

TECHNO SERVE

New Trade and Enterprise Development (NEW TREND) Program
Cooperative Agreement No. 656-A-00-01-00040-00

U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

Final Performance Report
January 31, 2005

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SUMMARY

In June 2001, TechnoServe (TNS) was awarded by the U.S. Agency for International Development \$3.3 million to continue to develop rural enterprises in Mozambique, which create sustainable income for rural households. This program – called NEW TREND – has two main components to be implemented over a three year period:

- Rural enterprise development in the cashew, oilseed, pulses, and fruit sub sectors
- Ongoing collaboration and capacity building of GPSCA - the newly formed government department which identifies and develops private sector investments – including completing sub-sector studies together

The results of TNS' hands-on assistance to rural enterprises have been significant. From June 2001 through September 2004, we have assisted 35 rural enterprise clients, which generated \$4.7 million in revenues and benefited over 27,000 households. We have also mobilized \$2.6 million in new finance for these rural enterprises. Remarkably, all but one of these clients were start-ups. And while some struggled (which is not unusual for start-ups), others have grown to become significant export-led companies.

At the same time, we have helped to put in place private sector-led support structures – such as the Agro Industrias Asociadas (AIA) – which can continue our technical assistance role. We have found that our lead clients – the success stories such as Miranda Caju and CITRUM – can play an important role in developing tomorrow's clients. This has been done through programs such as management internships (in which future managers can complete internships with the lead client) and mentoring other, smaller businesses.

But we have also learned some important lessons. First, we learned that focusing on a single sub-sector without understanding its links to broader value chains can limit enterprise growth. This learning is shaping our activities going forward, as we increasingly focus more on development of the complete value chain (such as the field crops – animal feed – livestock chain) and less on single sub sectors, such as oilseeds. We have also learned that in certain sub sectors scale of operations and size of transactions do matter. Our assisted clients which have been most successful had reached the minimum size required to be competitive. This has helped us reassess which clients we assist in sub sectors such as oilseeds and cashew processing.

The following final performance report summarizes our quantitative indicators of enterprise growth as well as discusses key accomplishments and lessons learned. We also outline areas which need further attention and discuss our recommendations for additional activities which will build on NEW TREND's successes and lessons to date.

1. INDICATORS

In collaboration with USAID and other implementing partners, TechnoServe identified four indicators which allow us to track the progress and impact of our rural clients:

- Number of Assisted Rural Enterprises (AREs)
- Total Finance Mobilized
- Number of Households Benefiting
- Total Revenues for Assisted Rural Enterprises (AREs)

Over the course of the NEW TREND program, TechnoServe has been tracking each of these indicators on a quarterly basis, comparing our progress against projections for the quarter.

Below are the target and actual¹ indicators for the three years of NEW TREND. 2001 – 2002 refers to the period October 2001 – September 2002.

2001 - 2002	Target	Actual	% Met
# AREs	16	13	81%
Finance Mobilized	\$250,000	\$421,000	168%
# HHs	2,345	11,683	498%
ARE Revenues	\$400,000	\$377,441	94%
2002 - 2003	Target	Actual	% Met
# AREs	20	18	90%
Finance Mobilized	\$500,000	\$833,500	167%
# HHs	11,725	17,223	147%
ARE Revenues	\$2,200,000	\$1,025,599	47%
2003 - 2004	Target	Actual	% Met
# AREs	25	26	104%
Finance Mobilized	\$750,000	\$1,354,800	181%
# HHs	24,000	27,348	114%
ARE Revenues	\$4,500,000	\$3,288,674	73%

TechnoServe is pleased to report that we surpassed all but one of our assisted enterprise revenue targets, as shown in the three-year summary below:

Three-Year Total	Target	Actual	% Met
# AREs	25	26	104%
Finance Mobilized	\$1,500,000	\$2,609,300	174%
# HHs	24,000	27,348	114%
ARE Revenues	\$7,100,000	\$4,691,714	66%

¹ Note that some of the actual indicators are different from what was initially reported to USAID on a quarterly basis during the course of NEW TREND. This is due primarily to revisions made directly by our assisted clients. Indicators for the extension period (October – December 2004) are included as Appendix 6.

There are two main reasons for our not reaching our assisted enterprise revenue targets. First, in our planning stages, we underestimated the risks and constraints faced by our start-up clients. In Mozambique's uncertain environment, even a bankable business with a positive track record – such as Miranda Caju – can find it difficult to secure sufficient working capital to expand. While we are addressing such constraints such as the lack of adequate capital, we also understand that some constraints – such as a fall in prices due to oversupply – are beyond our control. Over the course of NEW TREND, we have become more conservative in terms of the impact our assisted clients are expected to have, given the various risks they face.

Second, the revenues of assisted clients in the last two years of NEW TREND do *not* include any revenues from the pulses sub sector (which were expected to be as high as \$1,000,000 in the 2003-4 fiscal year). Our lead client, SAGAR, did not feel it needed TechnoServe's assistance during this time. Unfortunately, without our involvement, the client also suffered significant quality and market issues during that time. Since November 2004, the client has once again engaged us to assist in increasing their quality and identifying attractive markets for the product (report attached as Appendix 3). We look forward to continuing help SAGAR grow over the coming year.

