

COMMUNITY INITIATIVES IN LIVESTOCK IMPROVEMENT: A CASE FOR KATHEKANI, KENYA

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Introduction

Kenya is a country located in East Africa. It borders Uganda to the west, Ethiopia and Sudan to the North, Somali to the East, and Tanzania to the south. The equator intersects the country. The population of Kenya stands at 28 million people according to the 1999 National population census. Only 20% of land is agriculturally high potential. The rest is arid and semi arid, best suited for livestock production. Kenya experiences bimodal pattern of rainfall with the rainy season extending from March to May and October to December. Occasionally the rains are below normal for consecutive seasons leading to drought.

Intermediate Technology Development Group (ITDG) has a lot experience in biodiversity conservation, but with greater emphasis being laid *in-situ* conservation of agricultural biodiversity, particularly focussing on crops. ITDG is an international development agency working with marginalised communities in seven developing countries in Africa, Asia and Latin America to develop and adopt appropriate technologies to enhance their skills and economic status.

ITDG began in 1967 based on the then radical ideas of Dr. Fritz Schumacher author of the best selling book "Small Is Beautiful". ITDG's vision is "*A more equitable and just world in which technology enriches and benefits the lives of the poor. In the context of East Africa it is our wish to improve livelihoods of marginalised people in the region*". Its mission statement is to build the skills of poor people in developing countries enabling them to improve the quality of their lives and that of future generations.

ITDG-EA works in five technology areas, agriculture and pastoralism, small-scale manufacturing, rural transport, building materials and shelter and energy. Since 1996, ITDG-EA through the Rural Agriculture and Pastoralism project (RAPP) has been implementing the Marginal Farmers project in Kathekani. The objectives of this project are:

- To build a community capacity to address their own livestock issues with access to a range of technical options
- To establish a sustainable Decentralised Animal Health system, with access to its own training capacity and referral system, and incorporation of effective Existing Local Knowledge
- A community-based tsetse fly control project established and running

Background of Kathekani

Kathekani is a dryland farming area in Eastern Kenya. The project area covers approximately 48 square kilometres. It lies in ecological zone 5 and 6. These zones are characterised by low rainfall and high temperatures averaging 25-40 degrees centigrade. Rainfall pattern is bimodal in pattern and reliability is poor. Average rainfall is about 600mm per annum. The dominant tree species are Commiphora and Acacia species. Grasses commonly found in this area are *Cenchrus ciliaris* and *Eragrostis superba*. It is a newly settled area with 3000 farm families made up of about 17,300 people. The community members in this area are agro-pastoralists. The area is only suitable for drought tolerant crop farming, due to erratic and unpredictable rainfall, which frequently causes crop failure. The crops grown are sorghum, cowpeas, grams and millet. Only one out of four seasons is actually successful.

The livestock management systems in this area have been historically extensive. Commonly reared types of livestock are cattle, goats, sheep and chickens. The East African goat is the breed traditionally kept by this community. However, other breeds such as the Galla exist. Increased human population has resulted in subdivision of land, leading to changes in land tenure systems. This has increased demand for food from livestock sources and other resultant socio-economic needs, leading to development of semi-intensive systems of livestock production.

Kathekani borders Tsavo East National Park, a source of tse-tse. It is thus highly tse-tse infested, leading to heavy cattle losses from trypanosomosis. This has compounded the land use problem with more land being opened up by the community for cultivation as farmers look for alternative livelihoods. The grazing land has thus been reduced, creating a major constraint in livestock production despite the use of on farm crop residues for nutritional purposes a practice that is not adequate.

Interventions of tse-tse control through trapping technology by ITDG-EA have helped to reduce levels of tse-tse and farmers are beginning to restock. This is because of lowered disease incidence as a result of reduced population of tse-tse. Farmers nevertheless prefer to start restocking through goat keeping as a low risk investment.

The major production constraints in the area are related to poor extension services from the government, low resource base and frequent drought. The community faces a lot of challenges like wild animal migration, environmental degradation, poverty and food shortage. The ability of individual households to identify and mobilise resources to solve their challenges is low. The use of PRA surveys combined with workshops to chart the way forward was very effective in addressing these challenges.

