SIM SIM IN KITUI AND MACHAKOS DEVELOPMENT

SASOL

DEVELOPMENT THROUGH FARMERS' COLLECTIVE SELF RELIANCE

Increasingly, it is becoming difficult to maintain the resource base or to structurally improve Agro-ecological Zones IV and V in Kitui and Machakos districts for the purpose of generating subsistence and cash income.

Presently (1992), accelerated degradation of the land and population growth have reduced farm income per capita by some 46% over the past 12 years. A sectoral approach towards solving perceived problems has not, and, will not, have positive effect. Whilst production decreases and off farm job opportunities are becoming less, in the face of rising poverty, farmers are unable to raise the efforts and funds (i.e. labour materials, and capital goods) required to make the improvements that will generate sustained and increased production.

Despite the efforts made by government and donors, progress in ASAL is negative rather than positive. Overheads of executing agencies more often that not eat up more than 75% of the available funds. Different approaches by different ministries and different donors lead to dispersed activities of insignificant impact, whilst in ASAL, solutions can be found only through a systems approach. Moreover, high potential techniques that are applied, generally do not work in ASAL. The type of community participation advocated from outside implies that farmers take up the government or government sponsored lead. Government, in fact, should assist and listen more often to leading farmers.

It is high time that farmers fully understand that no government, whatever its colour, and no donor, no matter how well intentioned, will come up with all the answers.

What then should be done? Of course, many of the answers are already known. These are: more income from the farm (thereby also preventing people from being forced to seek gainful employment elsewhere), fair prices, guaranteed markets, transport, better roads, new technologies and skills, an organised farming community, agro-afforestation, land adjudication, zero grazing, animal health, improved pasture production and better range management. These, and others, are pre-requisites to sustained and increased production.

The cost and effort of realising most of the above must be borne by the farming community. Government and donors, under the leadership of the

farming community, can assist with teaching, supplying the proper seed to grow selected trees and crops, giving technical advice, informing farmers about prices, giving legal assistance and the like. In addition, government and donors can supply funds to pay for advisers' salaries, their offices, and their transport. However, the main burden of progress is on the farmers themselves. Utilising collective self reliance, farmers can lighten the individual burdens. The question now is whether farmers are able and capable of organising for this. We believe they are.

THE SIM SIM POTENTIAL

In order to make a start on the long road to achieving progress, increasing the amount of cash in the communities is needed now. Over the past ninety years, cash was generated by livestock or migration labour. These two alternatives are not possible for there are few jobs to migrate to and many of the plots are too small for extensive livestock keeping. Although it is recognised that the livestock sector in both districts is by far the largest income earner, since the seventies, repeated droughts have decimated it and significant numbers of the populations do not have economic size herds. Further, its structure and its workings are too complex and the investments needed at this stage too high to use as a suitable point of entry in attempting to generate extra cash to the base communities.

The alternative to livestock is cash cropping. However, the range of options for cash cropping (in AEZ V in particular) is extremely narrow. In fact, apart from the ASAL cereals and pulses, only oilcrops are worth considering.

Between 1985 and 1990 the UNGA group conducted field trials with sunflower, sim sim, cotton, groundnuts, cashew nut, coconut, jojoba, castor oil, and soya all over ASAL uninterruptedly. Of all these crops only sim sim gives a decent return to the farmer, and to the small farmer in particular, provided that the minimum farmgate price does not fall below Ksh. 5.15 per kilogramme. Castor oil still may be regarded as a possible crop if planted on wastelands. The other crops are not worth considering, although it must be mentioned that the perspective for cashew nut may change if suitable markets are developed for its consumption as a nut. For cotton the situation is different, as sim sim does not grow on black cotton soils, and as such does not compete.

Sim sim has the following attributes:

* Water requirements for a 100% return are 350mm. In contrast, sorghum requires 450mm and maize 550mm. Millet and sim sim are comparable in that they require the same amount of water. However, sim sim is more drought resistant.

* Yields vary between 200-500 kg. per acre. Higher yields, of course, correspond to better husbandry. Even the lower yields generate superior income than maize, sorghum or millet. Taking into account that ASAL is entering into a cycle of lower rainfall, it is safer to grow sim sim.

* The crop prefers sandy, well drained soils. Apart from weeding twice, maintenance is low. Although it responds well to manure, its application is not necessary. It is not normally affected by diseases. However, experience in Kitui this season (October Rains 1991) has shown that it can be attacked by caterpillars that also affect the maize crop and beans. Perhaps this is a problem of extra dry years. Interplanting with African or Mexican Marigold, however, is a remedy.