The indicators by sub sector are shown below:

Three-Year Total	Cashew	Oilseed	Pulses	Hort*
# AREs	14	4	2	6
Finance Mobilized	1,480,800	165,000	200,000	763,500
# HHs**	23,072	8,554	1,354	771
ARE Revenues	2,038,549	1,030,281	195,050	1,427,834

*Includes fruit, vegetable and flowers (high value horticulture)

** #HHs for pulses and oilseeds refers to 2001-2, as # of HHs decreased over time

Because of the large number of households² selling raw cashew to our cashew processor clients, the cashew sub sector continues to have the most significant impact on raising rural incomes.

However, the horticulture sub sector also offers significant potential for growth, particularly as our assisted clients increase their purchases from the family sector. 550,000 hectares of land within the Beira Corridor is suitable for horticultural production, which could generate as much as \$2.75 billion in annual revenues through both commercial and small holder (family) production.³ To date, only 74,000 hectares are currently under production - primarily by small holders – and less than 1000 hectares are under commercial production. Should this available and suitable land be further developed, the potential for employment generation in horticulture is significant. We would expect the number of jobs to increase by as much as a factor of 1000.

² TechnoServe estimates that each household sells an average of 100 kg of raw cashew to the processors (or intermediaries, such as associations).

³ According to a TechnoServe analysis as part of our December 2003 assessment of Mozambique's horticulture potential.

2. ACCOMPLISHMENTS

Over the past three years, TechnoServe has had several successes in developing viable rural enterprises and creating income for the rural poor of Mozambique:

We supported the development of a new high-value sub sector in Mozambique. Since 2002, TechnoServe has provided hands-on support to the country's horticulture trailblazers, including the first commercial rose grower (Vilmar), the first vegetable marketer (Waluru – now called Vanduzi), and the only current commercial exporter of grapefruit (CITRUM). At the same time, through an in-depth study of Mozambique's potential as a high-value horticulture producer in 2003, we identified those crops in which Mozambique has a potential competitive advantage. We have attracted the interest of new investors in this sub sector (such as the Aga Khan Foundation and Aquifer) and have helped important government officials (such as the Governor of Manica Province) understand the potential and priority of this emerging sector. Donor interest continues to grow in this sector, as evidenced by the recent World Bank studies, and we are optimistic that sufficient resources can be made available to realize the country's horticulture potential.

We reestablished Mozambique as the leading supplier of high quality grapefruit. Mozambique traditionally produced some of the highest-quality fruit in southern Africa, but lost its market share after years of civil war and socialist rule. Recognizing the fresh fruit industry's enormous potential to drive rural economic growth, and starting in 2002, we began our technical assistance to MOCIT/Citrum, a new tropical fruit business led by entrepreneurs Alex and Paolo Negro. Now in its second year of exporting to Europe, the company employs over 300 permanent and contract workers and is well-positioned to be a leading Southern African producer of high quality grapefruit.

We have helped Mozambique rekindle its cashew processing sub sector and lay the foundations for future growth. In the late 1990s, Mozambique's volume of cashew production was a fraction of its 1970s peak of over 200,000 tons per annum. The sub sector faced serious constraints to development. Through an initial sub sector analysis, TechnoServe identified a real opportunity to rekindle the processing sector by introducing an Indian technology based on smaller-scale and manual factories. We began by assisting single entrepreneur – Mr. Antonio Miranda – in order to prove the concept and create a model that can be replicated by later entrants. Through our hands-on assistance in capital raising, technology selection, training, and market linkages, we are now assisting 11 such processors who are expected to purchase cashew from as much as 80,000 families next season. We are also working with each processor to lay the foundations for further growth, particularly through an innovative program to incentivize families to replant cashew trees, thus ensuring a continued supply of high quality raw material.

We have helped to create viable income options for the rural poor in oilseeds, building on USAID's significant investment in this area. Through our assistance to a medium-scale oilseed processor, Optima, we helped to create a market for over 2000 smallholder producers of sunflower in the Beira Corridor. Mobilizing resources such as McKinsey & Company and Cargill (through the MozLink program), we also identified a value-added opportunity for these small producers in soya production, as we helped our lead client to diversify into new areas, such as animal feed production.

We have demonstrated that Mozambique can be a producer of high quality dahl. In late 2004, we undertook a study to help SAGAR, the tur dahl processing plant located in Gurue in Zambezia Province, understand why it was not achieving the quality and capacity required for international markets. TechnoServe is now actively engaged by SAGAR to implement our recommendations.

We have helped to build Mozambican entities which can continue TechnoServe's technical assistance role well after our exit. For example, Agro Industrias Associadas (AIA), a new holding company set up by our assisted cashew processing clients, has become the primary marketing agent and quality controller for the processors. Over time, we expect AIA to play an important financing and R&D function, helping additional new entrants to become successful. As other sub sectors – such as horticulture – continue to develop, we will focus on helping to create similar entities to play this important marketing and technical assistance role.