Culture and goat breed conservation

Goats are very important culturally to the Akamba community of Kathekani for example:

- Dowry payment.
During the introductory visit in a marriage process, the suitor must offer goats as gifts to the would be parents-in-law as a gesture of a budding friendship between the two families. This implies that if a man has no goats, he has constraints when considering marriage. The colour of the goat used is always white.
- White goats were also used for sacrifices to the gods

- Witchdoctors payments are always done in black colour
 - Social purposes
It is honourable to slaughter a goat for a close relative, in laws or a close friend when they visit your homestead or mark other social occasions
 - Prestige
It is very prestigious to own goats and therefore earns a man a lot of respect from the other community members. “Without goats you are not a man, you are nothing”, according to one farmer interviewed in Kathekani.
- These cultural requirements necessitated propagation of particular breeds within the community, which was an incentive towards conservation.

Management systems of goat rearing

Land in Kathekani is individually owned and therefore farmers graze within their own farms. The population of cattle is 21,000 and that of goats is 60000 (1997 livestock survey by ITDG). The livestock breeds reared are indigenous. Management system of livestock rearing in Kathekani is semi-intensive. Grazing is either done individually or communally. Watering of the goats is done in rivers, which criss-cross the area abundantly.

Although supplementation feeding of goats is minimal, it is still carried out on a low scale. Mineral supplements and on-farm by-products are used. Commonly used farm residues are maize stovers, cow pea and green gram pods. Maasai love grass and acacia pods are also used. This is usually so for the sick animals, pregnant does and the rest of the flock when pastures are inadequate and when on-farm by products are available. No commercial concentrates are provided.

Minerals for the goats are acquired locally through natural salt licks that are found along the watering points and almost every farmer has access to these points. For those farmers who cannot access the salt licks or are unwilling to take their animals there because of mixing, they purchase locally made salt. The Ngiluni farmers group from Kathekani makes the salt from bones, termite mounds, bricks and common salt. They sell it to other farmers at about KShs 80 (1£) per kilogram.

Existing goat genetic resources

The indigenous goat reared by the Kathekani community is the East African goat. The Galla goat is also reared by particular farmers but is not very widespread. The community got an interest in the Galla goat due to the positive traits they had spotted. The two breeds form the goat gene pool, which the farmers are exploiting to improve their goat production. The major driving force towards the initiative is the market demands, which are dictating the product to be produced. The description of these breeds is as follows:

East African goat

It is one of the most successful domestic stocks in the semi arid lands. It is found all over East Africa from the desert to the urban areas. The colour ranges from pure white to pure black with various intermixes of roan and speckled brown. Males have pronounced

manes running the full length of the back. Horns are 2.5-20cm in length. Tassels are found in up to 30% of the breed. Adult males attain weights up to 35 kgs and females 25-30kgs. Sexual maturity is attained within 5-6 months of age. The East African is superior to the Galla in fertility (89.4:75.5%), prolificacy (24%:6%) and return to oestrus (short postpartum interval 9 days earlier than the Galla)

They have a slow growth rate. Yearlings rarely exceed 20 kgs. They are kept mainly for meat as their milk is rarely sufficient for more than a single kid. They have potential for selection and so useful to use as a base in an upgrading programme. Their greatest asset is the ability to survive. The East African has more tolerance to the following diseases in comparison to the Galla;

- Trypanosomosis,
- Internal parasites,
- Pasteurellosis, exemplified by low kid mortality.

Galla goat

The Galla is indigenous to the northern areas of Kenya. Its other names are the Borana or the Somali breed. It is further classified into two types: the *Degvir*, a medium sized and a larger pure white type, the *Degeun* (Devandra and McLeroy, 1982). Bucks have an adult weight of around 70 kgs and does 45-55 kgs. They are kept by the Borana for their higher milk yield compared to the East African. Given favourable conditions, the Galla continues to gain weight up to 8 years of age. At the end of their reproductive life, they still have considerable sale value for meat.

Characteristics to qualify for registration in the *Kenya Stud Book, are as follows: must be white haired with a black skin, nose, feet and undertail. The other subtype is coloured around the head and lower legs with a black stripe along the spine.

Galla females continue to breed and rear kids up to ten years of age. It has a strong dental system and therefore it is rarely culled for this problem. They are docile, easy to handle and thrive best in low altitudes, preferably in acacia bush

country. They have a remarkable power of compensatory growth after a long dry season. They have high wither height and long bodies allowing them to utilise browse that cannot be physically reached by the East African species.

Females produce 20 kgs of kids at weaning. They can lose up to 10 kgs bodyweight during lactation (10-15%) but given the opportunity will regain this loss in 2-3 months.

