



Evaluation of SOS Sahel Bees Products Trade Promotion Programme in Ethiopia

Full Report

Oxfam GB Programme Evaluation

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To be added

Except from a Chinese e-journal (March 06)

When opening the 5th annual conference of the Ethiopian Beekeepers Association, Ethiopian State Minister of Agriculture and Rural Development, Abera Deressa, said apiary would contribute its share in boosting the country's foreign currency earning as well as in the efforts to reduce poverty and ensure food security. The association, composed of professionals, is engaged in bee husbandry, research, development, work training processing and the marketing of honey bee products. Abera said the country's honey and beeswax development and marketing plan is being implemented. The plan is being implemented in areas exposed to food shortage with a view to achieving the Millennium Development Goals (MDGs) for poverty reduction and food security.

1. BACKGROUND

1.1 Overview

The Bees products Trade Promotion Programme has been operational since July 2003 in six woredas (districts) of the Amhara Regional state, Ethiopia. The project is managed by SOS Sahel and has been supported by the Royal Netherlands Government over three years until September 2006. The total budget of the project is 13,000,000 Birr (1USD=8.6 Birr) September 2006.

Since the beginning of the programme 6 primary co-operatives have been set up and developed by SOS Sahel and 2 further government initiated co-operatives have joined the programme. In June 2006, the donor provided a three month budget neutral extension (July to September 2006) at the request of SOS Sahel, in order to ensure the continued benefit of the project achievements and results through a proper consolidation. The distinguishing feature of the project is that it is the first commercial oriented project of SOS Sahel designed to improve farmers' entrepreneurial skills, add value to farmers' products, link farmers to new market outlets and create financially and institutionally viable farmers business organisation. The new departure through piloting smallholder market creation has created an opportunity for SOS Sahel to face new development challenges and go through a steep learning curve in supporting farmers owned agricultural marketing enterprise. Though significant progress was made in attaining the stated objectives of the project in a relatively short time much needs to be done to create a viable farmers organisation, which necessitates another phase of at least three-five years.

1.2 Project Aims

The programme is aimed at lifting beekeepers from income poverty by increasing the net income derived from beekeeping. It intends to create market for bees products through

- (i) organisation of beekeepers into commercial entity,
- (ii) production of value added hive products and
- (iii) creating market link between local producers and new market outlets.

1.3 Project Objectives/Output

The project followed a multi-component approach involving

- (i) creation of farmers beekeepers association,
- (ii) establishing collection and processing centres,
- (iii) facilitate farmer groups access to credit,
- (iv) linking farmers to new local and overseas marketing opportunities and
- (v) creating of self-sustaining apiculture resource centre.

A copy of the project Logical Framework is attached to give an overview of originally set assumptions, risks and achievement indicators. However, it is important to note that the evaluation team has not limited itself to indicators in the Logical Framework in assessing the project achievements, effects and impacts only based on the logical framework.

1.4 Purpose of the Evaluation

To assess the extent to which the general and specific objectives, outputs and targets of the project are achieved or in the process of being achieved.

1. To assess the effects and impacts of the project (direct/indirect, multiplier effects) on the
 - a) livelihood of the beneficiary farmers groups
 - b) long-term financial and institutional viability of the of farmers organisations (e. g. cooperatives and union)
 - c) regional and development policies and practices.
2. To draw key lessons from the implementation and management processes of the project and provide recommendations for the future course of action. The recommendation should include how a second phase of the project should be designed and implemented differently and what should be its focus and approach.
3. To assess the consequences of the project completion at the end of the current phase and propose possible remedial/ risk mitigation measures.

1.5 Components Evaluated:

- Formation and strengthening of farmers producers cooperatives/union
- Establishment of collection and processing centres, their effective functioning and linkages with credit.
- Improving farmers access to new market outlets
- Establishment of self-sustaining Resource Centre
- Improvement of the technical, business and marketing knowledge and skills of beekeepers and their institutions.
- Effectiveness of the overall project coordination and management including links and networking with other actors involved in similar sectors.

1.6 Evaluation Methodology;

The expatriate lead consultant in consultation with SOS Sahel country and field office developed the appropriate evaluation methodology, making particular focus on participatory methods that involve the major stakeholders of the project. It included a review relevant of project and policy documents, visits to relevant agencies including the donor and an end of evaluation feedback workshop at Bahir Dar.

The key discussants of project progress are formal and informal institutions with which the project has worked. For purposes of the review, these are divided between:

- (i) local, woreda and regional partner government institutions both technical and administrative:
- (ii) farmers as individuals and as members of cooperative management committee.

The evaluation team also meet farmers' from non-beneficiary woredas which serve as a control unit to measure project impact in the absence of baseline data. The interview participants specifically included:

- The SOS Sahel project team,
- individual farmers,
- farmers group,
- farmers organisations (primary cooperatives and the union),
- partner government institutions (at all levels) and the
- private hive products traders,
- other NGOs involved in similar undertaking

Assessment of the technical merit and appropriateness of intervention was made through a series of separate field visits to five of the six target woredas during the evaluation period. In particular, the evaluation team, with SOS Sahel and partner governments' staff, met:

- the individual beekeepers,
- members of the primary cooperatives,
- management committee of the union and primary cooperatives, and
- relevant officers of the regional, zonal and woreda cooperative commission.

In fulfilling the criteria above, the consultants interviewed a number of representative stakeholders. The premeditated questions were designed to trigger independent views and group discussion, allowing for participation by all present, without interference from the consultants or the project staff.

The interviews and field visits were arranged by Mulufriid Ashagrie, the SOS Project Manager. Information from the interviews is held in Annex 1. The participatory evaluation has generated qualitative information of relevance with respect to project progress and impacts in the absence of sound baseline data which is the case in this particular project.

1.7 The Report

This evaluation and report is produced and presented by the consultants, Susan Wren and Tom Deiters solely for the purposes of the terminal evaluation of the SOS Bee Products Trade Promotion Programme, and conducted as per the terms of reference held in Annex 4. The document assesses the progress made in attaining the stated objectives over the three year term, the overall impact, the level of success of specific interventions, and makes detailed recommendations concerning the proposed second programme phase.

2. EXECUTIVE SUMMARY

Project Findings and Recommendations (Aug 2006)

Measurable Indicators	Achievements	Challenges	Recommendations
Number of farmers actively participation in the programme.	6 co-operatives with 1,937 members. Five of these are so far registered as members of the Union, plus three government co-operatives, therefore the Union currently has a total of 2,108 members.	Demand for membership to the co-operatives in other woredas in the Amhara. Demand for membership to the co-operatives within the same woredas. The scale of this current (terminating) programme phase does not have sufficient resources, i.e staffing and financing, to allow for expansion in existing and new areas.	Replication of these existing models in to new geographical areas. A time-phased and target orientated programme action plan for this expansion and achieving the multiple activities during the second phase of the programme. Continue to enhance the activities regarding commercial and technical skills development
Gender balance	Introduction of top bar hives and training has been provided in the construction methodology. Hive production enables equal gender participation. (Traditional systems involve tree climbing which, socially, is not an acceptable practice for women).	Ratio of women to men participants is currently 1:100 (2,081 male and 27 women) This is predominately due to the traditional social system, men being the primary income earners within the family. The low participation by women obviously negatively affects their economic benefit from this programme.	Further increase in the up-take of top-bar hives fabrication, together with the development of high value and value-added bee products will start to address this issue. The extension of the programme could include the promotion of other marketable products form the harvesting areas, training in value-adding techniques, market development for these products
Co-operatives /Union developed through the programme	6 co-operatives set up by SOS Sahel 2 co-operatives instigated by the government Commitment by the regional government to replicate the project interventions in a further 20 woredas. Beekeepers in neighbouring woredas have started to organise themselves into marketing co-operatives The model created so far is replicable Government is willing to provide support to such structures, thus supporting long term future sustainability of these operations. Government propose 3 additional woredas in the Amhara region for priority inclusion. The Union is now registered and operational.	Additional co-operatives, with CPCs and processing centres, are require to satisfy the demand placed by producers and the government, and to harness the opportunities of the Amhara region. The establishment of the Union took longer than the initial timeframe due to the work burden of the government. As the region is large, the development of further co-operatives in other woredas will necessitate the establishment of separate Unions (once a critical number of co-operatives have been established).	Areas to focus on include; the strengthen of the recording systems, particularly the computerisation of standard reporting formatted to provide easy traceability to meet market and certification criteria; the development of Internal Control Systems; increase women participation through the diversification of the bee-products and the development of skills, facilities and equipment for value addition, also through the introduction of other commercial natural products into the programme. If funding is sufficient for the second phase, 7 further co-operatives have been prioritised for inclusion.
Number of Processing centre and Central Processing Centres (CPC) established	?? processing centres have been set up for each of the 8 co-operatives in the 6 woredas. 6 CPC have been established and developed in each of the woredas The government allocated land for the CPC's, The producers have provided voluntary time in the construction of the buildings, this level of participation has also been evident in the	The Amhara region is vast, although a further field office has been set up in Meket to strengthen the support to the farmers producers cooperatives, additional field offices and staff will be necessary as the programme expands.	If the programme expands in the second phase further field offices will need to be established to provide good guidance to the new co-operatives, and co-ordination and implementation of the activities. The new field offices are proposed to be in Debark for the Simeon mountain region, Tikil Dingay, Finat Selam and Bingna, close to Lalibela. An

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	<p>setting up and development of the operating systems. The members are enthusiastic about the progress of their co-operatives, they see them as unique and progressive operations, and there appears to be a high level of sense of ownership in both the development and the execution of the programme</p>		<p>increase in the staffing levels will also be required. The organisation and management of the non-bee-products should also be handled through this same co-operative structure.</p>
<p>Quantity of crude honey and wax sold through the co-operatives</p>	<p>Approx 115,000 kg of honey has been sold over the three year programme term: Yr 1 – 42,000 kg crude comb-honey, equating to 38,000 kg extracted honey Yr 2 – 53,000 kg crude comb-honey, equating to 47,000 kg extracted honey Yr 3 – 35,000 kg crude comb-honey, equating to 30,000 kg extracted honey Order are in place from buyers in the national market, from Yemen (through the embassy) and from Kenya (Honey Care Ltd).</p>	<p>20,000 kg of comb-honey is still in stock from the 2005-06 harvest due to shortage of packaging materials. Orders are all for small quantities due to the retail packaging constraints. Significant difficulty in sourcing packaging materials (glass or food grade plastic bottles and lids), The shortage of brood appears to be hindering the expansion of the supply base, average price is now 150 birr/brood. Training of the producers, trainers and extension staff in brood splitting and queen rearing is a necessary extension of the programme.</p>	<p>Increase the access of the producers to food grade buckets with lids A brief study is required to assess the quality, availability and cost of importing packaging material in the short to medium term and the requirement for up-grading the current national capacity to manufacture these materials to required level for storing honey for national/regional/export markets. Continued support will be required to assist the new co-operatives to develop the necessary packaging skills, design labels etc... Once certification is gained the labelling can include the relevant certification logos.</p>
<p>Number of hives introduced to the members of the co-operatives</p>	<p>The programme has trained the producers and co-operative managers in the construction of Top-bar hives. The farmers are keen to construct hives The Government is promoting the up-take of modern hives (although the more expensive framed type).</p>	<p>Traditional log hives still represent 85-90% of the total production. Not all traditional hive systems are environmentally sustainable. Shortage of forage for the bees in some areas. Sourcing and cost of materials to make hives is a challenge to most farmers. The government is promoting framed hive (based on the Langstroth hive), they are expensive, require wax foundation sheets, and for proper management need additional accessories as queen excluder and several honey-supers, but yield and quality can be higher than traditional & top bar hive.</p>	<p>Develop trail sites for potential specialist bee forage crops such as Borage, safflower, golden linseed, and organisation of harvesting and supply to achieve single flora honey 90% of production in the country is from traditional hives, as it will take a long time to alter the ratio with modern hives it is important to harness traditional production, and recognise the contribution sustainable traditional systems have on natural resource management. Develop sustainable certification standards to ensure good conservation management of the habitat is maintained. Actively promote hive production to women.</p>
<p>New markets entered And marketing mechanism employed.</p>	<p>The programme has been successful in the establishment and management of the supply chain and the necessary infrastructure to bring a marketable product from the rural areas to a new attractive market outlets. Tangible results: a) members are getting a better price returns for their honey and wax than before, b) they have become aware of improved beekeeping methods through training, c) high adopted of the Kenyan top bar hives</p>	<p>Level of supply has not yet created the economy of scale to reach regional and export markets at this stage. In terms of price, the national and regional markets produce better returns than export markets. Accreditation to EU country listing for bee products has not yet been achieved at the national level. Misconception by consumers regarding crystallised honey.</p>	<p>Expand the programme to increase supply of consistent quality grade honey to enable greater economies of scale to be reached and regional and export markets accessed. Market exposure of producers to gain awareness of realistic opportunities. Also participation in international trade fairs Union Resource Centre facilitated to provide members technical and certification support, promotion and marketing services.</p>

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	<p>d) quality of honey and wax has improved e) honey is now reaching retail outlets in Addis Ababa as retail-packet products, f) many more beekeepers are anxious to join the co-operatives, and g) the government is keen to see an expansion of the programme. Consumer awareness and a promotional campaign included; newspaper, TV and radio promotions and an exhibitions held earlier this year, promoting retail packed honey to over 200 supermarkets and grocery outlets in Addis Ababa national market outlets. The engagement of 2 commercial agents, Century Trading Ltd. and Beza Ltd. 1 small consignment has been made to Yeman, request for further supply. Retail shops in Bahir Dar, Gonda and Dessie Label and trademark developed and promoted Contracts signed between co-operatives and 3 exporters.</p>	<p>Involvement of producers in the marketing component is limited due to lack of access, experience and skills. Gov no skill in marketing, willingness of existing agents to co-operate is high but the willingness of others is poor as they were not sure of demand for the product etc. Expansion into export market will not be possible until sufficient economies of scale and rigorous upgrading of the quality standards for table grade honey have been reached, and the consistency in quality and supply can be assured. One major factor to the marketing of value-added bee products is the lack of packaging materials. Processors and traders have to import jars to retail pack their honey. This is expensive and makes a major impact on profit margins. No other value-added bee product is currently produced and retailed within Ethiopia.</p>	<p>Diversification of the bee-products through training and guidance, also equipment/facilities Continuation of consumer awareness campaign and professional product promotion. Maximise on the heritage symbol of the honey-bee, utilise the UNESCO sites for promotional activities, i.e location for interpretation/ resource centre. Support the efforts to gain accreditation to the EU country listing for importation of bee products. The application process is now in action, supported by SNV. A brief study of the packaging options and a cost effectiveness exercise to find solutions Diversification of retail presentation of packed honey (jar design, flora type, snack products). Linkages between the C-Union and ICIPE, to develop stingless bee honey, royal jelly and propolis, also sericulture (silk). Interactive website development. Internal Control System (ICS), fair-trade and organic certification, HACCP protocols etc developed to enhance competitiveness.</p>
<p>Provision of training and other capacity development activities</p>	<p>The up-take of training by the producer member has been particularly good and the result can be seen by the current output from the co-operatives. <i>Training has been provided in:</i> Production techniques Processing techniques Marketing, labelling and packaging. Co-operative management Bookkeeping and accounting Business skills development <i>Specialist input has been provided for:</i> ??? Information re-cognisance visit was made to Zambia to gain information about the traditional harvesting and exporting of honey to Europe and the US. Resource centre being developed to providing up-to-date technical and market information, internet access for members, linking producers</p>	<p>The skills, facilities and equipment for the extraction and processing of propolis, royal jelly and pollen to market standards does not yet exist. Farmers are not aware of the opportunities for their bee-products and other associated natural products opportunities Need for hive design and management for stingless bees. As the programme phase has been relatively short, there are deficiencies in the production, processing and packaging /presentation Need of the farmers to increase the brood sized and numbers. Improving the record handling is required to provide easy traceability to meet market and certification criteria. Internal Control Systems for organic certification have not yet been developed, although a market-orientated traceability system is almost in place. The quality of the honey and wax needs be further improved in order to successfully</p>	<p>Develop skills, facilities and equipment for the extraction and processing of propolis, royal jelly and pollen to market standards Training in hive design and management for stingless bees. Also in queen rearing and drone splitting; in the production of single flora honey. Use of the veteran expert scheme (i.e NCMP scheme via the Netherlands Embassy) for short term expert inputs (4-6 weeks) An assessment of the commercial potential for other natural products from the honey harvesting regions. Then include other marketable natural products in the programme. Provide the necessary training, specialist advisory and management support regarding the production, processing and packaging/ presentation for selected markets. Training of producers in sustainable harvesting from traditional hives to improve quality and sustainability aspects for organic/FSC certification. Improve record handling, specifically design a computer programme to standardise the format.</p>