We have mobilized other resources to complement and enhance our NEW TREND activities. Due to our success in sub sectors such as cashew processing, we have been able to attract support from bilateral donors (such as Irish Aid, Sida, and Seco), multilateral institutions (such as the World Bank / IFC, NEPAD), private foundations (such as the Ford Foundation and the W.K. Kellogg Foundation), and other USAID sources (such as our GDA program MozLink, our matching grant, and the recent Farmer-to-Farmer program). Such support has enabled us to bring in world-class mentors, such as Cargill, to work directly with our clients and benefit from McKinsey volunteers to assist clients in business planning and capital raising.

3. LESSONS LEARNED

Over the past six years in Mozambique, TechnoServe has also learned some important lessons regarding both what works and what does not work in rural enterprise development.

- **Scale of operations and size of transactions matter.** In cashew and oilseed processing, we have learned that the minimum plant capacity to capture economies of scale (and justify the cost of experienced management) is approximately 1,000 tons per annum. For this reason, smaller plants such as Oleos Cuti, Oleos Ribaue and QualiCaju have shut down or struggled. TechnoServe has thus shifted its focus to assisting those plants – such as Optima - willing and able to reach this minimum capacity and replicating their success elsewhere.
- **Private enterprises *can* play a key role in extension.** The success of our rural processing clients depends, to a certain extent, on the availability of high quality raw material. And TechnoServe has focused on empowering its clients to play an important role in ensuring the highest quality material. For example, cashew processors have a significant incentive to help families understand how to grow high quality cashew trees, and our clients are playing a critical role in helping them intercrop with groundnuts in order to improve the soil quality. We believe that private sector-led extension is a real, sustainable option for those sub sectors which have reached a certain level of development, such as cashew processing.
- **Focusing on a single sub-sector without understanding its links to broader value chains can limit enterprise growth.** For the past three years, TNS has been assisting oilseed processors to start up and expand in the Beira and Nacala Corridors. While 2,500 families benefited, the impact would have been greater if the companies had diversified into feed production or if assistance had also been given to start-ups in the animal feed business. These experiences have helped us understand that opportunities for rural oilseed processors must be evaluated in the context of the entire value chain.
- **Pilots are the first step to building a competitive sub sector.** One reason for TechnoServe’s success in cashew processing has been its approach: focusing first on a single pilot (Miranda Caju), digesting and applying learnings from this experience, and replicating the model for new entrants. As a result, we focus significant resources on a small number of enterprises (as opposed to working with 10-15 companies in each sub sector and hoping that a few of them succeed). We have found that this approach is also a good way to encourage more Mozambican participation in enterprise development. By proving the concept, we have been able to convince more risk-averse Mozambican nationals to invest in similar enterprises.
- **Successful enterprise development requires a delicate balance of resources, sub sector growth, and industry expertise.** TechnoServe invests significantly in hiring the country’s best experts in our target sub sectors (such as Rui Santana A’fonso in horticulture and Shakti Pal in cashew). Such resources are expensive and are most effective when the sub sector is poised for rapid growth. In horticulture and confectionary nuts, we have achieved the right balance of good people and resources. However, in oilseeds, we found that the slower growth of the sub sector did not necessarily merit our hiring a full-time oilseed advisor. But now that we are shifting our focus to the entire value chain of oilseeds – animal feed – livestock, we find that the potential does merit a full-time advisor in order to help realize the potential in Mozambique.

4. ACTIVITIES GOING FORWARD

These lessons have significantly shaped our activities going forward. Our six years of experience in Mozambique (and the resulting successes as well as challenges) have made us realize that:

- Our work going forward must take into account the **entire value chain** of our target sub sectors in order to realize the country's potential in rural economic growth
- We must **collaborate more closely** with those entities involved in smallholder production in order to ensure a consistent and high quality supply of raw material for our clients
- We must continue to focus on **quality over quantity** of rural clients. Our approach of focusing on a small number of pilot clients and replicating this model once they have demonstrated success does work. This approach is also a good way to build up more indigenous Mozambican entrepreneurs, particularly those who may be more risk averse and prefer to see a proven model before committing their own capital.

As a result, we have formed the EMPRENDA Alliance with two partners who are working direction with smallholders to improve their production yields: ACDI/VOCA and CLUSA, who will provide association development services in the Beira and Nacala Corridors, respectively.

The Alliance's objectives are to increase per capita rural family incomes and to promote productive asset accumulation: high priorities for both USAID and the Mozambican government. And our strategy is one of focus: to create and strengthen sustainable, competitive rural enterprises and farmer associations operating in the three value chains where we believe smallholders have the greatest potential to increase their incomes: **high value horticulture** (fruit, vegetables, and floriculture), **confectionary nuts** (cashews, groundnuts, and macadamias), and **field crops / animal feeds** (oilseeds, legumes, and cereals). This focus on key high opportunity areas will maximize impact by:

- 1) building on recent successes in these sectors, such as vegetable and flower exports from Manica and growth in the cashew processing sector and sesame seed exports from Nampula, and;
- 2) permitting us to take an integrated approach, addressing all elements required to build strong smallholder associations and competitive rural industries.