Objectives of the community initiative

The farmers objectives in improved breeding initiatives is mainly to improve livelihoods of the Kathekani farmers through higher production of their livestock to ensure food security. This can be achieved through:

- Building of a strong local community capacity to address livestock production constraints.
- Improving household income through the sale of goats for slaughter and the young crosses for breeding
- Exploiting the existing local gene pool for goats to achieve higher productivity of goats

* A quality control farmers centre for all livestock breeds

Breeding program and the group involvement

The approach adopted by farmers is communally managed utilisation of locally available goat genetic resources among the resource poor farmers. The Galla and the East African goat are used as a local goat gene pool for the arid and semi-arid lands in Kenya, which the local community are exploiting to harness positive traits. In the case of Kathekani this is achieved through a group approach. The breeding programme is communally controlled through formation of groups with a clear goal of improving goats productivity.

Farmers have formed nine groups. Each group has an average of fifteen members. Each farmer selects the best performing buck and does of the East African origin. The breeding material is acquired through selection from the existing flocks. The poor performing bucks are castrated and the females are culled. The farmers are thus left with the best performers for breeding. This is a prerequisite to introduction of other genetic material from the Galla origin.

Existing farmers' by-laws stipulate that:

- That all the poor performing East African bucks in a farmer's flock have to be castrated before introduction of the group Galla buck.
- Those members unwilling to castrate their East African bucks should ensure physical separation once the Galla buck is introduced. They relocate them to their distant relatives or close friends.
- Each farmer within a group should put up a housing structure for all his goats to protect the goats against extreme weather and predators due to close proximity to the Tsavo National Park.
- To allow for procurement of the Galla buck, each farmer has to make a monetary contribution as stipulated by the group

For faster realisation of results, farmers have targeted the Galla buck as opposed to the doe for mating with the East African doe. After castration of all the poor performers and physical separation of the other East African bucks in the flock, the only mating option for their does remains the group's Galla buck. This nevertheless ensures that should the need arise, the East African goats can always be accessed.

For breeding purposes, the Galla goat is procured from the neighbouring districts. The last batch was purchased from the Orma Borana of Tana River district. They also provide useful background information of the breeding stock.

Since the rearing system is semi-intensive, the goats are grazed on natural pastures. Each member is allocated the Galla buck to utilise and rear with the rest of the herd for one

month. The choice of one month is to ensure that other members do not wait for too long before getting a chance to have the buck. Each farmer takes custody of the goat for one month before relinquishing it to the next beneficiary. To determine the next beneficiary, members carry out a ballot every month. Those who have already benefited are usually exempted from this ballot. If a member benefits and for one reason or another does not require the buck within that month, he passes it to any other member at his own discretion. Some of the reasons why some members forfeit their chance are; pregnancy of all their does, not having fulfilled the groups conditions such as castration and selection of their bucks or failure to have a housing structure for their goats.

The buck is supposed to rotate among all members in the group. During the period when the goat is in custody of one member, access should not be denied to other members. Members present their does on heat to the buck for mating and then take them back once they are mated. Once all members have had a chance, after a full rotation, the members exchange their bucks with other groups to prevent inbreeding.

Two group members who are economically able have purchased their own Galla bucks and does. They graze these bucks with their other flock and they are not free for rotation to other members. These members have the long-term intention of being Galla breeders for multiplication and distribution to the other farmers for breeding.

Measures to prevent uncontrolled breeding

- They exchange their bucks among the different groups once all members have had custody of the Galla buck. So far, a full rotation has not yet been achieved.
- Individual members intend to exchange their bucks among each other once the F1s are mature enough to be mated.
- Each farmer ensures that they graze their animals separately to avoid mixing them with those of their neighbours so that only the Galla buck is allowed to mate.
- Watering is either done at home or at a nearby river. To equally avoid mixing, farmers water their animals after other community members are through with the process. This however is not fool proof and accidental uncontrolled breeding may still occur.
- To prevent goats mixing at the salt licks, most of which are communal; some farmers have opted to purchase the locally made salt from Ngiluni farmers group.
- Record keeping of the bucks used for breeding, especially the Galla Bucks

Breeders association

The breeders association is a steering committee which co-ordinates all the activities of the breeding group. Each of the 9 groups has representation in the breeders group. The group deals centrally with all procurements and also links the breeders to other service providers. The breeders association was the founder of this initiative. This is a forum in which the interests of group members are discussed. They form linkages with other partners in goat breeding.

Support to this initiative

Several institutions are involved in the support of the community initiative in different areas and capacities.