* Sim sim produces approximately 50% edible oil, whilst the remainder is used as cattle feed (cake). Given sufficient production, construction of a local oil mill will generate employment as well as cattle feed (protein supplement) during the dry season.

STRATEGY FOR DEVELOPMENT

1. INTRODUCTION OF SIM SIM

Farmers are strongly advised to direct part of their efforts of generating cash farm income towards the growing of sim sim. This, however, should not exclude the cultivation of maize, which in periods of drought, does not produce food for human consumption, but which at least produces animal feed. Farmers should therefore make sure that a minimum of 2 acres of maize are planted where feasible. The rest can be taken up by sim sim. Where farmers have less than two acres, a system of interplanting is recommended.

Farmers who are interested in the sim sim programme will be required to apply land conservation measures. This includes building of terraces, planting bana and napier grass on the terrace banks (for later use in zero grazing), tree planting, as well as other measures. It should be noted that some progressive farmers even terrace their grazing land.

Sim sim will be bought at the farmgate for Ksh. 5 per kg. and will be sold for 8 Ksh. per Kg. The difference of Ksh. 3 will be invested back in the area from which the crop originates. This means that if one thousand farmers produce one thousand tonnes, the return to the area will be Ksh. 3,000,000. Even in locations like Mulango in Kitui District, where farmers have little land, 2000 farmers cultivation 1/2 acre each, and tending their crop well, could produce 600 tonnes per annum. This would produce a cash income of Ksh. 1,800,000.

This can be invested back into the area each year.

It must be emphasised that an organisation like SASOL reserves all "surplus" monies from the different areas for these areas only. The organisation's expenses will be paid for by donors. This includes fees, offices, transport, and the like. SASOL also provides technical advice in the field, design of structures, and other services free of charge to the farmers. Farmers, however, will have to pay for their own tools, seeds, materials (eg. cement), and also pay for their own labour. For example, if farmers wish to construct a sub-surface dam, SASOL will assist in the selection of the site, the design, and the bill of quantities, as well as advising where and how materials can be obtained at the lowest prices. Farmers will need to pay for the materials, provide their own labour, and pay the fundis.

2. INTRODUCTION OF THE SCHOOLS PROGRAMME

If it is understood that the cultivation of sim sim is the first step in the development process, then the second step implies that first attention must be given to the schools. Schools contain approximately 40% of the total population. These children are also the farmers of tomorrow. For lack of opportunities elsewhere many of them will work the land after leaving school, so they must be prepared to gain a better living from the same land than their parents before them.

What is the return parents can expect from investing their surplus sim sim money in schools? First of all, the objective is to teach children better methods for sustainable agricultural production in ASAL. This includes organic farming related to zero grazing, improved methods for soil moisture conservation, water harvesting, and other methods, such that present suffering in periods of drought can be avoided. These methods will not only be taught in the classroom, but also in practice in the school catchment. Each child will be required to do practical work on the school compound.

Children will be taught about improved farming practices in ASAL, but also about health, AIDS, nutrition, and ecology. However, teaching is not all that the programme is about. The school compounds will provide sufficient food, so that each child will have one square meal every day during school wells that will be constructed, and a glass of milk produced by the cows given to the schools as part of the programme.

Parents who wish to know about the new techniques will be invited to come and work and learn on the school compounds. They will be paid Ksh. 20 a day for the time they are working and learning. Learning will further include how to operate a solar cooker. The presence of parents is further important in making sure that the teachers perform their appointed tasks in the

programme. Although SASOL at no cost to the farmers will do the initial teaching, this be taken over the school after a few months. A full commitment of each teacher is thus is a requirement.

It is possible that donors will step in to speed up the schools programme. Farmers, however, must be aware that this is not a sure thing, and furthermore, that this does not take away their own obligation towards the development process. What it means, in fact, is that the development steps can be made more quickly.

3. DEVELOPMENT OF COMMUNITY WATER

Parents who have learned to apply the new techniques in the schools may wish to apply these on the farm. A first requirement, however, is immediately available water for home consumption (i.e. drinking water, water for livestock, and water for composting), so that time otherwise spent fetching water can be spent on farming. Moreover, greater quantities of water at a short distance means that zero grazing becomes more viable since water collection labour can be transferred to farm production.

