Sisal: Small farmers and plantation workers

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INTRODUCTION.

Sisal is a crop that has traditionally been produced on large plantations, which have been quite pleased to produce sisal fibre exclusively from the land utilised. On such estates the sisal leaves are mostly brought to central processing facilities where the fibre, comprising only 4% of the harvested leaf is extracted from the leaf suing wet processes. The waste remaining (96%) is either discarded causing environmental problems to water tables or used as a mulch in sisal fields.

In Latin America much sisal has been processed dry in the field using small machines called "Raspadoras"; often the sisal comes from large estates but some is cultivated by smallholder farmers.

With the economic pressure on sisal fibre production as well as the need to increase food production, achieve poverty alleviation and improve environments in the arid and semi-arid areas where sisal is best grown; new approaches to sisal farming need to be developed.

This paper indicates how this challenge can be addressed.

Sisal potential. The attached figure indicates the many potential ways in which sisal can be utilised.

It is therefore proposed that small scale cultivation and processing of sisal can therefore be practised to benefit from a range of the potential benefits indicated here. In particular at the first stages it is proposed that involved farmers should focus on:-

1. Production of fibre and the local processing of this for handicrafts and local products.

Hedge sisal is Shinyanga region of Tanzania

2. Sun drying of sisal waste to produce animal feed or Biofuels substrate, using the model developed in Eritrea. Intercropping of land between sisal rows for subsistence or cash crops.

Recent experience in East Africa and in particular Tanzania, Kenya and Eritrea suggests that small holder sisal production can be developed using:-

1. Hedge sisal grown around fields and along roadsides. (the Tanzanian sisal board estimate that over 10,000 tones could be processed in Northern Tanzania using this source)
2. Establishment of smallholder sisal farms with the rows of sisal being intercropped with other cash crops such as cassava, sweet potatoes, pulses, grains, vegetables, herbs, etc.
3. Plantations sub divided using the Katani model; where the estate lets its land to smallholders and the estate owners (Katani, Tanzania) provide technical assistance, harvest the crop, process the leaves and market the fibre. The estate charges the farmer for these inputs from sales of fibre and returns excess profits to the smallholder.

Sundried sisal waste for use as animal feed or Biofuels in Eritrea

OXFAM MODEL.

On the basis of the above experience a model sisal farmer concept is being developed in the Shinyanga region of Tanzania with the cooperation of the Tanzanian Government, Katani Ltd and Oxfam. This model is being developed as an agricultural scale up project and will aim to establish a 100,000 farmer operation in the region over 10 years.

Smallholder farmer on sublet part of Katani Estate Tanga. Tanzania

OXFAM HOUSEHOLD MODEL

1. 1000 000 households
2. Fifty percent al households participating
3. Farming Unit
   1-2 ha per household
   4 000 sisal plants/ha
   Time to harvest 2.5-3 years
   Row width 5-6 m
   Land intercropped with cassava, sweet potatoes, beans, herbs, grain crops, etc

FARM PRODUCTION

1. Yr 1 and 2 using hedge sisal
2. Year 3 using planted sisal plus hedge sisal
3. Inter-cropped crops and livestock fed using sisal feed
4. Intensively housed livestock producing of biogas with waste used as fertilizer

SUPPORT PROVIDED TO PARTICIPATING HOUSEHOLDS

1. Each village to have raspadora to process sisal leaves, as well as fiber washing tanks and drying racks.
2. Each village to have sisal feed drying areas
3. If cassava production involved engine to also be used to drive cassava chipper and drying area to be used to dry cassava chips.
4. One villager trained as para-extension officer with farm as demonstration farm.
5. One professional extensionist per 40 villages.
6. A sisal nursery per village run by school or women's group.
7. KATANI (commercial company) to cover sisal purchase, marketing, storage, combing and bailing.

BENEFITS AND BENEFICIARIES

1. Households increased incomes from sisal products $2 000 pa from yr 4 plus value of other crop and animal products.
2. Women and children's groups running nurseries, feeding livestock and producing saleable sisal fiber products.
3. National economy have increased GNP, export replacement and potential, Carbon trading.
4. Regional and national environment improved with reduced drought impacts.

Regional visits and discussions with involved parties have produced the following proposal for which Oxfam are currently sourcing funding.

Overall Conclusion

The financial appraisal and cash flows for the different village group of the Oxfam model sisal project indicate that using half the revenues generated from the sisal products alone would be sufficient to pay back the loans taken out by all the farming groups within 4 years.

The other half of revenues as well as income from other enterprises on the smallholding including intercropping and animal farming as well as added value potential of all products will be available to smallholders for living expenses and to finance other developments.

Clearly participating smallholder families could expand the size of their units in line with their capacity to manage the land and so increase the income generated.

It is anticipated that this project would have a significant effect on the local environment and provide a significant increase in income for participating farmers and the region in general.