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	with global information.	access attractive export markets. HACCP is not yet established and is a useful and highly recognised food quality standard, and marketing tool for export.	Training and management support on harvesting techniques and processing to improve the quality of the honey and wax. Also training in HACCP, to gain certification.
Enhancement of farmers entrepreneurial skills	At the end of this first programme term it clear that there are positive benefits gained in each of these areas. a) Raising bargaining position and competitiveness in the open market; b) Creation of human capital through extension and training services; c) Creation of viable and self governing farmers' organisations; d) Employment generation e) Sustainable and viable economic development. Producers have also gained understanding and acceptance of the co-operatives principals, values, and learnt how to manage the co-operative. Price received by the producers has increase significantly, from 5-6 birr/kg for crushed honey, to 11 birr for grade 1 comb honey. Additional benefits of the dividends provided through the co-operative sales to the agents, Beza and Century. Dividends range between 35-674 birr/season, based on no. shares the producer owns. There is a positive change in attitude towards the production and marketing. Producers are now aware of the greater market opportunities for quality honey and wax. They are keen to encourage fellow members to comply with these standards, to increase supply to export their bee products.	It takes time to change producers into entrepreneurs. marketing is one of the areas that require the most support input during the next programme term. The perception of export markets is that they are more lucrative than national and regional markets. Serving the national and regional markets will not necessarily be more financially attractive and easier than exporting to EU markets where standards are comparatively high until demand and price drops as these national/regional markets become more saturates. Producers need more market exposure in order to make informed business decisions regarding the development into the national, regional and international markets and to sustain their position.	More emphasis on training the producers and managers in marketing, entrepreneurial and business skills. Facilitating adequate market exposure (i.e through trade fair participation ¹ , trade missions, participation in market orientated seminars) for the producers, the co-operative managers and processing staff Sensitisation and training on requirements for fair-trade certification, the development of the required certification criteria, to include the design of the supply chain to ensure equitable benefit sharing. Market study for other natural product, such as spices (cardamom, black pepper, ginger, essential oils from these plus false pepper and false cardamom), sericulture, dried mushrooms and highland forest coffee. Samples sent to buyers and feed-back gained on demand and pricing. Training in production, processing and marketing will be required for the selected products.
Equipment provided to the co-operatives	The CPC's have been equipped by the programme with presses or centrifugal separators, some food grade buckets with lids for the producers to hygienically transport their comb honey from hive to processing centre, 200 litre plastic food grade drums for storing the separated crude honey for collection by the agent, weigh scales, some top bar hives plus some materials for the construction of further hives. The government have provide the CPCs with desktop computers and printers. The programme has also stimulated local artisans to make the protective clothing (nets,	The quality of honey is considerably better when processed by centrifuge rather than the press, not all CPC's have centrifuge equipment. The material for the coats and gloves is expensive and therefore the price of the protective clothing is too high for many producers. The producers are all keen to obtain food grade plastic buckets with lids to transport their comb honey to ensure that they have goods quality honey, meeting the requirements for the first grade payment But many farmers are unable to afford the price	Gradual replacement of presses by centrifuge equipment for the extraction of honey from the comb. This will improve the quality (flavour and texture) and the marketed product. The Union can be assisted to make bulk purchase of buckets, materials for construction of hives, nets and cloth (such as calico) for making protective veils and over-coats. Thus cutting current costs of these materials. Separate loan scheme (innovative to enable accessibility of the co-operatives to gain independent vehicle for transportation of bee-products to the processing centres) i.e hire

¹ International trade fairs such as participation in Biofach in Germany in February, Natural Products West in the US in September, and Biofach in Japan in December.

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	<p>gloves and coats). Addition equipment has been purchased by the Co-operatives. Retail packaging materials have been difficult to achieve and the programme has supplied the co-operatives with some locally produced plastic 250 and 500gm blue plastic pots for selling at the retail outlets in Bahir Dar and Gondar. All transportation from the processing centres to the CPC's is currently made by using the programme vehicles. The programme also provided the construction of the CPC's. The government provided the land for the sites.</p>	<p>of these buckets. Retail packaging is a perennial problem, no suitable jars are manufactured in Ethiopia at present and the import duty is over 35%. In order to gain independence and sustainability once the programme has been terminated, the co-operatives need to own their own, or seasonally rent, vehicles. The processing centres and CPC's are largely inactive for part of the year, outside of the harvesting seasons. This facility could be utilised to process/semi-process other natural products from the harvesting areas.</p>	<p>purchase (HP) with minimal interest. Application to JIKA, the Japanese support agency, regarding the purchase of vehicles under their specific vehicle support scheme for NGOs and development projects. Retail packaging survey. Bulk purchases with other honey traders (consolidate shipments). Lobby government to decrease the rate of duty on such packaging materials. Introduce other marketable natural products to the programme, advise and train producers accordingly so that they can be processed or semi-processed through the centres.</p>
Credit facility for producer members	<p>The provision of a credit fund of 1,2 million birr (approx 110,750 euros) total for the co-operative in the 6 woredas. This has been transfer and is managed by a micro-credit organisation, Meket Micro-finance Institute (MMFI); the co-operative members can apply to MMFI for loans of discretionary amounts at a minimal interest rate of 9.5%. Many of the producers already hold accounts with MMFI. There is demand by the co-operatives members for an expansion of this facility. Of the loan made, 96% have been re-paid by the farmers.</p>	<p>The programme aimed at creation of credit services only for cooperatives to purchase honey from individual member/non-member beekeepers. The credit facility will need to be extended and increased to cater for an expansion of the number of co-operatives targets by the programme over the next phase. Once the capacity has been developed for export, this facility would usefully be extended to cover trade finance (i.e pre-harvest or pre-shipping loans).</p>	<p>The application process could be made more flexible to allow application from individual bee-keepers, if it is found to be feasible. Rabobank and Triodos both invest in African micro-finance companies who also operate small saving schemes of rural producers. This could represent an additional route to extend the micro-credit facility for this programme. Ethical finance institutes and 'Green Banks' provide trade finance to small producer operation in LDC's, particularly if fair-trade certified. Application for carbon credit points for tree planting may be a feasible option.</p>
Instigation of international Certification	<p>Application has been made to BCS (German based accredited organic certification company) for inspection of the co-operative member's harvesting areas. Based on the existing capacity developed under this programme, traceability systems can be readily developed for each of the Co-operatives to meet the certification requirements for organic certification of grower groups (using the established Internal Control System – ICS). There is a nationally located international organic certification inspector.</p>	<p>The computerisation of the records will enable the co-operatives' to set-up recording systems for efficient supply chain management plus ICS development for certification. During the next phase the records need to be converted to English. Cost of inspection and certification is high. Producers do not presently have any awareness of the requirements for organic certification and the development and management of the ICS. Also the same case for fair-trade and HACCP.</p>	<p>Pre-certification management support and training will enable the co-operatives to gain organic certification of the land, the setup and develop the ICS. Subsidising the payment of the inspection fees for the first three years (i.e 100% in year 1, 75% in year 2, 50% in year 3 and year 4, the co-operatives pay 100%). Develop fair-trade auditing of agents and co-operatives, sensitise all parties and provide training. Gain Organic, FLO and FSC (NTFP) certification where possible/appropriate.</p>

3. FINDING OF THE TERMINAL EVALUATION

3.1 The Extent to which the Goals and specific purpose of the project have been attained

The design of this programme as a multi-component market-lead support facility, in terms of a) Ethiopia's history and the approach to rural development over recent decades, and b) the impact within a limited period of three years, can be readily seen as a successful, innovative and strategically augured approach. The overall assessment of the extent to which the goals and specific purpose of the project have been met to tangibly enabling honey producers of the Amhara region to improve their livelihoods through the production, processing and sale of bee products is also positive with regard to the point above.

Through an assessment of the project documents and records, and from the breadth of interviews held with the stakeholders and actors of the programme, the consultants were able to measure the degree of impact and to assess if this has been sufficient and appropriate to achieve the stated project purpose given the assumptions involved in the project design.

(i) Formation and strengthening of farmers producers cooperatives/union

With regard to the creation of farmers' beekeepers association, the programme has harnessed the established co-operative structure, in accordance with the government approach to agricultural development, but has taken a fresh approach to the governance particularly concerning the organisational management and business aspects. The programme has also worked progressively to enhance the skills base of the co-operative managers, government extensionists/trainers as well as the beekeepers themselves. However, it is necessary to appreciate that although the programme has been successful in progressing the development of these strong structure within the three year programme term, the capacity building of people realistically takes several year longer.

(ii) Establishment of collection and processing centres, their effective functioning and linkages with credit.

As a result, the establishment of collection and processing centres has been timely in terms of the resulting elevated supply and management capacity, and the building of these co-operatives as viable commercial ventures is relatively rapid. Important aspects include the management structure which includes a marketing and inspection committees who are responsible for ensuring quality, inspection of the comb-honey, set the pricing mechanism (reviewed twice/yr) according to the established first and second quality grades.

From the approach and the level of capacity building invested so far, the consultants confirm that the programme has followed the most appropriate and effective procedure for achieving marketable honey from these rural regions of Ethiopia. Fundamental to this is the training of producers/harvesters in improved beekeeping and harvesting techniques and setting the requirements of the processing centres to only purchase comb-honey (i.e not honey separated from the wax at farm level where contamination is almost certain), the provision of food grade buckets with lid to reduce the risk of post-harvest contamination between the hive and the processing centre, primary processing centres positioned within 2 hours walking distance of the producers where the comb-honey is received, graded and temporarily stored in cool dry conditions, the producers are paid (according to the established purchase price for the two-level grading system) and from where the comb-honey is collected and transported to the co-operative's central processing centres (CPC). The CPC have been equipped by the programme with basic processing equipment (presses and in some centres, centrifuges) and the separated honey is stored in 200 kg food grade drums for sale to the agent. The commercial agent collects the honey and the government collect the wax from the CPC, and payment is made at this point. Thus the Co-operatives have the benefit of FOB sale at this point, representing low market risk and liability.

The goals and specific purpose of the project with regard to facilitating farmers access to credit, have been achieved effectively through the provision of a credit fund of 1,2 million birr (approx 110,750 euros) total for the co-operative in the 6 woredas. This has been transfer and is managed by a micro-credit organisation, Meket Micro-finance Institute (MMFI) and is reported to be progressing smoothly; the co-operative members can apply to MMFI for loans of discretionary amounts at a minimal interest rate of 9.5% (most banks and finance institutions offer 20% interest for agricultural loans). Many of the producers already hold accounts with MMFI. The expansion of this facility would be necessary as the co-operatives grow both in

size and in technical requirements/capital items. Of the loan made, 96% have been re-paid by the farmers. This is a remarkable re-cover compared to very many other similar micro-credit schemes in the region.

(iii) Improving farmers access to new market outlets

The government up-take and promotion of public-private sector partnerships was a result of intervention made by the programme management. The growth of positive relationships between the co-operatives and the marketing agents is another indicator of the firm successful capacity building through the management and co-ordination provided by SOS Sahel.

So far the programme has linked farmers to new local marketing opportunities through the organisation of beekeepers into commercial entities and the facilitation of technical, management and infrastructural support, as mentioned, and by promoting retail packed honey to over 200 supermarkets and grocery outlets in Addis Ababa national market outlets. The latter was physically pursued by the SOS staff prior to the engagement of the commercial agents, Century Trading Ltd. and Beza Ltd.

As a result of limited supply of comb-honey at this current point, the programme is not yet in a position to actively develop international marketing opportunities. This should be a focus of a second programme phase. This also applies to the value addition of the hive products. Viable export markets exist for high grade honey and wax for delicatessen, pharmaceutical and cosmetic markets, for single flora and stingless bee honey, as for propolis and royal jelly. Due to the high national and regional price for honey, export marketing strategies should be orientated to harness these particular high value markets. Whereas the prospects of exporting retail packed honey to the US is relatively assessable, most European buyers only accept bulk honey in order to maintain a high level of control on food-quality and quality of packaging.

(iv) Establishment of self-sustaining Resource centre

The creation of self-sustaining apiculture resource centre has begun and a site has been allocated by the government, close to the ministry of agriculture offices in Bahir Dar. Construction of the resource centre will shortly begin. The equipping, management and capacity building of the centre will also be a focus of a second programme term.

(v) Improvement of the technical, business and marketing knowledge and skills of beekeepers and their institutions.

Technical and management advice and skills development of the producer members and CPC management staff of the CPC's has been provided through formal workshops, training courses, and job-related training. This has included; production and processing techniques; marketing, labelling and packaging; co-operative management, book-keeping and accounting; and business skills development.

The successful impact of this training and the affect of this well designed management and supply chain system can be clearly seen in the improvement in the quality and supply of marketable honey and wax compared to that of producers outside of the co-operatives supported by the programme, the smooth running of the supply chain and CPC's, and the capacity to now supply more attractive markets. The price received by the producers has also increase significantly, from 5-6 birr/kg for crushed honey, to 11 birr for grade 1 and 12 birr for grade 2 comb-honey. In addition, the operation of such a system allows for the development of bee products to export market requirements, and to certified criteria of relevant international standards such as Organic, FLO and FSC (NTFP)². Some of the SOS staff have visited an export bee product operation in Zambia to gain information about the design and development of the co-operative structure and the methodology used to gain certification and to reach export market position.

Although hive production is promoted by both the SOS Sahel and the government, traditional log hives still represent 85-90% of the total production. It is important to recognise that is necessary to harness this immense rural activity for its contribution to sustainable utilisation of the natural environment thus contributing positively to securing the welfare of the valuable forest and semi-arid land ecology. However,

² FLO – Fairtrade Labelling Organisation.

FSC – Forestry Stewardship Council, of which the certification would be according to NTFP – Non-timber Forest Products.

it needs to be noted that women do not participate in traditional honey harvesting (as it usually involves tree climbing) and therefore the promotion of hive production should be made particularly to women in the communities, as for the value addition to hive products.

The programme has trained the producers and co-operative managers in the construction of Top-bar hives. These have proved popular and effective, and some farmer and co-operatives are now making these hives for sale to members and other producers. However, the government is adamant about their promotion of the framed hive (based on the Langstroth hive). However, this is less popular with the producers as they are expensive, require wax foundation sheets, and for proper management need additional accessories as queen excluder and several honey-supers. Albeit, the yield and quality can be notably higher when compared to the traditional and the top bar hive.

The shortage of brood appears to be hindering the expansion of the supply base, during the interviews this point was brought out and strongly pressured by the producers. It was reported by the farmers that the average price is now 150 birr/brood. Training of the producers, trainers and extension staff in brood splitting and queen rearing is a necessary extension of the programme.

Good recording systems are already in place as a result of extensive training and guidance provided by SOS Sahel, with the support of government extension staff, providing a reliable basis for setting up ICS (Internal Control Systems) required for group certification to international organic standards (ISO65 for Europe, JAS for Japan and NOP for the US).

(vi) Effectiveness of the overall project coordination and management including links and networking with other actors involved in similar sectors.

The effects and impacts of the project interventions on livelihood of the target farmers, in particular and the people of the Amhara region is broken down into separate components, as follows:

Economic: The economic impact of this programme on the participating producers is one of the clear successes. The price received by the producers from local traders, prior to the programme, was 5-6 birr/kg for crushed honey. In addition, the traders are renown for cheating the producers on sale weights, and producers have had the additional struggle of travelling large distances to sell their honey to these unscrupulous dealers in the absence of any viable alternative. The current price received from local traders is still at this level. The price producer members now receive through the co-operative is (as mentioned above) 11 birr for grade 1 and 12 birr for grade 2 comb-honey. The co-operatives are buying from members and non-members therefore a wider impact is being felt from the increase in price in the areas where the programme is active. Although the rejection rate is considerably higher for the honey from non-members as they have not received any or the same level of training that the co-operative members have received from SOS Sahel. This serves as another indicator of the success of the programme. The members are also receiving dividend for the sale of the bee products. Most are reinvesting their dividend into expanding their operations and also the processing centres.

In addition to the price increase in the sale of the comb-honey to the co-operative, member farmers are enthusiastic in acknowledging the additional benefits of the dividends provided through the co-operative sales to the agents, Beza and Century. The dividends range between 35-674 birr/season, based on the number of shares the producer owns.

The expansion into regional and export markets has not yet been achieved as the supply has not yet reached the level where the national market has been saturated. Expansion into export market will not be possible until sufficient economies of scale and rigorous upgrading of the quality standards for table grade honey have been reached, and the consistency in quality and supply can be assured. Also it is not yet possible to export to the European Union until Ethiopia has achieved accreditation to the EU country listing for importation of bee products. This involves the government implementation of residue monitoring plans, setting maximum residue limits for listed industrial/agro-chemicals, adequate laboratory testing facilities and sufficient extension capacity. The formal application process is currently being enacted and the necessary systems developed by the government, supported by SNV.

Social: The co-operative structure is well established within Ethiopia and communities are positive about the co-operative approach as a result of long exposure and a lack of other viable alternatives. The government is also keen to promote the co-operative structure and is particularly pro-active in their promotion, construction and governance. There is a dedicated government department for this activity; the Co-operatives Promotion Agency of the Amhara Region. The setting up of these primary co-operative in rural areas, and the management of the union and primary cooperatives has therefore been relatively straight-forward and has received good support from the relevant officers of the regional, zonal and woreda cooperative commission.

Institutional: All records are currently physically made and compiled. Desk top computers have been provided to the Co-operatives by the government but are not as yet utilised. The computerisation of the records will enable a standard and co-ordinated approach to the co-operatives' recording systems, and allow for efficient supply chain management plus ICS development for certification. During the next phase the records need to be converted to English (Latin script) for use by EU certification bodies and for traceability reference for future potential international buyers.

Attitudinal/psychological: The information gained from the range of interviews held during the programme terminal evaluation displayed a positive change in attitude and psychology towards the production and marketing of bee products. Producers are now aware of the greater market opportunities for quality honey and wax. They are keen to encourage their fellow members to comply with these standards, to increase supply and to export their bee products. The perception of export markets is that they are more lucrative than national and regional markets. The producers are particularly happy with the output of the programme in terms of their financial returns and the increase in their business opportunities. They show a positive response towards their participation in the programme and ownership of the resulting enterprise in terms of its progress towards providing them a better and sounder future from the trade of bee products.