The third step in the development process thus entails the construction of waterpoints at no more than 20 minutes walking distance from the farm. Construction of these points will commence closest to a school, moving out in concentric circles until this touches on the circle of influence from another school. The choice of the type of waterpoint depends on the parents/farmers, but since they need to pay a large part themselves, they will be advised on the least expensive and most effective option. Again there is a possibility that donors will assist with some funds, and of course SASOL will make the necessary effort to procure these, but again let farmers be aware that they must not count on this. It is rather luck than the rule that one is so fortunate.

4. IMPROVEMENT OF THE SUBSISTENCE BASE

The core of ASAL farming consists of maintaining the breeding stock for animal production and growing of staple crops. It is perhaps ironic that cash cropping of sim sim and the schools programme (new skills), as well as water financed by surplus sim sim money are pre-requisites to strengthen the subsistence base, but unless a rich family member chooses a different road there is not other way to achieve enhanced food security and development.

Better maize and bean production can be expected from organic farming on conserved land. Furthermore this enables viable production of vegetables (onions, sukumawiki, tomatoes, etc.) that are principally grown under rainfed conditions. Some additional irrigation of vegetable crops may be needed in dry periods. Attacks by pests are counteracted by using plants like the African Marigold planted around the crops or spraying of Marigold soaked

water.

Organic farming with an animal manure component is not strictly necessary, as compost from vegetation only can also be obtained. For higher yields manuring is, nevertheless, recommended.

Organic farming with compost including animal manure requires three livestock units (3 cows or 15 goats) for 2 acres. This ensures adequate staple food (maize and beans) for a family of ten during one year. Animals needed to produce manure need to be kept in a boma near the compost pit. It is logical to assume that these will be the breeding stock, as they need to be watched more closely than the other animals. In addition some of these animals can produce milk for home consumption or for the market. Obtaining better breeding stock of milking cows can be financed from the sim sim surplus.

Strengthening of the subsistence base further includes broadening of the fruit component. For example, the mango varieties from the coast can be grafted on local understems. Also guava, cashew nut and macadamia nut should be grown more widely. Under organic conditions a better performance may be expected in terms of avocado yields. Fruits, not consumed by the household or by animals, may be sold in the market.

Finally, under the newly introduced conditions of organic farming, fruits and vegetables that are not commonly grown must be tested and tried out for their acceptance in house-holds or for the local market. These include, for example, sugar melon, melon, squash, pumpkin, and others.

5. INTRODUCTION OF AGRO-INDUSTRY

Provided sim sim production per location consistently reaches levels of one thousand tonnes or above, establishing oil mills at the locational or divisional level may be justified. The advantages of such a step are obvious. First, off farm employment for some 20 to 30 persons becomes available, whilst during the peak of the season this may be three fold. Also part time employment in the mill and on the farm merits consideration. Second, profits from the mill serve as investment in the process of development. They can finance service industries like transport, etc. Third, cattle feed (protein cake) is produced as a by-product of oil processing. Evidently, this will enhance the possibility of livestock raising in the various locations.

FUTURE ACTION

Whilst sim sim production, acquiring new skills through the schools approach, the construction of a network of waterpoints, strengthening of the

subsistence base, and the establishment of agro-industry will signify marked improvements in terms of viable farm income and enhanced food security, ultimately development of the livestock sector from an economic point of view will lead to the deciding step in rural development of Kitui and Machakos districts. It should, however, not be forgotten that the first four steps form the basis of development, and also represent the fallback positions of these areas in times of drought.

During the first (approximately 5 years) that the first four steps are undertaken, SASOL will undertake a study on how best to develop the livestock sector, including the perspective for sustained animal health, livestock marketing, a meat industry and a related leather industry. The study, as a matter of course, will foremost take into account the fluid situation that will be created by locations undertaking the first four steps.

FARMERS' COMMENTS

The previous text has given a rough sketch about the road to take. It is not complete, neither can it be complete until all the locations wishing to participate in the proposed venture have given their comments, their own vision of what they regard as development. Leading farmers are therefore urged to discuss these themes with their colleagues at the locational or sub-locational levels, and to forward their findings in writing to SASOL Foundation, Box. 14333, Nairobi. From that point onwards SASOL will come to the field to establish an ongoing dialogue regarding the out-standing issues, as well as assisting to provide necessary solutions to operational problems.