A summary of the EMPRENDA program and the activities of each implementing partner is attached as Appendix 5.

NEW TREND CORE INDICATORS

Note: 2002 refers to the period: October 2001 - September 2002

	AREs			Sales			# of Beneficiary Households			Capital Mobilized		
	2002	2003	2004	2002	2003	2004	2002	2003	2004	2002	2003	2004
By Sub Sector												
Horticulture	1	5	6	0	423,045	1,004,789	0	599	771		543,500	220,000
Cashew	6	10	14	92,243	317,306	1,629,000	1,775	9,774	23,072	421,000		1,059,800
Pulses	2	0	0	195,050	0	0	1,354	0	0		200,000	0
Oilseeds	4	3	4	90,148	285,248	654,885	8,554	6,850	3,505		90,000	75,000
Other	0	0	2				0	0	0			0
Total	13	18	26	377,441	1,025,599	3,288,674	11,683	17,223	27,348	421,000	833,500	1,354,800

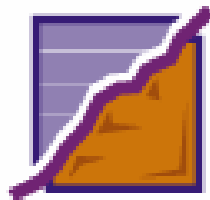
Reports Produced by TechnoServe under NEW TREND

#	Report Name	Sector or Subsector	Year
1	Financing Memorandum for APEB banana production	Fruit	2001
2	Recommendations for Semedos Oils	Oilseeds	2001
3	Assessment of Mozambican Banana Industry	Fruit	2002
4	Briefing Document The Mozambican Fruit Industry	Fruit	2002
5	CITRUM Application for NORSAD Financing	Fruit	2002
6	Fundación Chile Report: MozFund Feasibility	All	2002
7	Manica Oils Business Plan	Oilseeds	2002
8	Middle East and Indian Markets For Mangoes and Citrus	Fruit	2002
9	Miranda Caju Expansion Plan & Video	Cashew	2002
10	Recommendations for Mozambique Based the Florida Citrus and Honduran Banana Industries	Fruit	2002
11	Assessing the Competitiveness of the Horticultural Sector in the Beira Corridor	Horticulture	2003
12	Cashew in Eastern and Southern Africa	Cashew	2003
13	CITRUM Video	Fruit	2003
14	Essential Oil Development in Mozambique	Oilseeds	2003
15	Frutas Lango: Assessment of Current Trading and Recommendations for Future Business	Fruit	2003
16	Optima Lda Business Plan and Video	Oilseeds	2003
17	Possibilities for Commercial Banana Production in Mozambique's Sofala Province	Fruit	2003
18	Vilmar Business Plan and Presentation	Floriculture	2003
19	Waluru Application for NORSAD Financing	Vegetables	2003
20	Business Case for CanMoz	Vegetables	2004
21	Business Case for Empreendimentos Agrarios de Mocambique LDA - EAM	Fruit	2004
22	Business Case for Pimenta de Mocambique - PdM	Vegetables	2004
23	Business Case for Waluru, Lda	Vegetables	2004
24	Cashew Factory Pre-requisite Program and HACCP Audit	Cashew	2004
25	Cashew Processing Video for Regional Seminar	Cashew	2004
26	CITRUM Business Plan for Further Expansion	Fruit	2004
27	Horticulture Potential Video for Investors' Conference	Horticulture	2004
28	Laying the Foundations for Profitable Growth: Recommendations for SAGAR	Pulses	2004
29	Machinery Requirements and Performance for a 3000 ton CashewMaster (Nitrogen) Factory	Cashew	2004
30	Proceedings from Mozambique Horticulture Investors' Conference	Horticulture	2004
31	Proceedings from Regional Cashew Competitiveness Seminar	Cashew	2004

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Laying Foundations for Profitable Growth

Results of technical appraisal and market
exploration and recommendations for Sagar



TECHNO SERVE
Business Solutions to Rural Poverty

Maputo, December 2004

Rakesh Gupta
Neville Slade
Fatima Kassam
Willem Vriesendorp

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1 Executive summary

Sagar requested that TechnoServe meet two objectives:

- 1) Complete a technical appraisal of the factory to improve the quality of the finished product and the total capacity of the factory;
- 2) Complete a market study and find potential links to buyers for the current and improved product.

After a thorough analysis, we have concluded that there is much room for improvement in many parts of the production process including purchase, storage, processing, as well as in overall management, human resources and communication.

In this report we describe the general situation, some of the main issues we observed and recommendations that would address these issues. Some of the proposed recommendations are already being implemented. With these and further suggested improvements, Sagar can achieve a significant increase in quality and capacity. Furthermore, with improved quality, new markets can be explored starting with the regional and Asian markets and eventually the high-quality European and US markets. Nevertheless, India will remain a central component of Sagar's export strategy in any scenario.

The recommendations in this report are based on initial observations. Implementation of these recommendations will require significant effort and some suggestions will require further research before implementation is possible. If needed, TechnoServe would be happy to assist Sagar in addressing these future challenges and in helping Sagar to achieve profitable growth.