Environmental: SOS Sahel plans to instigate and develop organic (and FSC-NTFP) certification in the next programme phase. The criterion ensures environmental sustainability of the certified areas. The promotion of hive production also reduces the reliance on the construction of log hives. However, renewable timber can be used for both hive designs.

Policy & political: The programme has so far been successful in the eyes of the Co-operatives Promotion Agency of the Amhara Region. It has provided a valuable commercial element to the co-operative structure by introducing the techniques of modern honey production, business management and market orientated skills and capacity building, and linking the producers with viable and tangible markets. This was borne out in the interviews with government staff in Bahir Dar. The implication, therefore, is that there is strong prospect of government co-operation with the development of this programme into a second phase. The government representatives said that they are keen to see the programme scaling up to include all 26 woredas in the Amhara region. There is mention that the government has also committed to deploy over 100 staff to assist this development.

3.2 Present and likely future effects and impacts on livelihood

(i) Formation and strengthening of farmers producers cooperatives/union

For rural small scale producers to feasibly and reliably enter national, regional as well as export markets, and to sustain their market position, it is necessary that they operate within a well managed and co-ordinate producer group entities with an efficient supply chain system in place. In this regard, the co-operative structure promoted and progressed in Ethiopia, provides the necessary framework for these criteria to be fulfilled. The structures are more cumbersome than most private sector commercial outgrowers scheme or producer associations, but the governance and participation of stakeholders within these co-operatives in this programme is higher than the average private sector scheme. The action of this programme has been to effectively strengthen these municipal structures and build technical skills, management and organisational capacity within the co-operatives. The models created so far are replicable and, once further training and capacity building has been invested during the second phase, they will serve as unique and viable examples for further expansion of market-lead economic development in the rural regions of Ethiopia. Areas to focus on in the next phase of this programme include; the

strengthen of the recording systems, particularly the computerisation of standard reporting formatted to provide easy traceability to meet market and certification criteria; the development of Internal Control Systems; increase women participation through the diversification of the bee-products and the development of skills, facilities and equipment for value addition, also through the introduction of other commercial natural products into the programme.

(ii) Establishment of collection and processing centres, their effective functioning and linkages with credit.

The collection and processing centres provide the most appropriate facility for bringing good quality honey from the rural areas to major markets, and also handling application for credit. The administration of the latter is conducted by a micro-credit institution. As illustrated, the system of processing centres and CPC's enable members to achieve the economies of scale to reach more lucrative markets, and also allows them more opportunities for further product and market diversification. The further strengthening of these centres with additional equipment, plus the expansion of these facilities into new areas through the scaling up of the programme are the main focal areas for a second phase of support.

(iii) Improving farmers access to new market outlets

One of the most successful aspects of this programme is its impact on improving farmers' access to new markets. The co-ordination and consolidation of supply which creates sufficient economies of scale to reach larger and more attractive markets, the focus on improved handling and processing systems to achieve good product quality, and the linkage with supportive agents who provide consistent and fair price returns, have made a big impact on the economic returns from bee-product enterprise. As the programme expands, the further increase in supply of consistent quality grade honey will enable greater economies of scale to be reached and allowing viable, regular consignments to be made to regional and export markets.

(iv) Establishment of self-sustaining Resource centre

As the Resource Centre develops, its role in sourcing and providing up-to-date technical and market information, internet access for members, linking producers with global information will certainly be a big asset if well managed. The centres could also provide static demonstrations, permanent exhibition and interpretation materials and a retail outlet. The centre could also be attractively design and situated to provide an attractive eco-tourism facility.

(v) Improvement of the technical, business and marketing knowledge and skills of beekeepers and their institutions.

Through the programme, the farmer members have gained skills in the construction of top-bar hives. The farmers are keen to construct more top-bar hives but request assistance in sourcing the necessary input components. The farmers also wish to expand the honey capacity by producing and selling colonies, they require specific training, as previously mentioned, to achieve this. The issue concerning gender participation will be handled in section below.

The low participation by women obviously negatively affects their economic benefit from this programme. The expansion of the programme to include further increase in the up-take of top-bar hives fabrication, together with the development of high value and value-added bee products will start to address this issue.

More emphasis on training the producers and managers in marketing, entrepreneurial and business skills is also an important on-going activity.

(vi) Effectiveness of the overall project coordination and management including links and networking with other actors involved in similar sectors.

Economic: The future expansion into regional and export markets will need to be carefully planned and orientated in order to ensure the best and most feasible return to the member-producers. The effort to achieve export market standards for table grade honey, plus certification status to gain the non-physical value addition of organic and fair-trade certification, does require considerably more management, expertise and overhead costs than serving national and regional markets. The bulk price for standard uncertified crude honey in the national and regional markets is the same, if not more, as that for certified table grade honey in Europe. The national organic inspector, employed by BCS, Germany (an EU

accredited certification company) is a useful resource person for the setting up of the ICS and organic certification. SNV will utilise his services in providing training to other trainers in ICS establishment and management. There is also a national FLO office in Ethiopia who can provide advice and inspections for Fair-trade certification

Producing for the export market has the explicit approval of the national government and should be seen as a long term business venture to ensure future sales of large volumes of honey and other bee products. One major factor to the marketing of value-added bee products is the lack of packaging materials. Processors and traders have to import jars to retail pack their honey. This is expensive and makes a major impact on profit margins. No other value-added bee product is currently produced and retailed within Ethiopia. A brief study of the packaging options and a cost effectiveness exercise needs to be conducted in order to find solutions.

Social: The process of democratic election, collective decision making and planning has brought about a social bond amongst members and participants, a firm foundation for attaining self-reliance. The increase in incomes has also enabled some families to send their children to school. Please also refer to this section in 3.1

Institutional: The institutional framework developed through the programme enables the co-operative Union to gain certification through the development of the Internal Control System, also to achieve a strong supply chain for bringing forward bee-products and other potential commercial natural products from the same harvesting areas. The institutional aspects of the centres also provide the opportunities for member to increase their personal capacity, such as the construction of top-bar hives, access to protective clothing, food grade buckets, transport, improved markets etc., as well as training and experience in improved production and processing methods.

Attitudinal/psychological: The positive change in the producers' attitudes towards the harvesting and handling of honey is a clear outcome of the interventions so far. This was displayed during the interview sessions, and the improved quality honey and beeswax an observed output. Through engaging with the programme, the exposure to market mechanisms and experience of meeting the market requirements, producers have also gained a commercial approach to their operations and an improved their level of entrepreneurialism.

Through participation in this programme, as a result of the training and facilitation provided by SOS Sahel over this three year term, the producers appear to have a sound understanding and acceptance of the co-operatives principals, values. More particularly, the producer-members have learnt how to manage the co-operative and develop specific system to harness the necessary commercial principals to successfully operate within the private sector; to result in collective benefits to all members.

Environmental: Organic and FSC-NTPF certification ensures environmental sustainability of the certified areas. The certification criteria of both internationally recognised certification schemes cater specifically for non-timber forest products, such as bee products. There are active examples of successful certification schemes of this kind in African, Asia and South America. SOS Sahel has already conducted a investigatory visit to Zambia in order to investigate the commercial operation of an exporter who is utilising such schemes. There are clear market advantages of gaining this certification, such as price premiums and increase market competitiveness especially in the European and US markets. SOS Sahel has confirmed that they plan to instigate and develop organic / FSC certification in the next programme phase. The promotion of hive production also reduces the reliance on the construction of log hives. However, renewable timber can be used for both hive designs.

Policy & political:

Continued government support to the overall objectives, and assistance with the practical aspects of the expansion of this Smallholder Apiculture Development and Trade Promotion Programme, is assured by the departments that have engaged with the programme so far. This point is specifically endorsed by the FDRE, 2003 document, The new Coalition for Food Security in Ethiopia: Food Security Programme, Vol 1, and the recently endorsed Rural and Agricultural Development Policy document, which gives high

emphasis on increasing productivity of smallholders and expansion of agro-processing industries. The strategic documents give apiculture development more consideration for its potential to for income generation in areas where cultivated land is in gradual decline. It is also important to acknowledge the contribution of traditional systems as well as hive production in (i) providing incomes in remote arid and forested regions where there is little or no opportunities for other form of income generation, and (ii) is providing rural communities an economic reason for maintaining the natural habitat, particularly the more endangered forest ecologies.

3.3 Appropriateness and Effectiveness of the Project Strategies and Approaches

As a critical part of this evaluation, the consultants assessed the relevance and sufficiency of the project strategy and approaches in creating viable farmers owned agricultural business enterprise.

(i) Formation and strengthening of farmers producers cooperatives/union

From the assessment of the impact of the programme, achieved in the relatively short time period of three years, it can be concluded that the strategy for the design and implementation through the formation and strengthening of farmers/producers cooperatives and union, have proved valid and relevant to meeting the stated objectives. The established co-operative system/structure is embedded in Ethiopia's socialist history, and the programme's utilisation of this therefore has particular relevance in Ethiopia's context, especially concerning the continued government focus on maintaining the co-operative approach to rural development. It also appears that the participation of the farmers/producers has been very positive, and there is a strong willingness and openness to serving the co-operative (in terms of supply, management and business organisation). As a result of the SOS intervention, beekeepers in neighbouring woredas have started to organise themselves into marketing co-operatives and are requesting assistance from SOS Sahel.

The six co-operatives set up by SOS Sahel are in existence and functioning according to programme plan. These are as follows:

<i>Woreda:</i>	<i>Co-operative:</i>	<i>Number of members</i>
Gozamin	Tsedey	128
Danigla	Agunta	384
Bahir Darzuria	Yetanazuria Abeba	422
Gondarzuria	Biruh tesfa	180
Woreilu	Adey Ababa	312
Meket	Marotie	511

Three further co-operatives set up by the government, are also now included in the programme and are members of the Union:

<i>Woreda:</i>	<i>Co-operative:</i>	
Libokemkem	Addis Alem	134
Guangua	Andinet	136
Debre-sina	Limmesk	213

In summary, the total beneficiaries in the 6 co-operatives are 1,937 members. Five of these are so far registered as members of the Union, plus three government co-operatives, therefore the Union currently has a total of **2,108 members**.

The establishment of the Union took longer than the initial timeframe due to the work burden of the government. The Union is now registered and operational.

There is strong commitment by the regional government to replicate the programme interventions in a further 20 woredas. To stage this development, the woredas identified by SOS Sahel as having high potential for bee products suitable for phase two of the programme are the following:

<i>Woreda:</i>	<i>Co-operative:</i>
Debark (Simeon mountain)	Debark
Lay Armachiha	Tikil Dingay

TERMINAL EVALUATION OF SOS SAHEL BEES PRODUCTS TRADE PROMOTION PROGRAMME

Jabihtena
Bingna (close to Lalibela)

Finat Selam
Bingna

The government has also proposed 3 additional woredas in northern and eastern areas in the regions for priority inclusion in the next phase of development of co-operatives. If funding is sufficient for the second phase then this will mean the inclusion of 7 further co-operatives into the programme.

(ii) Establishment of collection and processing centres, their effective functioning and linkages with credit.
Comments as for 3.1.

The role of the Union in this programme is based on the established operating principals of government Union system. This Union, however, is a private sector owned and operated by the members of the co-operatives it serves. The expectation is that once the Union is full equipped and operational, it will provides the following services:

- Provision of services such as finance, training and market facilitation
- Establishment of central processing plant in Bahir Dar. It is planned that this will be instigated and developed in partnership with the commercial sector.
- Further grading of the bee products/value-adding and diversification of bee-products
- Promotion of bee products from the Amhara region
- Certification facilitation and co-ordination
- The Resource centre will be owned by the Union and act as it's service provider unit.

Application for credit is already made through the centres. It is appropriate that the facility is handled by a micro-credit agency, Meket Micro-finance Institute (MMFI), which assumes the engagement of trained management and good transparency/traceability. Credit is currently used by the members mainly for the construction of top-bar hives. Farmers also use their dividends for this purpose and for the purchase of food grade buckets.

(iii) Improving farmers access to new market outlets

The approaches adapted by SOS Sahel in creating viable farmers owned agricultural business enterprises is achieved through the organisation of beekeepers into commercial entities, using the co-operative structure, has been significantly enhanced by the provision of targeted training (i.e techniques to improve the quality and yield of the bee products, business and organisational management), the establishment and management of the supply chain and the necessary infrastructure to bring a marketable product from the rural areas to a new attractive market outlets. This has already brought about tangible results:

a) members are getting a better price returns for their honey and wax then before, b) they have become aware of improved beekeeping methods through training from SOS, c) there is high adopted of the Kenyan top bar hives and d) the quality of honey and wax has improved considerably (but has still to reach export standards), e) honey is now reaching retail outlets in Addis Ababa as retail-packet products, f) many more beekeepers are anxious to join the co-operatives, and g) the government is keen to see an expansion of the programme into all other woredas in the region.

A significant quantity of extracted honey, in total approx 115,000 kg, has been sold over the three year programme term:

Yr 1 – 42,000 kg crude comb-honey, equating to 38,000 kg extracted honey

Yr 2 – 53,000 kg crude comb-honey, equating to 47,000 kg extracted honey

Yr 3 – 35,000 kg crude comb-honey, equating to 30,000 kg extracted honey

20,000 kg of comb-honey is still in stock from the 2005-06 harvest, but order are in place from buyers in the national market, from Yemen (through the embassy) and from Kenya (Honey Care Ltd). These orders are all for small quantities dues to the fore-mentioned retail packaging constraints.

The evaluators make recommendations regarding possible improvements to the strategies and approaches for the second phase, in section 5. of this report.

(iv) Establishment of self-sustaining Resource centre

The involvement of the regional government in the development of this resource centre is a positive step in assuring good co-operation, supporting their technical and commercial understanding of the dynamic marketplace, and stimulating their interest in the advancement of the sector. As a private sector entity, the resource centres have the opportunity of becoming a professional run, commercially orientated service provider, fully responsive to the needs of the producer-members, as well as the demands of the marketplace. The resource centres will provide and ensure the long term capacity building and serve the co-operative members tangibly and effectively.

(v) Improvement of the technical, business and marketing knowledge and skills of beekeepers and their institutions.

As previously illustrated, the programme has been appropriate and effective in developing commercially orientated skills of the co-operative members, resulting in improved quality and value of the bee-products.

Due to the predominance of traditional seasonal fresh purchase of honey, there is a consumer misconception regarding the natural granulation of honey; consumers mistake crystallised honey as being adulterated with sugar.

Please refer to section 6. for recommendation for the expansion of this central aspect of the programme.

(vi) Effectiveness of the overall project coordination and management including links and networking with other actors involved in similar sectors.

This subject has been covered earlier.

3.4 Programme Management, Coordination and Implementation

(i) Formation and strengthening of farmers producers cooperatives/union

The level of project management and coordination that has been invested into this programme by the SOS Sahel staff is commendable. The commitment that has been shown throughout the three year programme term in supporting the development of the co-operatives in to marketing entities and achieving the overall stated objectives is commendable. The programme is founded on close co-operation and interaction with local and regional government, and developing the working relationships in managing, co-ordinating and implementing as a public-private partnership is a very positive, and on-going consequence of the programme

The management and co-ordination of the programme is made from the SOS Sahel office in Addis Ababa, and the regional office in Bahir Dar. As the Amhara region is vast, a further field office has been set up in Meket to strengthen the support to the farmers producers cooperatives. If the programme expands in the second phase further field offices will need to be established to provide good guidance to the new co-operatives, and co-ordination and implementation of the activities. The new field offices are proposed to be in Debark for the Simeon mountain region, Tikil Dingay, Finat Selam and Bingna, close to Lalibela. An increase in the staffing levels will also be required.

(ii) Establishment of collection and processing centres, their effective functioning and linkages with credit.

The construction of the CPC's and processing centres was commissioned through the support programme and a standard design provided by the SOS staff and implemented by the co-operatives (see photograph). Key staff have been employed and training in each of the CPC's comprising a book-keeper and one or two processing managers/staff. Each CPC also has a guard. The processing centres are managed and operated by volunteer staff during the harvesting seasons. Management roles have been allocated by the assembles of the co-operatives, to suitable volunteer within the membership. This includes the recording and payment systems. Records are collated by the full-time employed staff at the CPC's.

The co-ordination of the activities is currently made by the CPC's with the full support of the SOS programme staff. The implementation and the programme activities has been executed almost totally by the SOS programme staff. Credit facility is handled by MMFI, as discussed in previous sections.

(iii) Improving farmers access to new market outlets

The weakest area is currently concerning the farmers' access to new market outlets; this is predominantly due to the lack of availability of retail packaging materials, also the stage in developing the national market the economies of scale to serve the national and regional and export markets. One must also consider the short time the programme has run to develop new diversified bee-products.

The evaluators are impressed with the professional and pro-active level of management and co-ordination, invested by the SOS team. Activities, conducted with the participation of the co-operatives, have included introducing retail packed honey to 200 supermarkets and grocery shops in Addis Ababa, plus some embassies; arranging laboratory testing of samples; establishing two distributing agents in Addis Abba (Beza and Century), after advertising and canvassing for agents to work with the co-operatives; developing and promoting the label and trademark. In addition, small retail shops in Bahir Dar, Gonda and Dessie have been set up under the programme, and supplied and managed by the co-operatives.

