enforcement of by-laws that are already included for wildlife, forestry products and others need to be extended to the application of sound rangeland management principles in Namibia.

Another challenge that has to be met with regional and national responses and resources is the destructive effect of veld fires. Fires create bare ground and increase evaporation and erosion. In addition it attracts uncontrolled livestock and game and they tend to overgraze on the out-of season green flush which weakens grass roots.

This pilot is a valuable contribution to the adoption by cabinet in 2012 of the National Rangeland Policy and Strategy. To further support this policy with its underlying principles requires consistent information and education of and then by public service personnel such as MAWF-DEES as well as the private sector (farmers organisations, donors and private sector service providers).
CBRLM support organisations are engaging with all the stakeholders to discuss various options for continuing the leadership and financing of facilitating joint rangeland and livestock management in communal areas.

By investing in practical local management capacity, CBRLM enhances the resilience, self-reliance, peace and stability of Namibia’s rural areas. This programme has the potential to make a significant contribution to the local, regional, national and international economies and can influence more innovative policies in Africa as well as other dry countries of the world.