2 Introduction

2.1 Background

The original decision to build a dahl processing factory in Zambezia was made under the agreement that SCI's joint venture partner, Mr. Balai, would provide technical know-how and take responsibility for all marketing. The actual support from Balai, however, turned out to be sorely inadequate. Without the help of Balai, Sagar Lda. Zambezia (Sagar) found itself with low quality dahl and limited interest from buyers, resulting in large quantities of unsold stock. Improving the process without Balai was further hindered by the investors' limited experience in the industry and language barriers between the specialists and the factory management.

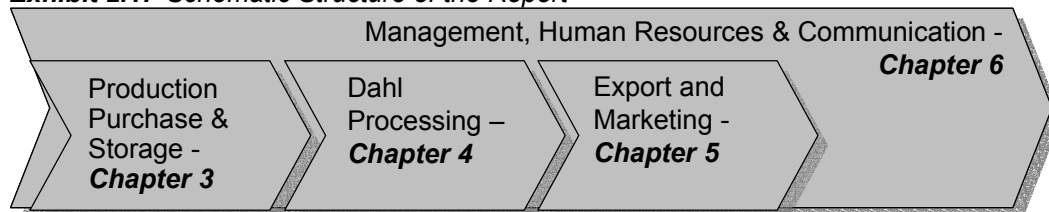
To address these issues, SCI asked TechnoServe to complete a technical appraisal of the factory and to do a market study and find potential links to buyers for the current and improved product. These issues are addressed in this report and put in a broader context of the full processing value chain and more general market information and trends.

Sagar is a tur dahl processing plant located in Gurue, in Zambezia Province of Mozambique. The factory is situated at 520-800 meters above sea level, with humidity levels of approximately 70-80% and unpredictable rains for about ten out of twelve months. The factory was built in 2002 with a rated capacity of 30 tons of finished product per day, although there are no written documents to this regard. Actual capacity turned out to be much lower partly due to the inability to use sun-drying because of the rains.

The low quality dahl in the first season was caused by a combination of factors including a delay in processing the raw material (which was the result of a 10 months hold-up at the Nacala port), inadequate fumigation and storage, and problems caused by sun-drying. On top of this, part of the factory management was un-experienced in dahl making and communication among staff and between staff and management was difficult, partly due to language barriers. This year, purchase of raw material has been more organized (although not very quality conscious), and with a new dryer, the process relied less on sun drying, resulting in a better dahl quality.

The remainder of this document will discuss the current situation, observed issues and the recommendations in more detail. The internal situation and processes of Sagar are discussed in sections 3 to 7, structured according to the production chain as illustrated in the figure below. After this, section 8 will summarize some of the recommendations that have already been implemented and section 9 will discuss the external Dahl market and proposed market strategy for selling the dahl.

Exhibit 2.1: Schematic Structure of the Report



The steps involved in dahl processing are delineated more specifically in Appendix A.

2.2 Method

The figure below summarizes the basis for our analysis and the type of conclusions that are drawn in this report.

Exhibit 2.2: Methodology

	Analysis	Conclusions
Appraisal of Production Process	Analyses based on: <ul style="list-style-type: none"> • Visits to Sagar's factory • Discussions with Sagar and SCI management • Discussions with Sagar employees • Experience of TechnoServe with other clients in similar products • Discussions with various external stakeholders, such as traders, ICRISAT and World Vision • Visit to dahl processors in Malawi and India (Appendix B) 	Conclusions consist of: <ul style="list-style-type: none"> • Recommendations in areas of purchase, storage, processing, export, marketing and management for short- and long-term • Suggestions for further analyses • Potential areas for further cooperation between Sagar and TechnoServe
Market Exploration	Analyses based on: <ul style="list-style-type: none"> • Internal and external documented market research • Interviews with importers, traders and retail channels 	Conclusion consists of: <ul style="list-style-type: none"> • Recommendations of short- and long-term potential markets • Information on these markets • Initial reaction of potential importers • List of potential importers • Possibilities for further cooperation

Lessons from the visit to dahl processors in Malawi have been integrated into this report, however a detailed overview of these visits can be found in Appendix B.

3 Pigeon Pea Production, Purchase and Storage

3.1 *Situation*

Production

Pigeon peas are grown throughout the region surrounding the factory. Most pigeon peas are indigenous varieties but World Vision has begun to introduce the ICEAP 00040 variety in the Zambezia region. This variety gives high yields, large grains, early maturation and is therefore preferred by farmers. The ICEAP 00040 has been researched in laboratories and by the Dahl Miller Association (DMAL) in Malawi, where this variety has been tested for ease of de-hulling and other qualities. DMAL has therefore been actively promoting the new variety among farmers in Malawi. Sagar does not actively promote the ICEAP 00040 variety through its purchasing process. Although farmers prefer the new variety anyway, differentiating purchase prices could significantly increase the speed of introduction.