Concerning the introduction of commercial agents, there was initial resistance by the established honey processors and traders to engage as purchasing and distribution agents with the co-operatives within the programme, as they did not feel that there was sufficient consumer demand for retail packed honey to take the risk of buying increased quantities. Once the two companies, Beza and Century, agreed to act as agents. SOS Sahel developed a tripartite agreement between the parties (primarily between the agents and the co-operatives, which includes SOS Sahel in the support role under this programme). Procedures for the selection of agents are currently being up-dated.

Consumer awareness and a promotional campaign was also undertaken by the SOS Sahel programme staff, which included newspaper, TV and radio promotions and an exhibition held earlier this year (06). Through initial research of the export market carried out by SOS Sahel during the first two years of the programme, contracts have been signed between co-operatives and three importers in Europe. No export consignment have yet been made due to the timeframe for developing sufficient economies of scale. Additionally, Ethiopia is not yet accredited to export bee products to EU countries (the process of preparing the application is on-going at this time of reporting).

(iv) Establishment of self-sustaining Resource Centre

Please refer to this section in 3.1

(v) Improvement of the technical, business and marketing knowledge and skills of beekeepers and their institutions.

Project management, coordination and implementation have been effective in developing commercially orientated skills of the co-operative members, resulting in improved quality and value of the bee-products. Please refer to section 6. for recommendation for the expansion of this central aspect of the programme.

(vi) Effectiveness of the overall project coordination and management including links and networking with other actors involved in similar sectors.

The existing political climate for the development of commercial operations in Ethiopia is still very much embedded in its historical socialist roots. The government is keen to continue the co-operative model and as a result of its perseverance and the support provided through the ministry of agriculture extension services and regional government agencies, the co-operative structures in Ethiopia have given rise to successful commercial entities, some of which are exporting to international markets (i.e Sidama Coffee Farmers Cooperatives Union (SCFCU) Ltd, Oromia Coffee Farmers Cooperative Union Ltd. and Kafa Forest Coffee Farmers Cooperative Union). The current policy and legal environment therefore (particularly concerning the existing Cooperatives Act) has shown that it is sufficiently accommodating to allow the creation of commercial oriented farmers marketing cooperatives. However, marketing not central to the regional government's focus (i.e regional government has no development strategy for bee products) and lacks strength in the necessary skills to adequately support this area. Policy adjustments are required to enable the commercial development of the sector, particularly concerning manufacturing/processing (such as reducing import duties on agricultural packaging materials).

There are many examples in the Eastern Africa region (as there are in the majority of developing countries in Africa and other parts of the world) of commercial alternatives to cooperatives that support the development of viable farmers business organisations. These include outgrowers schemes and producer associations. The main factors of the success of those that have reached and sustained regional and export positions are; a) the organisational management ability, aptitude, and b) the strength of the financial management and transparency systems. There are a number of different models that can be discussed and explored (see section 5), some offering useful and relevant lessons/learning points, but these two fore-mentioned factors remain the most important foundation for success.

From interviews with the programme staff and a review of the programme documentation for the administration, monitoring and evaluation systems, it appears that the systems are suitable for achieving the project's stated objectives, and the programme is well managed.

3.5 Degree of Participation and Ownership

(i) Formation and strengthening of farmers producers cooperatives/union

From the interviews held with the SOS staff, the beekeepers/farmers and managers of the CPC, the involvement of the stakeholders and participation of the farmers' beneficiary groups in the design and implementation of the programme has taken place and involvement has been at all levels. The researched and documented priority needs of the producers in this region of Ethiopia, their specific requests for support, together with the experience of SOS Sahel in working with rural development over the years has shaped the programme from its design stage through to the implementation of the activities.

The mid term review provided an earlier opportunity for stakeholders feedback, and its implication on the ownership and future sustainability. Farmers appear proud of their membership and there has been very good participation from all stakeholders in all of the programme activities and some farmers have assumed voluntary tasks at the processing unit. It is evident that as a result of the programme, there is real solidarity within the co-operatives and Union, and there is cohesion amongst the wider stakeholders in achieving a common goal.

So far the percentage of women participation is very low (i.e 3 women to 175 men producers in one of the interviewed co-operatives). This is predominately due to the traditional social system, men being the primary income earners within the family. For women to participate in bee products enterprise there needs to be either;

- a. the requirement for equal trade participation terms for women incorporated into an imposed fair trade criteria applied to all co-operative members,
- b. other forms of principal income generating available for men
- c. village based value-adding processing opportunities of bee-products for women.

To address these issues, the extension of the programme could include the promotion of other marketable products from the same harvesting areas, training in value-adding techniques, development of markets for value-added bee-products

(ii) Establishment of collection and processing centres, their effective functioning and linkages with credit.

As a result of the participatory approach taken, with large numbers of beekeepers and government staff within the targeted woredas, in developing the framework for the co-operatives, the degree of participation in the establishment of the collection and processing centres has been very positive. The government has allocated land, the producers have provided voluntary time in the construction of the buildings, this level of participation has also been evident in the setting up and development of the operating systems. The uptake of training by the producer member has been particularly good and the result can be seen by the current output from the co-operatives. The members are enthusiastic about the progress of their co-operatives, they see them as unique and progressive operations, and there appears to be a high level of sense of ownership in both the development and the execution of the programme.

(iii) Improving farmers access to new market outlets

The only areas that farmers are not participating strongly in is the marketing component. The producers as well as the government staff are committed, but lack market experience. All interviewed farmers have become aware of and deal in one way or the other with marketing issues for their products. Farmers realize they are better off, no more 'cheating' by private traders for one, and a better price is realized. They are, as a result, assuming more responsibility to the marketing of their products. Therefore, envisioning exporting honey from small scale producers is the long term goal within reach. The project has already shown how the quality of the honey can be improved in a matter of 3 years. Farmers have proven to be open for change.

In developing the marketing component it is worth considering that the producer-member needs to understand market criteria and gain market exposure, but the actual marketing activities need to be coordinated and carefully conducted by experienced representatives in order to harness and establish sound and attractive market openings to achieve the best returns for all the members.

(iv) Establishment of self-sustaining Resource centre

As the centre is in the early stages of development it is too early to evaluate this point. The planned implementation is to establish the resource centre as an independent commercial entity, owned and operated by the Union, which will ultimately be a service provider to the membership and act as the headquarters for the Union.

(v) Improvement of the technical, business and marketing knowledge and skills of beekeepers and their institutions.

During the three years of the programme's development, publications/manuals providing technical and marketing information and bylaws have been produced, and the website established. The producer-members of the co-operatives have contributed in the design and contents of these materials and therefore they are tailored to the information requirements and skills needs of the members. The training needs are assessed in collaboration with Woreda stakeholders and farmers themselves before the organization of the same. The degree of participation and ownership of the members in these aspects is good so far, but members are aware of the need for expanding the training provision to cover additional technical and marketing components, as previously mentioned.

The website is constructed to provide important beekeeping and bee-products information which can be downloaded by producers, processors and traders, researchers and other members of the commercial sector. Further development of the website is required for the commercial angle. Also, to develop it as an interactive site would enable it to become a marketing tool for internet sales. Information on setting up and managing the ICS, fair-trade and organic certification criteria, HACCP protocols etc, can also usefully be produced through this website facility.

(vi) Effectiveness of the overall project coordination and management including links and networking with other actors involved in similar sectors.

There is interaction at present with researchers at Bahir Dar University on product diversification. The programme could also develop links with the large independent research institution in Kenya, ICIPE, concerning Sericulture and the process for commercial diversification of bee-products (royal-jelly, propolis and stingless-bee honey). Developing linkages with other Apiculture research institutions in Europe may also prove useful. The Api-therapy Unit to be established in collaboration with Gondar University will provide an ideal facility for the development of therapeutic and nutraceutical products in the next programme phase.

3.6 Sustainability, Reliability and Exiting

(i) Extent to which the project experience and approach is replicated/scaled-up over a wider area or beneficiaries for wider impact.

The commitment by the regional government to replicate the project interventions in a further 20 woredas is a powerful indicator that the government, as well as the producer-member, see the output of the programmes as being reliable as a development tool, and integral to their own remits and operations.

Beekeepers in neighbouring woredas have also started to organise themselves into marketing co-operatives in recognition of the advantage of working through this type of co-ordinated and facilitated structure. These newly formed groups are hoping to be accepted into the Union, at least to sell their bee-products through the Union. This is an equally strong indicator that the programme has given rise to a reliable commercial farmers' organisation in the eyes of the producers, and has gained their confidence that it has a sound future. The agents have also seen the advantages of working through the structures developed under the programme and are co-operating closely with the programme in order to ensure the future sustainability of the commercial relationship so that there is a commercial viable operation throughout and after the final programme term.

With these remarks, and from the overall evaluation of this programme, with the additional modifications and implementation areas mentioned in the text in section 3, and outlined in section 5, it can be concluded that it is a effective and tangible model suitable for replication in the Amhara region and also other suitable regions of Ethiopia. In addition to bee-products, the model is also suitable for developing commercial operations for other agricultural and natural products with producer groups in rural regions of Ethiopia.

(ii) Extent to which the target groups remain active once funding has ceased.

Capacity building of the main actors and stakeholders within the co-operatives, and working to support the co-operatives, has been relatively successful in creating a strong supply chain. There are a few gaps in the skills base that need to be address in the next programme phase, as indicated so far and in section 6.

Training has been provided in production techniques, processing techniques, marketing, labelling and packaging, co-operative management, bookkeeping and accounting; and further input regarding business skills and marketing is required. Although a small consignment has been made to Yemen, the actors in the supply chain have little experience in serving export markets. The capacity building of the key actors in gaining experience of the marketplace, its characteristics and requirements, gaining commercial and entrepreneurial skills, and the commercial orientation to the management, are area to be addressed in the next phase of the programme for scaling up existing operations. Specialist input in some aspects of the training will certainly be required (i.e on harvesting and processing techniques for achieving export quality table grade, pharmaceutical and cosmetic grade honey, wax, propolis and royal-jelly).

The main auger to ensuring that the target groups remain active in the initiated activities once funding has ceased is the strength and success of the structure and systems in operating within market mechanisms to provide attractive and competitive³ returns to the producer-members. Once the model is established and the co-operatives are set up and working and sufficient skills transferred, the sustaining factor depends on the efficiency and ethical management of the operational, financial and technical aspects of the Co-operative Union. Therefore, to fully address this point, the focus on setting up strong, reliable and transparent systems continues to be a fundamentally important component of the programme

(iii) Extent to which the project is likely to be sustainable in terms of beneficiary acceptance and uptake of project interventions both individually and on a community basis, and the prospects for future community or private maintenance of activities.

The acceptance and uptake of project interventions by the beneficiaries, both individually and on a community basis, so far has been a 100% positive, there appears to be no resistance to change and an openness and wiliness to take up market orientated skills in order to achieve better returns from their operations. This is perhaps a natural response to opportunity for members of societies used to the dynamic environment of the modern world, but for the more conservative nature of traditional and isolated societies this response is a reliable indicator of the credibility of this programme in stimulating the foundation for sustainable commercial activities in this rural region of Ethiopia.

³ Compared to return from previous or alternative trading outlets and opportunities

Maintaining the capital items and extending the equipment and transport facilities of the co-operatives will become progressively easier as economies of scale develop and greater income is generated. This factor will need to be gauged when setting targets, and then measured when implementing future phase out strategies.

Therefore, with regard to sustainability, the programme has been successful in laying down appropriate and necessary structures and skills, but further time is required to develop this capacity, fill in the few areas of deficiency (as identified in this report) and for the operation to gain commercial experience before the point is reached where the programme can be terminated and the Union takes full responsibility in maximising its commercial opportunities for the benefit of its members.

(iv) Extent to which the project is likely to be sustainable in terms of Government agency involvement with the project

It has been confirmed to the evaluators that the government is committed to take over activities of the programme, which is an excellent result of the interactive approach developed by SOS Sahel. As discussed in this section, the government agencies involvement and acceptance of the capacity building aspects of the programme has been very good. As this is a commercial operation, the institutional and financial capabilities to maintain on-going support to local communities should be the private sector's responsibility of the Union. From the assessment it can be seen that the government has the will and ability to provide highly valuable support to the technical and management aspects of the supply chain development and the governance of the co-operatives. The commercial market development aspects will also benefit from government support, but this critical aspect of the operation need to be private sector managed and developed in order for the supply chain to be fully and immediately responsive to market conditions and demands. It is important for all actors to acknowledge that it is the fine tuning in this area that will make this programme a successful and sustainable commercial reality.

(v) Extent the primary cooperatives and the unions have developed the skills and authority in managing their business affairs and in their relationship with other partners

It is questionable that the cooperatives/the union have yet developed sufficient skills and authority to managing their own business affairs in their relationship with other partners, such as public institutions, the private and the NGO sector. This level of interaction and authority comes with sound experience and understanding of the wider arena in which this commercial venture currently operates within. The experience, aptitude and confidence will take time to develop and can reasonably be expected to be an outcome of a second phase of this programme.

(vi) Degree the results of the interventions are sustainable once external support has ceased.

• *Technical sustainability*

The technical skills invested so far in the co-operatives that have been established under this programme are ideal for this stage of developing these commercial operations. However, in order to scale up these operations and to serve wider more attractive markets, the capacity building of further technical skills are required, i.e: single flora honey, processing to EU food quality standards for table grade honey, gaining HACCP certification where possible, certification to organic, fair-trade standards (also FSC where appropriate), developing wax products (slow burning and mosquito repellent candles, industrial seals and cosmetic products initially designed for the African/Arabian markets), management and sustainable harvesting of stingless bee honey. Also, for the next stage of development of value addition and product diversification; increasing processing skills to achieve cosmetic and pharmaceutical grade honey and wax, processing of royal jelly and propolis (and pollen⁴ for regional markets). Also for diversifying retail packed products for national and regional markets (such as carton packed honey beverages as health drinks for adults and children, honey presented in different forms such as single flora, highland, lowland, honey on the comb, high health honey supplemented with additional propolis, honey retail packed in different ways such as the styling and size of the jars, in squeeze bottles for children's meals, etc...).

⁴ There is currently little competitive advantage of exporting pollen to western markets as the availability is already high and the relative price return, low. It is however a value nutraceutical for African and Arabian markets.

- *Financially sustainability*

The financial sustainability has been addressed in other sections. Important elements to repeat here include the need to develop structures and systems that provide sound financial traceability and operational management. The programme so far has set up the necessary structures for this, with the support of the government agencies, this need a further period of guidance and support in order to ensure their strength and durability in the commercial environment. This aspect also includes the need to develop innovative strategies for product promotion and consumer awareness, and pro-activity to move the current national market opportunity to one with greater potential to absorb large quantities of high value honey and wax (instead of the tej houses/processors being the present main commercial consumers of crude honey).

- *Institutional sustainability*

The co-operative structure developed under this programme is based on existing extensive models developed by the government. The support of the government in the construction, development and management of the programme is seen to be strong, therefore it can be considered that their continued support in this area will result in their long-term sustainability. The development of the co-operatives and the Union, as private sector institutions, will require on-going guidance from this programme for another three to five years, as previously mentioned, in order for the necessary skills and experience to be sufficiently developed.

- *Social sustainability*

The social sustainability of the programme can be measured in terms of;

- Raising bargaining position and competitiveness in the open market;
- Creation of human capital through extension and training services;
- Creation of viable and self governing farmers' organisations;
- Employment generation;
- Sustainable and viable economic development

At the end of this first programme term it clear that there are positive benefits gained in each of these areas. These will continue to be enhanced as the activities progress and the commercial orientation and capacity increases. The remaining challenge is addressing the traditional social framework of the country concerning the participation of women in commercial ventures. The current ratio of women to men participants is 1:100 (2,081 male and 27 women). This is due to the fact that bee-products represent the only or the main income generation opportunities of these communities. Therefore, as it is embedded in the tradition that control of the main income is the domain of the male thus the direct beneficiaries of the programme is male-dominated. In order to allow for change in this area it is necessary that the programme introduces secondary and alternative forms of income that are less attractive to men and more relevant to the skills and circumstances of women. For example, activities focused on value addition at the village level are more frequently taken up by women. Adding a second income generating crop such as spices, medicinal plant products, wild mushrooms and some crafts, may enable women to take an active and tangible role in providing income for the family. Therefore, widening the income generating activities of the programme will enable greater financial security for the participating rural communities.

(vii) Key gaps, the type and form of assistance required to create financially and institutionally viable farmers business organisations to effectively run operations after the termination of the project.

Please see section 6. for specific recommendations.

(viii) Sector specific phase out plan/strategy, which indicates processes, procedures and activities that will ensure the continued benefit of the project gains once external funding has ceased.

As this first three year of the programme can be seen as a pilot phase (or start-up phase) where a significant proportion of the programme finance is absorbed in setting up systems, training and investing in capital items, it is therefore not yet appropriate the measure success according to amount funding spent per numbers of direct beneficiaries. This first programme term has been success in provided sufficient foundation to scale up the activities to new geographical areas and aspects of product and market development. Therefore, the investment of time, expertise and finance will be multiplied over greater numbers of beneficiaries as the programme expands.

Realistically, before existing strategies can be fully engaged and then concluded, there is a need for further capacity building of the management and technical skills, and an upgrade of the facilities of the co-operatives through strategically placed training, guidance, market exposure and specialist advice. However, as recognised within the programme documents, it is necessary to incorporate the existing strategy in every part of the programme design and to consider it at each step of executing the activities.

For specific aspects of the 'Sector Related Phase-out Strategy' please refer to section 5.