Technical support:

- Ministry of Agriculture and Rural Development (MoARD) provides technical information as required by the breeders through extension services. This is in identification of good breeding bucks, provision of movement permits, animal health and proper goat management practices.
- Community-based Animal Health Workers (CAHWs) are farmers trained on basic animal health techniques, who are selected by their communities. So far 43 CAHWs have been trained in Kathekani. They are in the front line of animal health delivery at the community level. They attend to all emerging cases and refer the ones beyond their capacity to the government veterinary personnel.
- Ethnoveterinary Practitioners: There are ten registered traditional healers who provide cheap services to the livestock breeders for the various livestock ailments within their capacity to treat.

Logistical support

- On request, ITDG-EA assisted the farmers in transportation during acquisition of goats on request.

Capacity building

- ITDG-EA also offers capacity building through training on small business skills, fodder conservation, pasture establishment and making of salt licks. The farmers have also been taken for exposure visits to other areas where breeding programmes are being implemented.

Socio-economic support:

- Butchers and livestock traders provide the marketing channels for goats aimed for slaughter.

Sustainability

1. Sense of ownership
 - Farmers make great financial contribution towards this initiative with very little external support, giving them a sense of ownership.
2. Strengthened institutions
 - The community's capacity to run the project has been greatly enhanced through relevant trainings and exposure visits to other breeding programs in other areas. The small-scale business skills training helps farmers to view farming activities as business ventures.
 - Linkages with other partners, e.g. MoARD, CAHWs, livestock traders and other relevant partners. The community therefore knows where to access information and technical advice.
3. Group approach
 - This ensures that all members are responsible to each other, giving a sense of accountability and transparency with inbuilt monitoring systems

Monitoring

The farmers do monitoring of the initiative's progress themselves. This is done through the following ways:

- Members have kept simple records for identification of the buck used for breeding. The bucks are identified through their phenotypic qualities as well as by the group that originally owned the goat.

- The health of the buck is also one of the pertinent issues that have to be kept in check. In case of sickness, the group member taking custody of the goat bears the cost. The member should also report the matter to the group officials to, appraise them on the nature of illness and the course of treatment being adopted. In such a case, if the goat eventually dies, the group takes responsibility. The animal health component is the reserve of Community animal health workers and their referral systems.
- Financial records of the members contributions are kept by the groups' officials

Outcome

The anticipated and realised monetary benefits of the project have encouraged farmers to adopt this breeding initiative. The Galla/East African crosses are attaining much higher market weights in a shorter period as compared to the East African goat. The goats are also more preferred by butchers and traders because of their big size. An East African goat weighing 25kg liveweight fetches KShs 1500 (USD 20), while a cross of 45Kg fetches KShs 5000 (USD 67) and a Galla of about 65kg fetches KShs 7000 (USD 90).

Livestock management practices have improved among the farmers. Farmers are more in control of their animal health problems than before. For example, improved housing, prompt treatment of the sick animals, deliberate effort to watch out for breeding diseases. This has led to production of high quality carcasses with fewer losses from condemnation.

Greater linkages between the community members and other partners with a stake in the breeding initiative. Farmers are in a better position to network and access information they require for their livestock production needs.

Constraints

- Limited availability of pastures especially during drought
- Lack of adequate resources to increase the number of Galla bucks to ensure that each farmer has at least one, thus increasing the Galla genetic resource base. This has led the farmers to use their East African goats when the Galla goat is in custody of other farmers.
- Risk of uncontrolled breeding during watering and grazing
- Predation of livestock by wild animals from the National park.
- Lack of appropriate breeding policy for the arid and semi-arid lands
- Low level of literacy leading to poor record keeping. Some members attempt to keep their records in memory.
- Inadequate goat nutrition due to constant droughts
- Lack of a clear breeding policy

Lessons learnt

The following are the lessons learnt by community members and partners.

- Community-based knowledge and practices is a strong tool in community livestock breeding programmes. This leads to a demand driven participatory planning approach where the interests of the community are well catered for.

- In situ conservation cannot be successful if it is conducted for its own sake. There must be felt benefits at the community level.
- Breeding programmes are successful if developed as an integrated livestock production package and not in isolation. This should also incorporate the farming systems in a particular area.
- Organised community activities lead to faster realisation of development objectives.

Conclusion

The initiative is in a nascent stage. Farmers are at the moment focussed on immediate or short-term benefits as opposed to long term benefits. The crossbreeding method that is apparent is the criss-crossing mating although instead of using tropical breeds, indigenous breeds are used. Some of the farmers are grading up their Galla without clearly knowing the level they want to achieve. As a result, it is clear that the farmers are not quite focussed on what end product they require. They thus require technical guidance from professional breeders to help them map out their breeding strategy and long term objectives. Technical guidance could also be in the form of a clear breeding policy to guide them on the way forward in their breeding programmes.

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