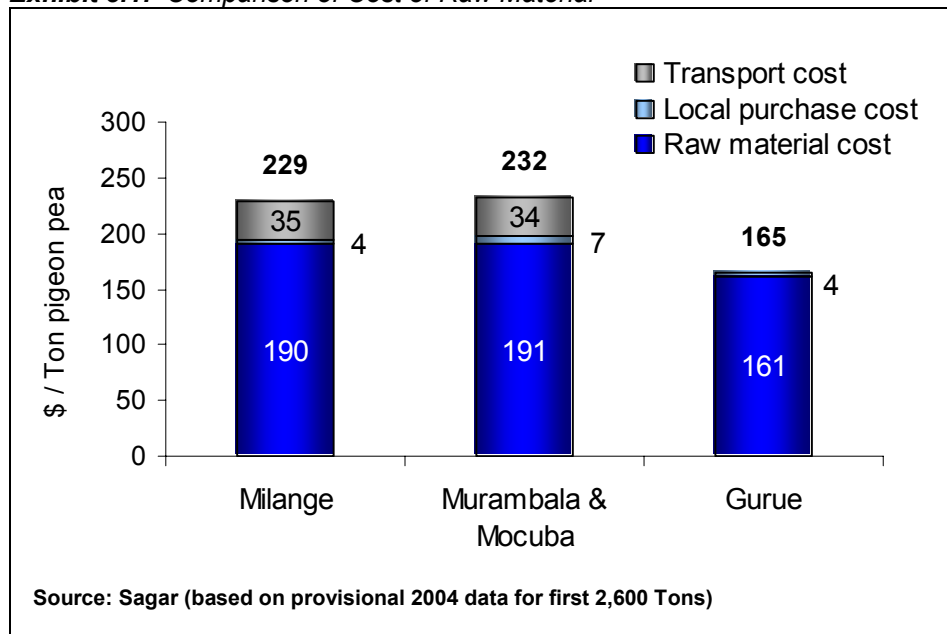
A recent experiment to promote certain seed varieties through World Vision did not succeed because only a small percentage of the seeds given to farmers resulted in additional raw material from these farmers specifically. World Vision has indicated that it is prepared to accommodate Sagar's specific needs where possible. In another effort, Sagar will promote new seeds through tobacco companies that have a greater penetration into farming communities and that have experience with commercial extension services to small holders.

Purchase

Sagar buys raw pigeon peas from August to December. During this period, Sagar must acquire enough to keep the factory running for at least 10 months of the year allowing for one month of staff holidays and one month for repairs, improvements, and maintenance.

Currently, Sagar has a team of agents in place who purchase the product from merchants at various buying points throughout Zambezia Province. From these buying points, the material is then transported to Gurue and stored at the factory warehouse. Only in Milange, Sagar has its own merchants that buy directly from smallholders.

The price of the raw material makes up approximately 50% of the FOB price, therefore variations in raw material prices have a significant impact on profitability. As is clear from the (provisional) figures in the graph below, the price difference between the various regions where raw material is purchased is significant. When interpreting this graph, the reader should be aware that temporal price variations can also largely influence the data.

Exhibit 3.1: Comparison of Cost of Raw Material

Competition from Malawi drives up the prices and, even in Gurue, strong competition from traders exists. If Sagar were to buy from interior areas through its own merchants, this would result in lower prices, better quality raw product and a more direct communication channel with the farmers themselves. Although the density of grown product in interior areas will be smaller initially (and overhead therefore relatively high), it would be a good investment for the future.

As far as the exact period of purchase is concerned a number of factors play a role. At the start of the season, pigeon peas command a price premium because harvest in India begins 2 to 3 weeks later. Last year, Sagar tried to profit from this high-price period but was not able to sell the raw product. A large trader commented that this market is very competitive and that you need your own merchants and very large volumes to profit. Even more established millers whom we visited in Malawi are only involved in the pigeon pea trade on a pre-contract basis.

As the season progresses, prices decline but quality also deteriorates, especially when the frequent rains begin. Sagar should aim to purchase all raw material before the first rain. This strategy has been effective in Malawi.

3.2 Observed Issues

Production

- Promoting improved seeds was more difficult than expected. An experiment to promote seeds through World Vision failed. Of the 3 MT of seeds distributed, only 200 kg returned directly to Sagar.

Purchase

- Sagar is currently not differentiating purchase price according to quality, leading to large variations in quality and no incentive for farmers to improve quality

- The purchase process currently solely depends on one person (Pradeep), leaving the company at risk in the case that he leaves or is unable to work
- The purchase process was insufficiently planned and managed, examples include:
 - Money did not arrive on time and woven sacks arrived late
 - It was unclear for agents if they had to buy for processing or for direct trade, resulting in purchase of more raw product than necessary
 - Sagar was not able to profit from the high-price period for raw pigeon peas
 - Recordkeeping was insufficient and information, such as weekly reports, of the price trends per area during the purchase period, were not readily available

Storage

- Storage and fumigation procedures were inadequate resulting in low quality dahl

3.3 Recommendations

Production

1. *Continue extension service through tobacco producers and coordinate with World Vision on selected issues, e.g., in disseminating information on how to minimize damage from pests, but Sagar should not depend on World Vision or any other NGO entirely.*
2. *Consider starting a Sagar-owned and managed production field. This would allow for a guaranteed high quality supply and could be used for experimental purposes. Riasse, a 6,000 ha farm 70 km from Gurue could be a potential area.*