4. CONCLUSIONS

According to the evaluation methodology interviews were held, using participatory methods, with the key discussants, the formal and informal institutions; the local, woredas and regional partner government institutions both technical and administrative, and the farmers as individuals and as members of cooperative management committees. Also with the SOS Sahel project staff, other NGOs and the traders/agents. Programme documents were reviewed and discussed, and also the records and accounting systems of the co-operatives. The majority of the observations and analysis points made in the mid-term evaluation have been followed through in this termination evaluation, although some areas have not been included as they have been found to be either no longer relevant or, in some cases, fully accurate. Based on the information and impressions gained during this termination evaluation, the consultants have formed the following conclusions:

4.1 Formation and strengthening of producers' cooperatives/union

Management and co-ordination skills, as well as technical capability, are critical to operating an efficient supply chain. To achieve this, the programme has harnessed the established government co-operative structure and developed the necessary management systems, protocols and skills for these entities to operate commercially in the bee-products sector. The resulting governance and participation of stakeholders within the co-operatives in this programme appears higher than average private sector schemes, a very healthy outcome of this first three year programme phase.⁵ The structure of these models created so far are replicable and, once further training and capacity building has been invested during a second phase of the programme, they will serve as unique and viable examples for further expansion of market-led economic development of bee-products in the remote rural regions of Ethiopia.

Areas to focus on in the next phase of this programme include; the strengthening of the recording systems, particularly the computerisation of standard reporting formatted to provide easy traceability to meet market and certification criteria; the development of Internal Control Systems; increase women participation through the diversification of the bee-products and the development of skills, facilities and equipment for value addition, also through the introduction of other commercial natural products into the programme.

Considering the significant lack of exposure to market forces and the limited experience in entrepreneurialism and management of commercial operations in rural Ethiopia, the programme has been particularly successful in progressing the skills base of the co-operative staff, the government extensionists/trainers as well as the beekeepers themselves in this relatively short three year programme. However, the capacity building of the producers, co-operative managers and processing staff will need a further period of consistent and on-going guidance and support to gain sufficient business and marketing skills and experience to navigate the way forward in national, regional and international markets and to sustain their position. Both evaluation consultants have had many years of direct experience of building commercial producer organisations in several countries in Africa and can personally bear out this point.

The Union is currently registered and in the process of being developed. It is private sector owned and operated by the members of the co-operatives. The operation base will be the Resource Centre and it will use this facility to provide its members technical, promotional and marketing support.

⁵ The co-operative structure has been promoted and progressed in Ethiopia, beyond that made in most other countries in Africa. Alternative systems for developing small producer schemes, such as private sector outgrower schemes, have not been encouraged by the government and thus not common in Ethiopia. Although often seen as cumbersome, these structures have already been shown successful in providing the necessary framework for organising large numbers of producers for commercial activities (there are several large co-operatives successfully operating nationally and some are serving export markets).

4.2 Establishment and functioning of collection and processing centres, and linkages with credit.

The collection and processing centres provide the most appropriate facility for bringing good quality honey from the rural areas to major markets and they are also instrumental in handling applications for credit. From the approach and the level of capacity building invested so far, the consultants confirm that the programme has followed the most appropriate and effective procedure for achieving this. The centres have been constructed and equipped by the programme with the necessary processing equipment. An FOB price is currently obtained from the CPC (the agent collects the honey and the government collect the wax and payment is made at this point), representing low market risk and liability at a return of twice that from the local traders.

The facilitation of credit to the producer members is achieved through the provision of a credit fund of 1,2 million birr, managed by a micro-credit organisation, Meket Micro-finance Institute (MMFI). The instruction of a specialist micro-finance institution to conduct this role is appropriate for this function and will allow for the building of other financial services to the co-operatives and its members. The administration of the loans is progressing smoothly, and is proving both an accessible and an imperative component of the programme in enabling the co-operative members to expand their businesses.

The further strengthening of these centres with additional equipment, plus the expansion of these facilities into new geographical areas are the main focal areas for a second phase of support. The centres can also play an important role in distributing information to the producer-members on market returns, product development and diversification activities, ICS and certification literature and training materials.

4.3 Improving farmers access to new market outlets

One of the most successful aspects of this programme is its impact on improving farmers' access to new markets. The co-ordination and consolidation of supply which creates sufficient economies of scale to reach larger and more attractive markets, the focus on improved handling and processing systems to achieve good product quality, and the linkage with supportive agents who provide consistent and fair price returns, have made a big impact on the economic returns from bee-product enterprise. As the programme expands, the further increase in supply of consistent quality grade honey will enable greater economies of scale to be reached and allowing viable, regular consignments to be made to regional and export markets.

The government up-take and promotion of public-private sector partnerships was a direct result of intervention made by SOS Sahel. The growing positive relationship between the co-operatives and the marketing agents is another indicator of the capacity building through the management and co-ordination of the programme.

Due to the high national and regional price for honey, and the present limitation in the supply of comb-honey, the programme is not yet in a position to actively develop international marketing opportunities. Therefore scaling up of the programme in the second programme phase is a fundamental requirement to expand and improve market opportunities. This includes empowering the co-operatives in the skills to achieve value addition to the hive products, i.e high grade honey and wax for delicatessen, pharmaceutical and cosmetic markets, for single flora and stingless bee honey, and for propolis and royal jelly. One major factor to the marketing of value-added bee products is the lack of packaging materials. A brief study of the packaging options and a cost effectiveness exercise needs to be conducted in order to find solutions. No other value-added bee product is currently produced and retailed within Ethiopia. The diversification of income generating opportunities including the development of markets for value-added bee-products, where women are traditionally able to be more active, will also help to address the gender imbalance.

There are clear market advantages of gaining organic (also FSC-NFTF) and far-trade certification, such as price premiums and increase market competitiveness especially in the European and US markets. SOS Sahel has confirmed that they plan to instigate and develop these certification schemes in the next programme phase.

4.4 Establishment of a self-sustaining Resource Centre

The resource centres have the opportunity of becoming a professional run, commercially orientated service provider, fully responsive to the needs of the producer-members, as well as to the demands of the marketplace, and ensure the long term capacity building of the centres to serve the co-operative members tangibly and effectively. Construction of the resource centre will shortly begin. The equipping, management and capacity building of the centre will also be a focus of a second programme term.

The involvement of the regional government is a positive step in assuring good co-operation, and assisting the government to develop its technical skills and commercial awareness.

In support of long term capacity building within Ethiopia, the programme could encourage the co-operatives/Union to become active members of the Ethiopia Honey and Beeswax Producers and Exporters Association. It is necessary for the bee-products sector to develop a national co-ordinating institutions of this kind in order to achieve an advocacy and lobby role for the sector, to assist the government to set up the necessary systems (i.e the residue monitoring, testing and recording for EU country listing for the exportation of bee-products), to promote Ethiopia on a regional and international basis (i.e hold a regional/international seminar to provide exposure of all actors in the sector to the opportunities and requirements of the marketplace, certification and new technologies.), and also collectively address the current challenges to the sector. The Resource Centre can then productively interface with the national association.

4.5 Improving the technical, business and marketing knowledge and skills

The successful impact of this training and the affect of this well designed management and supply chain system can be clearly seen in the improvement in the quality and quantity of marketable honey and wax compared to that of producers outside of the co-operatives supported by the programme, the smooth running of the supply chain and CPC's, and the capacity to now supply improved markets. The price received by the producers has also increase significantly, from 5-6 birr/kg for crushed honey, to 11 birr for grade 1 and 12 birr for grade 2 comb-honey. In addition, the operation of such a system allows for the development of bee products to export market requirements, and to certified criteria of relevant international standards such as Organic, FLO and FSC (NTFP)⁶.

The shortage of broods appears to be hindering the expansion of the supply base, during the interviews this point was brought out and strongly pressured by the producers. It was reported by the farmers that the average price is now 150 birr/brood. Training of the producers, trainers and extension staff in brood splitting and queen rearing is a necessary extension element of the programme.

Thought the programme, the farmer members have gained skills in the construction of top-bar hives. The farmers are keen to construct more top-bar hives but request assistance in sourcing the necessary input components. The farmers also wish to expand the honey capacity by producing and selling colonies, they require specific training to achieve this. The level of participation by women is very low due to pre-mentioned cultural reasons, the extension of the programme could therefore stimulate further increase in the up-take of top-bar hive construction together with the development of high value value-added bee products to start to address this issue.

Training has been provided in production techniques, processing techniques, marketing, labelling and packaging, co-operative management, bookkeeping and accounting; and further input regarding business skills development is required. However, there are a few gaps in the skills base that need to be address in the next programme phase in creating a strong supply chain.

More emphasis on training the producers and managers in marketing, entrepreneurial and business skills is also an important on-going activity. Further support should include exposure to international buyers, participation in technical and market orientated seminars and international trade fairs.

⁶ FLO – Fairtrade Labelling Organisation.

FSC – Forestry Stewardship Council, of which the certification would be according to NTFP – Non-timber Forest Products.

4.6 Effectiveness of project coordination and management on operational and attitude change

Through participation in this programme, as a result of the training and facilitation the producer-members have learnt how to manage the co-operative and develop specific systems to harness the necessary commercial principals to successfully operate within the private sector. The indicator of the positive change in the producers' attitudes towards the harvesting and handling of honey is that they now take a more commercial approach to their operations to meet market requirements and have achieved better quality resulting in higher income. At this point in time the membership base of the coops has an increasing trend because the members are gaining dividend and other benefits

4.7 Sustainability and Existing

It appears that the involvement of the stakeholders and participation of the farmers' beneficiary groups in the design and implementation of the programme has taken place at all levels. As a result, the establishment of the collection and processing centres has been very positive. The government has allocated land, the producers have provided voluntary time in the construction of the buildings, the participation of training has been particularly good and the government departments and their officers are supportive. As a result, the members are enthusiastic about the progress of their co-operatives and see them as unique and progressive, and there appears to be a high level of ownership in both the development process to date and these structures that have been formed. The mid term review provided an earlier opportunity for stakeholders' feed-back, and this also showed evidence that there is real solidarity within the co-operatives and Union. The government has also proposed expansion of the programme in all the 20 remaining woredas in the region.

Sustainability of these co-operative structures depends on the efficiency and ethical management of the operational, financial and technical aspect, therefore, the focus on setting up strong, reliable and transparent systems continues to be a fundamentally important component of the programme

The acceptance and uptake of project interventions positive, there appears to be no resistance to change and an openness and wiliness to take up market orientated skills in order to achieve better returns from their operations. However, as building sustainable commercial enterprise in rural regions is complex, both in terms of product and market development, and in capacity building every aspect of the supply chain, three years is not sufficient time to bring the public and private sector actors in this sector to a point where they have full capacity to manage and expand the commercial aspects of programme. A further term of at least three year will maximise the impact of the existing investment made by the donor and actors in this programme, as well as ensure the private and public sector expansion of these activities.

From the overall evaluation of this programme, with the additional modifications and implementation areas mentioned in the text in section 3, and outlined in section 5, it can be concluded that it is an effective and tangible model suitable for replication in the Amhara region and also other suitable regions of Ethiopia. In addition to bee-products, the model is also suitable for developing commercial operations for other agricultural and natural products with producer groups in rural regions of Ethiopia.

The programme donor requires separate audited accounts as part of the contractual agreement therefore the whole commitment has already been transferred. Letters from the embassy show that the audit reports have been approved. The terminal audit report is programmed to be conducting in Oct / Nov 06 to accommodate the finalising of expenses.

5. SECTOR SPECIFIC PHASE OUT STRATEGY

Item	Process (what to do)	Procedures (how to do it)	Activities (doing it)
5.1 Formation and strengthening of farmers-producers' cooperatives/union	Document methodology and procedures for skills and managing development of the co-operatives for future replication. Identification of skills, experience and management gaps.	Design next programme phase to accommodate continued skills transfer, plus new skills to cover identified gaps (i.e for product development and diversification), to co-operative staff before end of second programme. Include the provision for training on harvesting and extraction methods to improve the quality of the honey, and on sustainable traditional harvesting, other quality and supply issues	Manual of the methodology developed for replication. Include these areas in the development of the proposal for the next programme term
5.2 Management of the collection and processing centres, their effectiveness and credit handling.	Continue training farmers to run their own co-op (book keeping, sales, market liaison, harvesting protocols, buying procedures. Computerise the recording system. Agent provides greater incentive to improve honey quality. Improve farmers and co-operative operating capacity at harvesting period by Agent providing pre-financing.	Finalise first phase of training of trainer producers and extension staff. Send the accounts/ administration officers of the co-operatives on a computer literacy course if necessary. Propose in the next programme phase for a computer programme designed for the necessary recordings systems Participatory approach to developing pre-financing agreement (Agent & C-Union). Agent to collaborate with C-Union in establishing the quality standards & payment terms i.e, greater differentiation in incremental payment on quality to stimulate improvements.	Pre-financing agreement in place. Assist agent to make application for support from Ethical trade finance companies. Agent encouraged to have direct involvement with co-operatives, i.e feed-back on honey quality & sales Quality protocols drafted and distributed. Develop the proposal for the next programme term
5.3 Farmers access to new market outlets	Re-assessment of the market opportunities for the bee-products, and prospects for other products from the same harvesting areas. Preparation for certification and the setting up of the ICS ⁷ for each co-operative.	Marketing study to assess potential, demand & guide pricing for diversified products. Prepare documentation for certification. Proposed for the next programme phase training and equipment to develop higher grades of honey and	Specialist to make marketing study, samples sent to potential buyers. Training co-operative managers and farmer group leaders in ICS. Develop the proposal for the next programme term. All records produced in English and

⁷ Internal Control Systems, required for certification of producer groups

TERMINAL EVALUATION OF SOS SAHEL BEES PRODUCTS TRADE PROMOTION PROGRAMME

		wax and diversified products such as propolis, royal jelly	computerised.
5.4 Management and maintenance of the self-sustaining Resource centre	Construct and equip the Resource Centre according to the programme budget allocation. Finalise the first phase of the website design	Identification of the areas that will require developing in order to facilitate the resource centre as a service provider tool for the C-Union and its members. Identify skilled operating staff.	Include these areas in the development of the proposal for the next programme term
5.5 Enhancing technical, business and marketing knowledge and skills of beekeepers and their institutions.	Identification of skills, facilities and management gaps. i.e, honey extraction methodology (i.e adoption of centrifuge over presses), GMP (hygiene and food quality), access to adequate number of containers with lids (i.e x 2 per farmer), honey contains washed at the processing centres, improved storage of wax,	Participatory approach to information gathering, including the agents. Hold a seminar to expose key stakeholders to the full opportunities of the marketplace, certification and technical information. Co-operatives/Union are then more able to make independent decision and apply the knowledge, then can constructively learn from mistakes.	Include these areas in the development of the proposal for the next programme term. Organise a seminar for the bee-products sector with speakers from the international and regional marketplace, certification bodies and technical experts. Develop the proposal for the next programme term
5.6 Co-ordination and management of the commercial operation, including links with other actors involved in similar sectors.	Develop a design concept for the next expansion phase of the programme i.e, up to 10 (or so) per Union; new Unions to cater for co-op development in further regions; one resource centre per Union; resource centres linked to ensure good co-ordination and skills sharing and to achieve better market opportunity.	As above	As above

6. RECOMMENDATION FOR A SECOND PHASE OF THE PROGRAMME

6.1 Expanding existing structures and increasing new farmers beekeepers association

Due to the success of the first phase of the programme concerning the development of the co-operative system as the operating structuring and framework for the commercial beekeepers associations, the replication of these existing models in to new geographical areas provide the most appropriate and practical route forward. This is in particular regard to the support that the government is willing to provide to such structures, which directly impacts on the long term future sustainability of the commercial operations. A detailed, time-phased and target orientated programme action plan will be helpful for this expansion and achieving the multiple activities during the second phase of the programme. This can be modified, within the boundaries of the objectives and expected outputs, on an annual basis.

The diversification of the bee-products could be handled through the same systems. The organisation and management of the non-bee-products should also be handled through this same structure. However, as it was intended that the bee-products co-operatives are single commodity orientated, therefore there need to be careful consideration as to the potential of utilising or extending the same co-operatives structures to capitalise on the capacity invested so far.

The Union private sector owned and operated by the members of the co-operatives, and it is planned that it will operate from the Resource Centre, and uses this facility to provide its members technical and certification support, promotion and marketing services.

6.2 Expanding and developing the processing centres

Processing

It is recommended that the further strengthening of these centres will require the expansion of the existing facilities, additional equipment for new processes and further capacity building of the management systems. Example of some identified areas includes the following:

- Improving the record handling, i.e to standardise the reporting formatted as a specifically designed computer programme, to provide easy traceability to meet market and certification criteria
- Training and management support to establish and develop the Internal Control Systems for organic certification, and for the development of the market-orientated traceability system.
- Design the strategy to increase participation of women in commercial activities (i.e through the value addition of the bee-products and diversification of product type from the harvesting areas (ref. 6.3)
- Gradual replacement of presses by centrifuge equipment for the extraction of honey from the comb. This will improve the quality (flavour and texture) and the marketed product.
- Increase the access of the producers to food grade buckets with lids
- The Union can be assisted to make bulk purchase of buckets, materials for construction of hives, nets and cloth (such as calico) for making protective veils and over-coats. Thus cutting current costs of these materials.
- Develop skills, facilities and equipment for the extraction and processing of propolis, royal jelly and pollen to market standards (ref 6.3).

Quality and economy of scale

Through the activities of the programme during this first three year term, a huge step has been made in improving the quality and economies of scale in creating better market opportunities and incomes from the organised trade of bee-products from the Amhara region. However, there are several areas that will require further attention in order to achieve the full potential from the production and marketing of bee-products from this region. These are as follows:

- Further training is required in harvesting techniques and processing in order to improve the quality of the honey and wax⁸.

⁸ For example: Harvest only fully capped honey. Cut off the honey comb any contaminations visible. De-cap the honey comb with warm knife immediately prior to centrifuging. Make sure the centrifuge is completely clean and free of dust and water. Filter the honey as it flows in the container after centrifuging. Fill sterilized pots immediately. Fill pots to just under the rim. Close pots with lids, allow to rest for 4 days or more, skim off the wax particles and close pot. The honey is now ready for retail.

- Expansion of the programme into new geographical areas, inclusion of existing government co-operatives where well managed and located in suitable harvesting areas.
- Training of the most well managed (as first priority) co-operatives in HACCP, to gain certification to this EU food quality standard.
- Training in the making and the use of EM (effective micro-organisms) for the control of hive diseases.
- Training of the producers, trainers and extension staff in brood splitting and queen rearing
- Stimulate further increase in the up-take of top-bar hives by making the construction materials more affordable (as mentioned)

Transportation

- Separate loan scheme (innovative to enable accessibility of the co-operatives to gain independent vehicle for transportation of bee-products to the processing centres) i.e hire purchase (HP) with minimal interest.
- Application to JIKA, the Japanese support agency, regarding the purchase of vehicles under their specific vehicle support scheme for NGOs and development projects.

Packaging

- Due to the presiding difficulty in sourcing packaging materials (glass or food grade plastic bottles and lids), a brief study is required to assess the quality, availability and cost of importing these material in the short to medium term and the requirement for up-grading the current national capacity to manufacture these materials to required level for storing honey for national/regional/export markets.
- Continued support will be required to assist the new co-operatives to develop the necessary packaging skills, design labels etc... Once certification is gained the labelling can include the relevant certification logos.
- Certified products will need to be packed and stored separately to the conventional lines, and the cartons marked 'organic' and with the statutory certification information (i.e registration number, address and the certification company's name).

Information exchange

- The processing centres can play an important role in distributing information to the producer-members on market returns, product development and diversification activities, ICS literature and training materials.
- The processing centres also can collect production records from farmers, collate them and send them to the CPCs. This will provide the documentation for supply chain management and for organic and fair-trade certification

6.3 Product Development and Diversification

As already identified by SOS Sahel, there is plenty of scope for increasing income generation through product development and diversification. In order to achieve this to the point where the operations are viable and sustainable, the primary areas that need assistance are:

- Training in hive design and management for stingless bees. Establish separate handling procedures.
- Training in the production of single flora honey. Establish separate handling procedures.
- An assessment of the commercial potential for natural products development in the honey harvesting regions, then introduce other marketable natural products into the programme. Provide the necessary training, specialist advisory and management support regarding the production, processing and packaging/presentation for selected markets.
- Training of producers in sustainable harvesting from traditional hives to improve quality and sustainability aspects for organic/FSC certification.
- Enable the organic certification of the land, the ICS and the processing centres through preparation (pre-certification management support) and subsidising the payment of the inspection fees for the first three years (i.e 100% in year 1, 75% in year 2, 50% in year 3 and the following years the co-operatives pay 100% by which time they should be receiving premium returns from the marketplace).

- Diversification of retail packed honey, present 5 or 6 different varieties of honey, such as; single floras, winter and summer varieties, comb-honey, honey flavoured with cinnamon, nutraceutical honey with added propolis. Also children's honey and fruit juice drinks in cartons, non alcoholic adult refreshments / health drinks in three flavours in cartons (i.e orange, passion fruit and mango), different jar designs, squeeze bottle for children and small desert spoon sized plastic squeeze packs for school lunches.
- Develop links with national/regional/international research institutes to explore api-ceutical bee products for export. Explore the opportunity of retailing supplements through a commercial working relationship with the pharmaceutical company in Kenya, Universal Corporation Ltd.
- ICIPE, Kenya, has undertaken large projects to develop stingless bee honey, royal jelly and propolis, and has gain capacity in these areas, also in sericulture (silk farming is another potential natural products that could be developed in the same harvesting areas). Linkages between the C-Union within the programme and ICIPE, plus training held at ICIPE for the lead producers, processors and managers, would therefore be particularly constructive.

6.4 Market Developing

The impact of programme over this short three year term is demonstrated in the improved in the quality and quantity of marketable honey and wax, and the ability to supply improved markets resulting in increased incomes of the member producers. However, marketing is one of the areas that require the most support input during the next programme term. The priority areas include:

- Further capacity building of the producers, co-operative managers and processing staff in business skills and marketing orientation.
- Design the marketing strategy on clear terms regarding economic returns; i.e serving the national and regional markets will be more financially attractive and easier than exporting to EU markets where standards are comparatively high (and Ethiopia's accreditation to EU country listing for Bee-products must first be gained), until demand and price drops as these national/regional market become more saturates. Also a possibility of retail packing for US markets once certain quality aspects have been addressed and economies of scale have been reached.
- Facilitating adequate market exposure (i.e through trade fair participation⁹, trade missions, participation in market orientated seminars) for the producers, the co-operative managers and processing staff to enable them to make informed business decisions regarding the development into the national, regional and international markets and to sustain their position.
- Sensitisation and training provided on the market opportunities and requirements for fair-trade certification, the development of the required certification criteria, to include the design of the supply chain to ensure equitable benefit sharing.
- Website pages to be further developed, this may be supported by the International Trade Centre's (ITC) organic programme (currently focusing on website development for SE's), and linked to their global network, Organic Earth (www.organicearth.com). Linkages to this and with other organic marketing sites would be useful once exportable qualities have been reached.
- Useful source of Organic market information is contained in certain website; i.e Organic Trade Services, (www.organictradeservices.com), ITC has some very comprehensive reports on organic markets on its website (www.intracen.org/mds) 'The United States Market For Organic Food And Beverages', by Mr. Rudy Kortbech-Olsen, Senior Market Development Adviser, ITC. Goodness Direct is an online shopping/mail order site with over 50 fair-trade products, including honey (www.goodnessdirect.co.uk) Traidcraft also has a similar fair-trade and organic mail order facility which includes honey and wax products (www.traidcraft.co.uk).
- Potential buyers, who would be interested in developing long term trading relationships with companies within this program, are brought to Ethiopia to visit and advice the co-operatives and traders. This is a substantial method in ensuring that trading relationships are established on firm ground and that the necessary information is transferred direct to the producer regarding the technical requirements of the buyer.
- Use of the veteran expert scheme (i.e NCMP scheme via the Netherlands Embassy) for short term expert inputs (4-6 weeks)

⁹ International trade fairs such as participation in Biofach in Germany in February, Natural Products West in the US in September, and Biofach in Japan in December.

- Serious effort by the Export Board and other Government departments, supported by the programme, to promote Bee products (internationally and nationally).
- Develop fair-trade auditing of appropriate companies, promotion and training, also a national standard affiliated to the IFAT and FLO standards, as already sited.
- Develop trail sites for potential specialist bee forage crops such as Borage, safflower, golden linseed, and organisation of harvesting and supply to achieve single flora honey.
- Gain Organic, FLO and FSC (NTFP)¹⁰ certification where possible/appropriate
- Market study for other natural product, such as spices (cardamom, black pepper, ginger, essential oils from these plus false pepper and false cardamom), sericulture, dried mushrooms and highland forest coffee. Samples sent to buyers and feed-back gained on demand and pricing. Training in production, processing and marketing will be required for the selected products.
- Develop the resource centres to attract eco-tourism. Develop these centres in UNESCO sites, such as Gondar, Lalibela and Simian mountains, to promote the traditional and cultural identity with Ethiopia's historical fabric.

6.5 Credit Facilitation

Accessible credit facilities is one of the most common deficiency issues in all rural regions of Africa, and one of the most effective development tools in transforming opportunities of the residing communities.

This programme has made a tangible attempt to provide this facility to the producer members of the co-operatives. The credit facility will need to be extended and increased to cater for an expansion of the number of co-operatives targets by the programme over the next phase.

The programme aimed at creation of credit services only for cooperatives to purchase honey from individual member/non-member beekeepers. In the next phases the application process could be made more flexible to accommodate application from the individual member bee-keepers, if it is found to be feasible and need based

The use of an established micro-finance company to administer and manage the credit fund is recommended as the most appropriate route to continue. Rabobank and Triodos, mentioned below, both invest in African micro-finance companies who also operate small saving schemes of rural producers. This could represent an additional route to extend the micro-credit facility for this programme.

Once the capacity has been developed for export, this facility could be extended to cover trade finance as pre-harvest or pre-shipping loans. These can be sourced through ethical finance institutes and 'Green Banks' and are easier to apply for if the operation is fair-trade certified. Examples of these institutions include; Rabobank¹¹, Share Interest¹², Equal Exchange¹³ and Triodos¹⁴.

Useful fair-trade organisations to contact with regard to developing fair-trade export project with trade finance support are: Max Havelaar (www.maxhavelaar.no), Traidcraft (www.traidcraft.co.uk), TransFair (www.fairtrade.org.uk).

With regard to the natural resource management of the bee-products harvesting regions, application for carbon credit points (Tokyo Quixote Convention) for tree planting may be a feasible option. This facility provides grants for tree planting and other environmental 'goods'. The application process, however, is cumbersome and protracted; up-take in Africa has so far been very low compared to the number of such projects in South America and Asia.

¹⁰ FLO – Fairtrade Labelling Organisation.

FSC – Forestry Stewardship Council, of which the certification would be according to NTFP – Non-timber Forest Products.

¹¹ Example of their support of large organic co-operatives is the Langu Organic Farmers Co-operative Union in Uganda.

¹² Regional office based in Nairobi, Kenya. Works closely with Traidcraft

¹³ Based in the UK, works predominantly with Fair-trade certificate small grower operations

¹⁴ Based in the UK and Netherlands. There are examples in Ethiopia of commercial export co-operatives working with Triodos in conjunction with Max Havelaar (Sidama Coffee Co-operative Union and Kafa Co-operative Union)

6.6 Sector co-ordination and support

Co-ordination and support of the co-operatives developed through this programme can be most feasibly and effectively made through the Resource Centres. As mentioned in the conclusion section, the resource centre has the opportunity of becoming a professional run, commercially orientated service provider for the producer-members. The construction of the first resource centre will be achieved by the end of this first programme phase. The equipping, management and capacity building of the centre should be a focus of a second programme term, also the replication as self-sustaining apiculture resource centres for each newly established Co-operative Union (and utilising the UNESCO sites where possible, as mentioned above). Other aspects to include in the extension of the programme are:

- Co-operatives/Union to become active members of the Ethiopia Honey and Beeswax Producers and Exporters Association / develop a national co-ordinating facility of this kind in order to achieve an advocacy and lobby role for the sector, to assist the government (i.e. to set up the necessary systems for EU country listing for the exportation of bee-products), to promote Ethiopia on a regional and international basis and also collectively address the current challenges to the sector.
- The Resource Centre can then productively interface with the national association.
- A regional bee products seminar in Jan (during the heritage festival season to combine with Bee week). This may perhaps stimulate the establishment of a National co-ordinating body to conduct activities such as trade promotion, consumer awareness, lobby and advocacy, interaction with the government, etc...

6.7 Sector promotion and consumer awareness

The need to develop a marketing / consumer awareness campaign to develop the national capacity for retail packed honey is essential for the sector to exploit the latent potential of the national market. As mentioned in the Finding, the present consumption of retail packed honey is very low and misconceptions about the nature of crystallised/granulated honey (assumed to be adulterated with sugar – most honey is consumed as fresh honey purchased seasonally and as Tej) represents a significant hurdle to cross. Other trade barriers include the lack of adequate packaging materials, resistance by the Agents to expand the retail market for fear of over-supply, and the high demand for low grade crushed honey by the Tej Houses. Honey can be promoted through a number of initiatives:

- Expand the retail outlets through the instigation of the Resource Centres in the UNESCO sites. Improve the packaging materials, even if they have to be imported resulting in less profit return. Include the provision of promotional literature explaining honey, its texture and characteristics, health giving properties etc...
- Exhibitions present at national heritage events offering attractive information literature and free sample pots of honey, 'Honey 4 Health' T-Shirts and children's back to school kits endorsed with similar logos.
- Sponsorship of national children's event, charity races etc.. (also provide t-shirt, honey refreshment such as honey - sandwiches/yoghurt/biscuits/cakes/drinks etc)
- National post offices to launch a limited postage stamp range featuring honey and bee-keeping, as part of a heritage stamp collection.
- Promotional stand in supermarkets with promotional literature (as explained above).

Also the Export Board and other Government departments can make a serious effort to promote Bee products through their interaction with national and international agencies/organisations and events; and advertisements/presentations sponsored by the government through their multiple media networks.

Additional Notes:

Apiculture can contribute significantly to the conservation of the natural environment, particularly forests and semi-forested landscapes, through the incentive of income generation from the bee-products. Therefore a future programme phase could include training and guidance to the bee-keepers in the management of these ecosystems upon which the bees rely. Erosion is at a critical level in many parts of the region, therefore the programme could also encourage reforestation to provide more foraging habitat for the bees at the same time as addressing the worsening issue of erosion.

ANNEX SECTION

ANNEX 1. Example of Interviews Held with Stakeholders

Interlocutors

Gozamen Woreda

Name	Position
1. 1. Ato Kassa	Govrn't Cooperatrive Promotor
2. 2. Ato Gosha Zenne	Secretary general Coop, member farmer
3. 3. Ato Chane Shitie	Founding member

Bahir Dar Woreda

Name	Position
4. Metalign Girma	Food Securt & Disster Prevntn team leader
5. Tsige Girma	Extension team leader
6. Amare Ademe	cooperative promotion
7. Misganaw Adamu	Cooperative Manager
8. Adamu Shiferaw	Cooperative Chair man
9. Workie Engida	Member
10. Amsayaw Sinishaw	Coop. Secretary
11. Eniye Atalel	Coop. Accountant
12. Etenat Dagnaw	Storekeeper

Dangila Woreda

Name	Position
1. Hunachew Yimenu	Agriculture& Rural Developot Office head
2. Andargachew Ferede	Cooperative Team Leader
3. Sileshi Ferede	Animal Prod. & Forage Develop Expert
4. Wondale Genetu	Animal Prod. & Forage Develop Expert
5. Kassanesh Mengistu	Non- Agricultural Sector expert
6. Mekuriaw Teshale	Member Farmer
7. Degarege Mekonen	Beekeepers Coop Secretary
8. Dessie Ademe	Cooperative Chairman
9. Techalew Orion	Treasurer
10. Dessie Adem	Member Farmer
11. Mekuriaw Teshale	Member Farmer
12. Bitew Guadaye	Member Farmer

Meket Woreda

Name	Function
1. Tadess Akillo	Non Gor't (Union Chairman)
2. Fikade Mengesha	Non Gor't Marutie (chairman)
3. Birra Gedilu	Non Gor't Marutie Member
4. Beyene Worku	
5. Zewdu Mesfin	Non Gor't Marutie Memeber
6. Tesfaw Tebeye	Non Gor't Marutie Member
7. Tarke Dessie	Non Gor't Marutie Member
8. Kassaye Abitew	Non Gor't Marutie Member

9. Geremew Assefa	Government (Cooperative head)
10. Birhanu Asmamaw	Gov(Animal Prod & Forage Development
11. Belay Adimasu	Gov't (Agricultural Head)
12. Tewabe Kassa	SOS Sahel (NRM Expert)
13. Mulugeta Arragie	Marutie (Accountant)
14. Desie Belay	Marutie (Gardner)
15. Yimer Tamrat	Marutie (Gardner)

Interview 1. Tsedey Bees Products Development and Marketing Coop

The Tsedey Coop, in the Debre Markos, Gozamen district, started January 2006 when it was officially registered with government. There are 163 beekeeper member to date. Each new member must buy a share of 100 Birr and entrance fee of 10 Birr.

Present at the meeting:

Ato Goshu Zenne farmer and Secretary General of Tsedey Coop.

Ato Chane Shitie farmer and one of the founding members of The Co-operative

Ato Kassa is the government Co-operative Promoter

The Coop was in the make last year. But last year December (the mayor honey flow) it had not yet formalized and so it did not get the necessary capital for crop financing to buy the Okt-Dec honey flow. By Apr-Jun '06 the Coop was in existence and the SOS-Sahel Micro finance scheme financed the honey purchase

The Executive Committee Members of the Coop met already 34 times from its start in Jan '06. Minutes are neatly kept and guarded in the office at the temporary Coop Processing Centre. Members are informed through the minutes and twice a year a general assembly is organized.

The Tsedey Co-op Processing Centre has bought since January 2006 already 7 quintals (1 Quintal = 100kg) of crude honey (honey on the comb) during the lesser honey flow in April -June. Price to the beekeepers is 12 -14 Birr. The honey was sold to local consumers and private buyers with 5 Birr mark-up, thus the selling price was between 17-19 Birr.

The Tsedey CPC is still using a temporary processing and storage room at the house of one of the members. The municipality has approved the new structure and construction will be started soon. At first the municipality insisted that the building should be constructed of two stories since it was planned to border the highway. They have now been assigned a different location where they will soon build their standard processing facility as the photo of the Maket CPC (standard building used in the project).