Purchase

3. *Expand purchase and establish Sagar purchase points in interior areas, far away from the Malawi border. Although initially, the relative purchase cost might be high, the long-term advantages are significant:*
 - Lower unit prices due to less competition and no middle man
 - Better quality because own purchase points allow for price differentiation and possibly (in the future) grading
 - Purchase point will provide Sagar with better information about expected volumes, prices and contact with farmer to give information and potentially (in the future) hand-out seed and other inputs.
4. *Consider price differentiation at purchase points (for this, a network of Sagar's own merchants is needed). This would involve:*
 - Price differentiation according to moisture content (using moisture content analyzer), insect damage, size and appearance
 - Training of buyers on what to look for

A next step could be to separate the different types of material but the benefit of this should be further investigated and weighted against the additional financial and logistical burden
5. *Focus on buying pigeon peas for dahl processing. Sagar should only sell raw pigeon pea when a clear opportunity arises (e.g., when purchase volume is above planning) or on a pre-contract basis.*

6. *Carefully plan, re-evaluate and communicate the buying strategy based on:*
 - Information from Marketing Department on expected sales volume
 - Information from farmers on the total expected volume and price
 - Volumes already purchased
 - Date of the first rain. All required volume should be bought prior to the rains.
7. *Share responsibilities and/or provide job rotation to decrease the dependence on one purchase person (Pradeep)*

Storage

8. *Upon arrival in Gurue, it is essential that the product is stored above ground on wooden palates in lots of approximately 40 tons. Material not dry enough for storage must be dried first*
9. *For fumigation, the piles should be covered completely with special attention to sealing gaps on the floor with sand bags so that no gas escapes*
10. *After 7 days, the tarpaulin must be removed so that the material can breath again and not become too humid*
11. *The process of fumigation must be repeated every two months both on raw material and on finished product if not sold and dispatched*

4 Dahl Processing

4.1 Situation

Dahl making involves a fairly simple process that has been in existence for years.

The basic steps are

- Separating the rubbish and debris from the actual pigeon peas
- Removing damaged and inferior peas (split on first de-husking)
- Removing the husk (involving a period of soaking in a water and oil mix), and heating to help the de-husking
- Splitting
- Final “polishing” to create a small, shiny, golden spherical product

The figure in Appendix A shows a detailed overview of the various processing steps.

Sagar has 5 de-husking rollers, 4 oiling conveyors (warm), 2x2 batch dryers along with many sieves, bucket elevators and conveyors installed. The factory was built under the assumption that sun drying would be possible at various stages of processing. Four supplementary dryers were supplied to enhance capacity during monsoon season. Additional drying yards were built later, but the weather conditions of the location render them useless.

Evaluation of a production process can generally be done along three dimensions: capacity, quality and efficiency. These dimensions are not independent: Capacity and efficiency (production cost per kg of dahl) can be improved by compromising the quality of dahl and vice versa. TechnoServe’s technical appraisal of Sagar focused on solving the capacity constraints and improving the quality but some related efficiency issues were also identified and addressed.

4.2 Observed Issues

The main issues concerning the production process were:

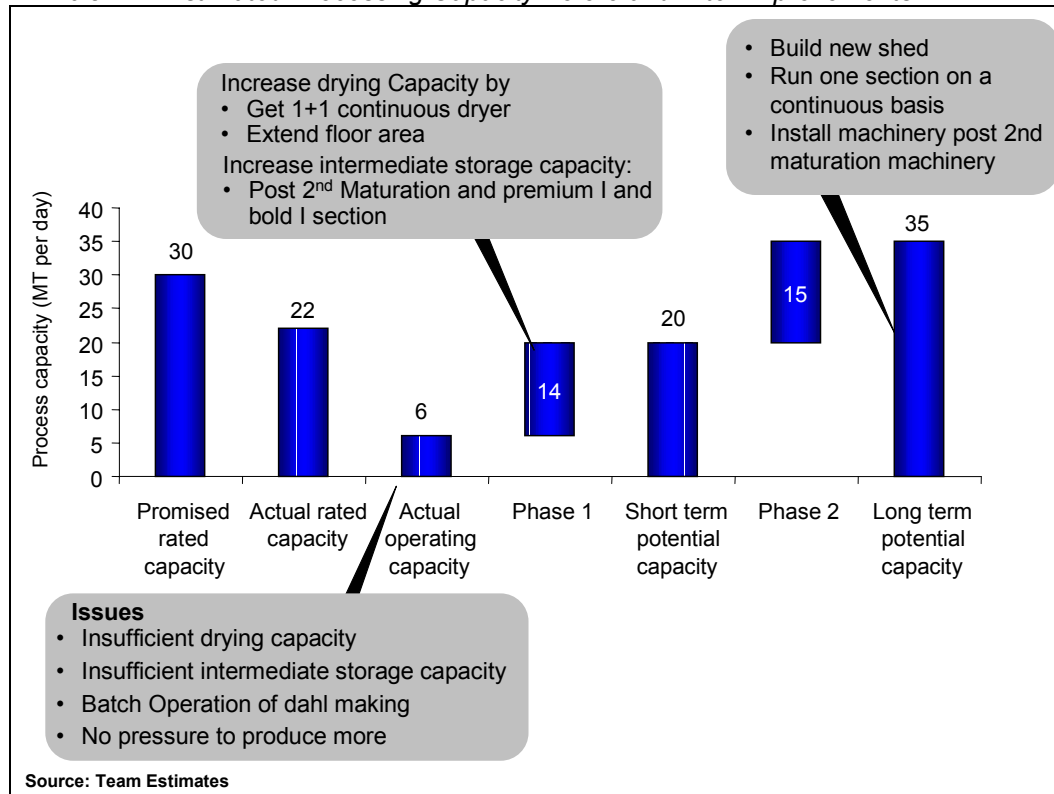
1. The capacity of the factory was promised to be 30 MT/day but the actual installed capacity appears to be only 22 MT per day and last year’s realized maximum capacity was only 10 MT a day. After introduction of the third drying step (recommended below to improve quality), the capacity is further reduced to 6 MT per day. The main bottlenecks causing this are:
 - Insufficient drying capacity
 - Insufficient intermediate storage capacity. After initial cleaning, grading and first round de-husking, the existing storage space is insufficient to store every type of Dahl (Bold 1, Premium 1, Bold 2, Premium 2) at the same time. A changeover of feed is therefore needed, taking approximately 24 to 36 hrs during which the factory workers cannot proceed to part two of the process, that involves further de-husking, splitting and final polishing.
 - Batch operation of dahl making
 - No pressure from Marketing Department to produce more
2. The low quality of the final product could be attributed to:
 - No possibility for manual adjustment of the roller gap for de-husking
 - Insufficient drying and drying process neither adequately controlled nor uniform