Photo

This is the standard structure to be build in Debre Markos in September 06

Ato Chene:

How did you hear about this project and why did you join?

- I used to sell to private buyers here in town. I always felt I was cheated. First of all they did not weigh the honey properly and they always complained about the quality, so they paid a low price. This co-op promised that there would be a better price for a good quality so I joined. After I joined I received three times a training in beekeeping and proper harvesting by SOS-Sahel.

What is the most interesting and important thing you learned during these trainings?

Ato Chene:

- How to extract honey and wax and how birz is made (a honey soft drink). I learned about the importance of the market and how quality affects the price on the market. But it is unfortunate that

there are some members and non-member beekeepers who are using herbicides to grow their teff (local grain) crops. This should be addressed because it breaks the trust the co-op has in the members.

- The training talked about the marketing in Addis Ababa and in overseas markets. We are now trying to learn to produce for the export markets.

Goshua Zenne:

- The training and the functioning of the co-op stabilized the market prices in our area. We are now getting 12-14 Birr per kg raw honey (honey and wax); we used to get 6-8 Birr. This is a big achievement of this project and not only the members are benefiting from a higher price but also non members since this has driven the price up for all the farmers.
- The training also taught us how to make protective clothing. We are now in the process of making these ourselves, enough for the members and also to sell the surplus to other beekeepers (I could see a large quantity of material, ready veils and a sowing machine:

Thumb-nail size photo

- The Co-op buys only honey which has been weight. For this there are proper weighing scales at our Co-op Processing Centre CPC.

What is the different way of harvesting honey you are practicing now?

Ato Chene:

- After the training I know more about bees and modern ways of harvesting. The TBH and the Frame Hives are much better for this. With these hives it is easy to rid the bees of ant and spiders. I now have 5 FH, 2 TBH and still 13 traditional hives.

Goshua Zenne:

- I still have 18 TH but I have added 12 TBH and 5 FH to my apiary.

Goshu Zenne:

- 18 traditional hives TH, 5 frame hives FH and 12 top bar hives TBH. I am closely working together with the Rural Development Agency from the government to change to TBH completely.
- Frame hives and the additional parts i.e. queen excluder and supers are expensive to come by, although the government provides these Frame Hives on credit.

What do you consider a problem in this project?

Ato Kassa

- The beekeepers still need more support. We worry about the market and why the honey is not sold quicker. How can we penetrate into the world market with our honey?

Ato Zenne

- We also need carpentry training to produce TBH and FH.

After this interview the farmers wanted to show their apiary to the Project Coordinator and the consultant. See photos in the annex 3

Interview 2. Dangla Bee-keepers Co-operative.

The team could not visit or convene in the CPC since the store keeper was not in town. The local government officials were so kind as to accommodate a large number of project stakeholders for the duration of the interview.

A question directed to the Chairman of the CPC:

How did the project come about in this area?

- From the known beekeepers in this area 10 were selected to follow 5 day training in modern beekeeping facilitated by SOS-Sahel in 2002. These 10 beekeepers were expected to assist each

10 of their colleagues at home with the learned techniques. But on average they trained an additional 15 beekeepers in their home areas!

- The mayor issue was the use and management of bees in a Top Bar Hive as well as the use of Frame Hives.

What was the criteria to select these 10 “model” beekeepers?

Government Cooperative Promoter:

- We call a model farmer one who can read and write and who has an acceptance from his/her community. He is: a good beekeeper and capable to accept a new technology, capable to disseminate the information received!
- Of these early trainees four are present here today. The assignment was to make a link between the farmers, the government department dealing with Rural Development and SOS-Sahel and to promote the new technology to a big circle of beekeepers.
- When the CPC was formed these beekeepers were among the founding members in December 2003.
- In January 2004 the construction of the processing facility started and in May 2004 it was finished.
- The cooperative started with 250 members. Presently there are 277 members.

What are the advantages to become a member of the cooperative?

A farmer:

- Beekeepers will get a good price and are assured of a good market;
- It has a positive effect in modern beekeeping methods;
- Beekeepers need support for some years from SOS-Sahel and training to enter the world market;

Other farmer:

- good beekeeping practices are learned which will guarantee high quality honey;
- No more cheating and intimidation by private buyers.

What are the constraints of the CPC?

Cashier of Co-op, also a beekeeper and more farmers join in the discussion

- We have still quiet a lot of honey in stock.
- There has been a shortage of jars. Although this problem has been addressed it has not yet been rectified.
- The coop fears the coming Honey campaign (in December) if the stock has not been sold. There will be no money to buy new stock.
- The overhead of the CPC will be difficult to cover the coming year if honey stocks are not sold readily.
- Farmers need more intervention: SOS-Sahel has assisted not only farmers but also the consumer by increasing the quality of the honey.
- SOS-Sahel has introduced the TBH
- Good market opportunities and buying prices have close to doubled;
- Customers in Addis Ababa have requested for our honey, prove that it is appreciated;
- The price of wax has gone up from 50Birr/kg to more then 60 Birr;
- SOS-Sahel has proven to be successful in this program. Now we need to scale up so that the overhead costs come down.
- Yes, more farmers need to join the project
- We still need technical support such as Queen rearing, growing honey crops, tree nurseries and tree planting.
- We still have stock so the price should come down to sell it. Our overhead is still covered by SOS-Sahel so we should not sit on stock this year.

What do other farmers do with their honey? Are coop members better of in terms of the price they get?

Cashier:

- The price differs depending on the quality. Non members are more often then non unaware of the quality of their honey. Poor quality = low price. Our CPC gives 12 Birr for good quality honey also to Non-members. Only difference is that a non-member does not get a dividend at the end of the year. Our members are repeatedly trained.

How can value be added to non honey products?

Government Cooperative Promoter:

- Members of this cooperative are making bees-wax candles as well as foundation sheets¹⁵.
- Propolis is collected but not yet bought. Project Coordinator here explains that the University of Bahir Dar is doing research how propolis can be used in the cosmetics industry.

Farmer:

- There is a good national market for wax and export market for honey. We are getting more farmers to join. We should increase production. SOS-Sahel can assist us in market diversification.

Government Cooperative Promoter:

- There are a lot of farmer groups (in same program with SOS-Sahel) who are ahead of our group. We should encourage farmer to farmer visit. Groups visiting each other in order to learn from one another.
- Our farmers have changed after the training from SOS-Sahel their beekeeping methods. They are more aware of the need for healthy bee stock. They have all increased the TBH made from local materials (sticks and mud/cow dung) and some have started with FH.

When can this Coop function independent? What is needed to make this step?

Farmer:

- The export market is not yet in place, we would need more guidance as to how to export. Only if SOS-Sahel thinks it is enough..., then we can do it!

Chairman:

- We still have old stock, this is a problem we should get rid of the stock before we buy new stock
- Members are expected to get protective clothing

How do you get rid of the stock? How can you get protective clothing if SOS-Sahel does not give it?

Farmer:

- We will need more training from SOS-Sahel to understand the export markets.
- We have heard that in Gozamen beekeepers are producing their own protective clothing. Can we organize to go there and meet these beekeepers?

Other farmer:

- We still lack skills such as marketing systems and export standards and certification
- We should scale up, get more members

This meeting took two and half hours. After this we still could not see the CPC and drove to Bahir Dar for our 1400 hours meeting with members there.

Interview 3: Bahir Dar Beekeepers Co-operative

The cooperative at Bahir Dar was officially registered on January 20, 2004. At present it has 422 members. Government in conjunction with SOS-Sahel started the awareness campaign.

What do you consider the biggest benefits of this project for you?

Farmer:

- The price increase: before the start the price was 5-6 Birr, now we get 9-10 Birr and at the end of the year we hope to get a dividend on top of it.
- Technical training. With the TBH and the FH we can actively prevent swarming. And if needed we can make two colonies from one.

Another farmer:

- We have been supported in training in honey quality management and proper harvesting methods. We are now using food graded equipment to put our harvested combs in and we do the processing at the CPC with stainless steel equipment. Results: Better quality and good prices
- Also non-members are benefiting.
- This coop has created market stability by buying with scales and paying a better price.
- We have obtained a certain bargaining power because we are in the cooperative.

Government official:

- Modern accounting and bookkeeping techniques. Farmers receive training. This makes people here different from other cooperatives (i.e. carpentry, grain growers).

¹⁵ Foundation sheet of wax guides the bees to build straight combs in the frames or on the top bars.

TERMINAL EVALUATION OF SOS SAHEL BEES PRODUCTS TRADE PROMOTION PROGRAMME

- The wider the impact the more successful this project is. It is necessary to replicate it in other woredas.

Are you also buying from non-members?

Chairman:

- Yes, the CPC buys from non members as well. The same price is used as set by our executive Committee. But the non members do not get dividend paid.
- Non members should join and receive a training to improve on the quality of honey.

Secretary:

- We only accept comb honey, but well capped (sealed). Poor quality from non members is not accepted.

How is the project going?

- There are problems such as the stock we have at the moment.
- Our overhead is very high so we will need more honey from more producers. But the dilemma is last season's stock.

Government Cooperative Promoter:

- We need to attract more members. Presently the government is trying to replicate this successful project in other districts.
- The honey needs to be promoted locally, selling to consumers and private buyers.
- Not enough understanding of the export markets. Project needs further assistance in this respect.

Manager of the CPC:

- When we started we nearly doubled the price to encourage beekeepers to join and to sell to CPC. Now we try to promote honey locally. There is also the element of inflation.
- Can we get help in marketing strategies; how to avoid big stocks staying too long in our warehouse?

Government Cooperative Promoter:

- Since start of the project member beekeepers have not been cheated by private buyers. Private buyers now behave better seeing that farmers are better understanding the selling mechanisms.
- Member beekeepers bring all their honey to CPC.
- Members are starting to sell door to door in town. Local consumers are not used to seeing honey in a jar. Sales still slow.

When can this CPC become independent from SOS-Sahel or government intervention?

Chairman:

- We can do everything now except for the problems mentioned earlier!
- Until the export market is well established we will need assistance from SOS-Sahel, government and possibly other NGOs.
- Our Union, just established, should also help in this big issue of the export market.
- The Union will be able to process honey on a bigger scale and quality will be better. The Union will meet the export quality standards.
- Membership needs to broaden.
- Accessibility to modern beekeeping technology and equipment
- Government to disseminate Frame Hives.

Government official:

- The government is already introducing the modern hives. The farmers have the option to buy on a credit system TBH or FH.
- Government extension assist in technology dissemination: basically how to use the now equipment appropriately.

Farmer:

- We are receiving training from SOS-Sahel and the government and we try to integrate beekeeping with environmental issues as deforestation.

Secretary:

- Frame hives are heavy and expensive and the TBH are really cost effective.

End of this interview which took one and half hours.

Interview 4. Meket Cooperative Centre

Present members 483.

Quantities honey bought:

2003-2004 : 8081.3 kg

2004-2005 : 9188.5 kg

2005-2006 : 3234.9 kg However the big honey harvest season October to December has not yet taken place at time of this survey.

When and how did you learn about this project?

Farmer and founder member:

- I learned from SOS-Sahel the upcoming beekeeping training and wanted to learn more. SOS-Sahel was already active in other projects in our area.
- I joined in February 2004

How many hives of what type do you have?

Chairman:

- I have one of each type.

Another farmer:

- After the training and the establishment of the cooperative we are benefiting from this. I now have 8 TBH, 5 TH and 2 FH. I have replaced 10 traditional hives already.

Another farmer:

- I have been a beekeeper since long and so was my father and grandfather. Now I have 1 TBH and am constructing another one. I still have 9 traditional ones.

Another farmer:

- I have 2 traditional hives and want to construct one TBH.

Is there a beekeeper here who has replaced all of his traditional hives for the modern ones?

No one has changed 100%

A farmer:

- I had 10 TH and now I have an additional 2 TBHs and 2FHs. I want to have 100% TBH. It is recently that the change has been made and I have to see how things are going before I make the change over.
- We have been encouraged by SOS-Sahel. In the past we received 6-7 Birr per kg honey and now 12-13 Birr. So everyone is encouraged to make the change but we need more time.

Another farmer:

It is not easy to change from Traditional hives. This is what we have known for many generations. Now I have 2 TBH and 1 FH.

What is the most important achievement of the CPC?

Founding member farmer:

- Since 1996 SOS-Sahel in talking about modern beekeeping. They have provided the training in modern beekeeping. Now also the government is giving training.
- In 2003 the beekeepers Cooperative started. Farmers were encouraged to do more beekeeping.
- We are now getting higher prices because of established markets. No more cheating by private buyers.
- At the training we learned more about product diversification; wax and propolis. So I have more confidence and hope in my beekeeping then before

Another farmer:

- Product diversification. Before the training we sold only crude honey. Now we sell both honey and wax. Because of the training we are now also collecting propolis. Also non members in our area are benefiting from the price increases.

What are the problems? How can these be solved?

Farmer:

- Transport is a problem. Some farmers like me, live far from the CPC. To travel with buckets of honey is costly and often I have to walk the great distance with honey. Only after selling, can I pay for the bus back home.

TERMINAL EVALUATION OF SOS SAHEL BEES PRODUCTS TRADE PROMOTION PROGRAMME

- The honey starts to crystallize since I take time to come here to sell. This makes processing difficult.

Another farmer:

- The purchase price is higher now we are getting traders who don't have a license. They are becoming a nuisance.
- Defamation of our CPC by some traders. Although we can convince people of our good quality it is annoying.

Another farmer:

- Too much honey in stock. At present 26 quintals (2600 kgs).
- This honey was bought with micro financing scheme from SOS-Sahel, here in town. Now we cannot pay back. Can we buy during the next harvest season.
- The consumer buys our honey for 22 Birr/kg. In Addis Ababa this is competitive. Locally it is a high price and we are not selling enough.

Chairman:

- We are considering opening retail outlets in Dese, Weldiya and Lalibela.
- There is so much in stock but our quality is fantastic
- There is a lot of competition. Traders are selling for lower price
- We cannot sell to overseas markets yet.

These were four interviews in towns where Cooperative Processing Centres have been established. The Gozamen cooperative is at the same level as the one in Woreilu. Unfortunately time restricted the evaluators to visit that remote woreda at this stage. But information should be considered similar according to the Project Coordinator.

ANNEX 2. Explanation of the type of hives in use by the beekeepers in the Amhara Region, Ethiopia

Insert photo deleted for email sending

Example of the hives in use by all beekeepers. Photos taken at Ato Goshu Zenne's apiary

Traditional Hive or Log Hive. This is a cylindrical hive (the form of a hollow log) made of local materials (sticks/reeds and mud). The ends are closed and a small hole is left for the bees to enter and exit. During harvest one or both ends are opened and the combs with honey removed. This causes some destruction inside upsetting the bees. More often than none, honey together with stored pollen and brood is thus taken out of the hive. This has a negative effect on the bee population as well as on the quality of the honey. With this type of hive the beekeeper cannot make regular inspections at all.

Insert photo deleted for email sending

The apiary of Goshu Zenne in Gozamen with Top Bar Hives, Log Hives and at the back Frame Hives

Kenya Top Bar Hive: This hive is constructed as a simple box (usually the form of an inverted trapezium) with wooden bars with specific width. During harvest each bar can be lifted individually and inspected, if the comb contains brood or pollen it can be returned for further use by the bees. Each bar must have a provision to allow a wax strip (foundation) to be fixed along the middle, this induces the bees to draw comb straight and in the middle [of the bar] which makes inspection (and harvest) easy without disturbing the adjacent combs. This type can easily be made of local materials by the beekeeper him/herself.

Insert photo (deleted for sending)

The Frame Hive, on bottom the brood box, above the supers to be filled with honey only

Frame Hive: This is a modern hive, a rectangular box with frames inside. The bees must be induced to draw comb in the frames, which facilitates inspection and harvest. The frames full with honey can be centrifuged and with most of the comb intact can be returned to the hive for quick filling with honey. The bottom box contains the queen and brood and more boxes can be placed (called supers) above the brood box. Bees can now fill more frames with honey without being disturbed. This can be repeated as many times as is necessary during the honey flow. A queen excluder can be placed between the brood box and the supers to avoid the queen laying eggs in honey comb, this improves honey quality greatly. This type of hive needs precision carpentry work.

ANNEX 3. Technical Bee-keeping Advice

Some notes on (organic) bee keeping in the Amhara region:

“Honey as milk is the only source of food meant as food on the planet. The bees produce honey to rear their larvae until full grown bees.”

Organic honey should come from nectar collected by the bees from flowering plants, shrubs and trees growing in an area which has not (in the past three years), is not and will not be contaminated by any form of chemical pollution. This includes air, water and soil pollution caused by industry and unprocessed waste from urban areas as well as agricultural chemical inputs as there are synthetic fertilizers, pesticides and herbicides.

The distance to a possible pollution source should be at a distance of at least 5 km of the hive. (bees fly out to collect nectar and pollen in a radius of approx. 3.5 km from their hive with a 70% chance to return to the hive).

Construction of the hives

Hives should be constructed of natural materials as wood, mud or dried manure and should not include multiplex or glued wood, or poisonous materials (i.e. used pesticide cans). When bees are introduced to a newly constructed hive no fresh paint should be found on the outside and no paint to be used on the inside.

The Kenya top bar hive TBH may be constructed from any of the above mentioned material. The key to the TBH is the top bar itself. The width of the bar determines the centre-to-centre spacing of the combs which the bees should start building on a foundation sheet or on a strip of wax. For optimum management the bars running over the width of the hive should be no wider than 32 mm (+/- 1mm). The top bars should be sawn from dry wood at least 20 mm thick. The bars should be very straight and lay close to each other as neatly as possible. In the centre a groove can be cut in which a foundation sheet can be placed or in absence of this a strip of wax should be mounted through the middle. This strip or the foundation sheet should be placed about 3-4 cm from the ends because the bar rests on the sides of the box (+/- 20 mm), now leave a bee space of about 8 mm (or more) to avoid the comb to be attached to the sides of the box. The box can be constructed as a rectangle or a long box tapered towards the bottom. The advantage of the tapered construction is that the comb attached to the top bar can easily be manipulated without much risk of breaking-off (see below: management).

Diagram removed for sending

The opening can best be placed at one end. It should be approx. 40 mm x 15 mm. Not too big otherwise robber bees may enter and not too small so bees can move freely in and out. A small platform should be in front of the opening so ventilator bees can easily work there to keep the hive cool.

Some beekeepers prefer the opening in the middle of the hive which is also perfectly possible but never allow for more than one opening.

Frame hives. The frame hives are constructed following the “Langstroth” building principles. The comb is drawn by the bees in the frame which should be furnished by a foundation sheet. When manipulating the comb, it is firmly secure within the frame.

Bee management

During the year it is good to keep a regular check on how the bees are doing. Each beekeeper will have his/her own schedule to check on the bees. Good practice is to check every two to three weeks.

The different comb-types

In any hive the brood combs are located directly next to (or one or two combs from) the opening. An average hive may look like this: Adjacent to the opening a brood comb or a pollen comb (or a combination). This is followed by several brood combs. It is here that the queen resides. Further away

from the opening and the brood combs we find the honey storage combs. It is these that we want to harvest. In a frame hive we find the honey combs on either side of the brood, since the opening is location in the middle. With the frame hives we place so called supers above the brood box. These supers will be filled with honey if the colony is strong and actively collecting nectar.

The male bees or drones are produced by the workers when they become aware that the queen needs replacing. One identifies drone brood easily since the cells are larger than ordinary worker brood cells. The beekeeper may cut drone cells out of the comb to postpone the inevitable (see bee management).

The inspection

All movement should be gentle, never make shock movements and keep noise to a minimum. Use cow manure only in the smoker and NEVER plastic for fire (or fire starters).

The use of the smoker

Before you start, smoke all the hives in the apiary through the opening. Then smoke the hive you want to inspect a bit more. Wait a few minutes for the effects of the smoke to work. Smoke induces the bees to gorge themselves full with honey, just in case fire reaches the hive and they will have to take flight, in which case they need to be full with honey to sustain a long journey and starting a new hive! Once a bee is full with honey she is docile and less likely to behave aggressively. Honey is the stored food for the bee larvae and for the bees themselves.

Continue with the inspection

The beekeeper should open the hive on the far side of the opening. Start by knocking gently on the top bars. When these sound solid you can conclude there is honey on these. Pry the bar loose without disturbing the other bars. Once there is a small opening add a bit of smoke and wait for 20 seconds. Continue to take this bar straight up and once nearly out drop most of the bees back in the hive with one down shake. Introduce a little smoke in the hive. Most of the bees are off this comb and inspect it now. Gently turn the comb down side up to inspect the other side. If all honey is capped, this could mean the hive is ready to be harvested (robbed). Inspect the next comb (further away from the opening). If there is honey but uncapped, conclude the hive is not yet full. Place the comb back in exactly the same position as it was.

Now skip two or three bars and open a new bar. Proceed as above. If this bar contains brood, closely inspect how much brood and how much pollen and honey (on top side) of the comb. Is it even and capped or uncapped? Continue to inspect further towards the opening, now taking out each comb inspecting the evenness of the brood, looking for large numbers of drone cells and or queen cells and while at it try to locate the queen.

Once you have seen all brood combs now make your conclusion as to the functioning of the queen. Many drone cells means the queen is no longer as productive as before.

Construction of a few queen cells on underside of comb means workers are actively producing a new queen. Uneven brood means queen is not active enough. Lack of brood, queen is no longer laying or may even have died already. Have you seen sick or dead brood?

Take action according to your observations.

Above inspections should be done in every hive. Appropriate action should be taken.

The Harvest

Top Bar Hive. However above described inspections should not take place during the major honey flow. During this period the brood and the queen should be left in peace. Only full honey combs may be cut off the bars, and the bar not yet capped should be moved towards the brood. The other bars with less honey or less comb drawn) should follow and the empty (just harvested bars) should be placed at the far end. During this action use as little smoke as possible in order not to contaminate the honey with a smoky flavor.

The fully capped combs can be placed in a dish or container. These are ready for extraction. Leave enough honey for the bees to continue their work. Towards the end of the honey flow leave at least two fully capped combs for the bees as well as all the unfinished combs further away from the brood section.

It is good practice to obtain top quality honey to leave capped honey comb for an extra week (or two) so the bees can dehydrate the honey better.

Disadvantage is that the beekeeper must regularly empty top bars otherwise the bees may find there is not enough storage space and they may stop collecting or even abscond. This process disturbs the colony and disrupts nectar collection.

Frame hive. The best practice is to keep on adding supers above the brood box (with queen excluder) until the end of the mayor honey flow. Add an empty super when the last one is filled for 2/3 rds

The great advantage here is that the colony is the least disturbed thus able to continue their hard work of harvesting nectar and producing honey. Once the honey flow has stopped the bee keeper may now collect the supers in their totality, ensuring to leave at least one super for the bees to survive the winter months. The supers can be taken by using a bee escape board thus allowing as many bees to be saved from death.

Traditional hive. Open the hive at the far side away from of the opening. Proceed to cut away comb with honey only. Once you reach brood combs stop the 'robbing' and close the hive immediately as tightly as possible.

The disadvantage here is that the harvester has to cut away newly drawn comb not yet filled with honey, honey comb with young honey not yet capped and s/he may even (unintentionally) cut away brood-comb. The colony is most disturbed when residing in this type of hive. As a result the harvested quantity may be low, the bees may get very aggressive and/or abscond.

Consider to move the colony from a traditional hive to a TBH of a FH. Open the traditional hive along the length. Cut loose each comb with brood and place this comb in the extra constructed frame on the top bars and attach with thin metal wire. Make very sure the queen is moved with these brood combs. Now close the TBH with all the bars and allow the rest of the bees to enter their new home through the opening on one of the long sides. Once they are all in burn the traditional hive to avoid the bees from returning to their old home!

Extracting top quality honey

Harvesting of honey is the most important factor determining the quality. Keep honey from traditional hives and any honey containing pollen or brood or not-yet being capped separate from the export honey. What follows is advice for export quality:

The harvest:

1. harvest only from TBH and FH
2. harvest only fully capped honey
3. leave honey in hives at least one month after capping (to reduce moisture content).
4. Remove with knife any visible contaminations from the honey-comb

Processing:

1. Extract only honey from capped combs;
2. de-cap the honey comb with warm knife immediately prior to centrifuging;
3. make sure the centrifuge is completely clean and free of dust and water;
4. filter the honey as it flows in the container after centrifuging;
5. do not warm the honey excessively (will speed up cristalisation)
6. fill sterilized pots immediately after sterilization;
7. Fill pots full just under the rim;
8. Close pots with lids;
9. allow to rest for 4 days or more;
10. skim off the wax particles and close pot. Ready for retail.

The time between the harvest and extraction must be as short as possible but definitely done within two or at the most three days.

Once the honey is in the sterilized pots without having to be warmed up, the time between closing the jar and the honey beginning to crystallize may be several weeks. Thus the honey should be retailed within that period. The purer the honey the longer it will take before it will start to crystallize.

Bee management

When the workers are no longer happy with the activities of the queen, they will begin to produce more drones than normal. As a bee keeper you can decide to cut away the drone cells and thus postpone the process for a while. But now the bee keeper should be aware that something is amiss in the colony. First try to locate the queen and inspect her. Is she old and looking tattered then she needs to be replaced soon. Is the queen fine but is the colony crowded then we can split the colony to allow for more space. Check also if there is enough space for honey storage.

Also consider if there is enough food available in the hive and or in the direct neighborhood. Consider allowing the bees to rear a new queen. Leave one healthy and strong looking queen cell to grow while taking the other queen cells off the combs. Normally the new queen will fly out, be fertilized and return to the hive. She will now battle with the old queen and soon the colony will have a new queen! The beekeeper may assist and kill the old queen so as to pave the way for the new queen. If the old queen is still strong she may force the new one out who will then take a large number of workers with, leaving a weaker colony than before.

Avoid absconding. Absconding often is the result of a management failure. The bees may be too crowded, they may be hungry they may feel the threat of a predator (chickens and bees do not go well together) or the queen may not be active and the workers may have chosen to produce a new queen. Two queens is impossible so then one part may take flight with the new queen

Colony splitting allows a strong over-crowded colony to produce two colonies in two hives.

Queen rearing and killing the old queen is also a method to avoid absconding.

Feeding the colony in times of low food supply with sugar syrup and taking the threat of predator(s) away from the hive.

Moving bees. Bees must be moved in the early hours of the evening when the entire colony is inside the hive, busy with cleaning, making honey, drawing out comb and ventilation. The opening should now be closed preferably with a single newspaper sheet. The hive with its contents should now be moved at least 3 kms from its original place. The newspaper can now safely be removed from the entrance and the bees will wake up in a new and hopeful nectar rich environment. If a hive needs to be moved within the apiary/compound one can move the hive 1 meter every other night until the final destination has been reached.

ANNEX 4. Terms of Reference

The purposes of the terminal evaluation are:

1. To assess the extent to which the general and specific objectives, outputs and targets of the project are achieved or in the process of being achieved.
2. To Assess the effects and impacts of the project (direct/indirect, multiplier effects) on the a) livelihood of the beneficiary farmers groups b) long-term financial and institutional viability of the of farmers organizations (e. g. cooperatives and union) c) regional and development policies and practices.
3. To draw key lessons from the implementation and management processes of the project and provide recommendations for the future course of action. The recommendation should include how a second phase of the project should be designed and implemented differently and what should be its focus and approach.
4. To assess the consequences of the project completion at the end of the current phase and propose possible remedial/ risk mitigation measures.

Components to be Evaluated are:

1. Formation and strengthening of farmers producers cooperatives/union
2. Establishment of collection and processing centers, their effective functioning and linkages with credit.
3. Improving farmers access to new market outlets
4. Establishment of self-sustaining Resource centre
5. Improvement of the technical, business and marketing knowledge and skills of beekeepers and their institutions.
6. Effectiveness of the overall project coordination and management including links and networking with other actors involved in similar sectors.

Evaluation Questions and Issues;

The Extent to which the Goals and specific purpose of the project have been attained:-

- Assess the degree to which the goal and specific objective of the project and outputs of the various components are achieved/ in the process of being achieved: **a) Assess the** progress towards achievement of project purpose(s) against all measurable indicators originally proposed, including an assessment of project records as a means of monitoring progress b). Assess the extent to which specified Outputs have been produced by the project and the extent to which these have been/are necessary, sufficient and appropriate to achieve the stated project purpose given the assumptions involved in the project design and highlight any factors which have especially assisted or impeded production of Outputs.

Effects and impacts:-

- Assess the present and likely future (intended and unintended) effects and impacts (economic, social, institutional, attitudinal, psychological, environmental, political, policy) of the project interventions up on the livelihood of the target farmers in particular and the people of the Amhara region at large.

Appropriates and Effectiveness of the Project Strategies and Approaches:-

- Examine the continuing validity and relevance of the project design and implementation processes towards meeting the stated objectives of the project, and recommend possible improvements for the next phases of the project.
- Review the relevance and sufficiency of the project strategies and approaches in creating viable farmers owned agricultural business enterprise.

Project Management, Coordination and implementation Environment:-

- Review the project management, coordination, administrative, monitoring and evaluation systems and a) determines if these are suitable for achieving the project's stated objectives b) propose areas of improvement.
- Review the extent to which the current policy and legal environment (particularly the existing cooperatives act) is conducive to create commercial oriented farmers marketing cooperatives and

recommend what policy improvements are needed and/or what alternatives to cooperatives (viable farmers business organizations) are possible the experience of other countries.

Degree of Participation and Ownership:-

- Examine the degree of participation of the farmers' beneficiary groups in the project implication and its implication on the ownership and future sustainability.
- Review the extent to which women have been active and influential project participants and how women have directly benefited from project interventions;

Sustainability, Replicability and Exiting:-

- Explore a) to what degree the results of the project intervention are (technically, financially, institutionally, socially) sustainable once the external support ceased b) the extent to which the project experiences and approaches are replicated/scaled-up over a wider areas or beneficiaries for wider impact.
- Assess to what degree will the project target groups remain active in the project initiated activities once SOS Sahel Project funding has ceased.
- **Asses** the extent to which the project is likely to be sustainable in terms of;
 - beneficiary acceptance and uptake of project interventions both individually and on a community basis, and the prospects for future community or private maintenance of activities.
 - government agency involvement with the project; acceptance of project technical and operational systems and institutional and financial capabilities to maintain any on-going support to local communities;
- Assess to what extent the primary cooperatives and the union have developed the skills and authority in managing their business affairs and in their relationship with other partners (public institutions, the private and the NGO sector).
- Identify key gaps, the type and form of assistance required from SOS Sahel and/or other agencies to create financially and institutionally viable farmers business organizations to effectively run operations after the termination of the project.
- Develop sector specific phase out plan/strategy, which indicates processes, procedures and activities that will ensure the continued benefit of the project gains once external funding has ceased.

Evaluation Methodology;

The expatriate lead consultant in consultation with SOS Sahel country and field office will develop the appropriate evaluation methodology. However, we stress that the evaluation should be as far as possible based on participatory methods that involve the major stakeholders of the project. The SOS Sahel project team, individual farmers, farmers group, farmers organizations (primary cooperatives and the union), partner government institutions (at all levels) and the private hive products traders, other NGOs involved in similar undertaking, and the policy makers are expected to be actively involved in the conduct of the evaluation. The key discussants of project progress will be the formal and informal institutions with which the project has worked. For purposes of the review, these will be divided between local, woreda and regional partner government institutions both technical and administrative: and farmers as individuals and as members of cooperative management committee. SOS Sahel project staff will be asked to arrange, with the local group concerned, the necessary focus group discussions to allow progress to be assessed. Assessment of the technical merit and appropriateness of intervention will be made through a series of separate field visits to the six target woredas during the evaluation period. In particular, the evaluation team, with SOS Sahel and partner governments' staff, will aim to meet the individual beekeepers, members of the primary cooperatives, management committee of the union and primary cooperatives, and relevant officers of the regional, zonal and woreda cooperative commission. The evaluation team will additionally aim to meet farmers' from non-beneficiary woredas which serve as a control unit to measure project impact in the absence of baseline data. A checklist of topics for participatory review will be agreed with SOS Sahel staff at the start of the evaluation. The participatory evaluation is expected to generate qualitative information of relevance with respect to project progress and impacts in the absence of sound baseline data which is the case in this particular project. In addition, the evaluation team is expected to review relevant project and policy documents, pay a visit to relevant agencies including the donor and undertake end of evaluation feedback workshop at Bahirdar.

ANNEX 5. ITINERARY

Consultant - Tom Deiters

Sunday 6 Aug	Departure Nairobi Addis Ababa. Arrival at Hilton 1700 hours.
Monday 7 Aug	Meeting Mulufird and Director SOS-Sahel. Luncheon discussion on methods for the evaluation.
Tuesday 8 Aug	Departure 0600 for Debre Markos. Arrival 1015. Check in hotel. Meeting with farmers from 1430 till 1630. Visit beekeeper's operation. Back in hotel 1800
Wednesday 9 Aug	Departure 0730 for Dangla. Arrival 1015 meeting from 1150 – 1330 at government offices. Arrival in Bahir Dar at 1435. Meeting at CPC starts at 1500 hours, finished at 1700 hours. Check-in to Summerland Hotel.
Thursday 10 Aug	At 0830 meeting at SOS-Sahel offices. Booking tickets return to Addis Ababa. Departure for Meket at 0915. Arrival 1400 at CPC. Meeting starts at 1455 till 1700 hrs. Departure for Lalibela. 2000 hrs check in Hotel in Lalibela.
Friday 11 Aug	Departure 0730 for Meket arrival 1100 hours. Short visit and honey buying. 11.30 departure for Bahir Dar, arrival 1530. Check in Hotel Summerland. Start reporting
Saturday 12 Aug	1030 departure Hotel to offices SOS-Sahel then dash for airport. Arrival in Hilton Addis Ababa at 1400 hours. Report writing continued.

Consultant – Susan Wren

Sunday 13 Aug	Arrives in Addis Ababa from Nairobi Handover discussion between Tom Deiters, Susna Wren and Programme staff. Tom Deiters departs for airport 0700 hours.
Monday 14 th Aug	Meeting in Addis with SOS Sahel programme staff and partners. Review of programme documents
Tuesday 15 th Aug	Depart 6.30 for Bahir Dar. Check in hotel. Meeting with Bahir Dar CPC members Visit to retail outlet and Resource Centre
Wednesday 16 th Aug	Travel to Gondar. Meeting with the Co-operative members. Visit to the retail outlet in Gondar. Return to Bahir Dar.
Thursday 17 th Aug	
Friday 18 th Aug	
Saturday 19 Aug	
Sunday 20 th Aug	
Monday 21 st Aug	
Tuesday 22 nd Aug	
Wednesday 23 rd Aug	
Thursday 24 th Aug	

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