- Insufficient water polishing
3. Parts of the production process were inefficient:
- Hot air generators used in the existing dryers have a highly inefficient heat transfer area and do not recycle hot air. The cost associated with these inefficiencies will grow linearly with increasing heating capacity (from the current requirement of 8 m³ wood per day for 6 MT dahl per day, to between 28 and 32 m³ wood per day, for 22-28 MT dahl)
 - At times, there was an abundance of material on the floor that had to be moved from one section to the other by hand

As mentioned before, management, personnel and communication affect every part of the dahl production process and also play a very significant role in the factory. An overall discussion of issues and recommendations related to personnel and management can be found in section 6.

4.3 Recommendations

1. Increase total production capacity:
- Phase 1: Increase capacity from 6 to 20 MT per day, by:*
- Increasing drying capacity. Get two additional continuous dryers from UP5. The capacity of these dryers is estimated to be 15 MT per day on continuous bases. However, with three phases of drying, the dryer is likely to work intermittently and the actual operative capacity of this dryer would therefore be 8 to 10 MT per day. Together with these two dryers the overall drying capacity of the factory could be between 22 and 25 MT per day.
 - Increasing intermediate storage capacity to eliminate the 24-36 hours waiting time during which the intermediate storage is refilled with another type
- Phase 2: Increase capacity from 20 to 35 MT per day*
- Move from batch processing to continuous flow processing
 - Build a new shed
 - Run one section of the process on a continuous basis
 - Install post 2nd maturation machinery
 - Mechanize the flow of material to and from the dryers by using conveyors, wheelbarrows, and other tools to increase speed of the process

Exhibit 4.1: Estimated Processing Capacity Before and After Improvements

2. Improve quality final product by:

- Improving the de-husking process
 - Exercise closer control over de-husking machines as explained to the dahl maker by feed rate and back pressure control methods
 - Roll fill in three steps, to be used as per the raw material
 - A future development will be a method whereby the gap can be adjusted without removing the rollers.
- Improving the drying process
 - Dry material after first maturation
 - Dry raw material before initial feed
 - Improve control and uniformity of drying process by adding rotating belts and by installing a mechanism to control temperature
 - Install machines to test samples on humidity in order to determine drying temperatures and time
- Polishing 100% of product with water and oil unless there is a specific demand for oily dhal

3. Improve efficiency by:

- Installing a hot air generator equipped with more efficient heat transfer area leading to a potential reduction of fire wood requirement from 8 to 6 m³ with the current capacity, and from 28 to 20 m³ with a plant capacity of 20 MT per day
- Recycling air. Currently, air at around 25°C temperatures is heated to approximately 80°C, and released at around 55 to 65 °C once the dahl has been dried to 70 °C. When this hot air is recycled, the air needs to be heated only from 55 to 80 °C. Because the re-circulated air will become saturated with moisture

after some time, only 80% of the heating air should be re-circulated and 20% of fresh air should be taken in.

- Designing dryers so that material falls out of the dryer and does not have to be shoveled out by hand

5 Export and Marketing

This section focuses on the how the end-product is handled and on the marketing process. Management and communication will be discussed in the next section and a more general description of the dahl markets, a marketing strategy and a list of potential importers will be discussed in section 8.

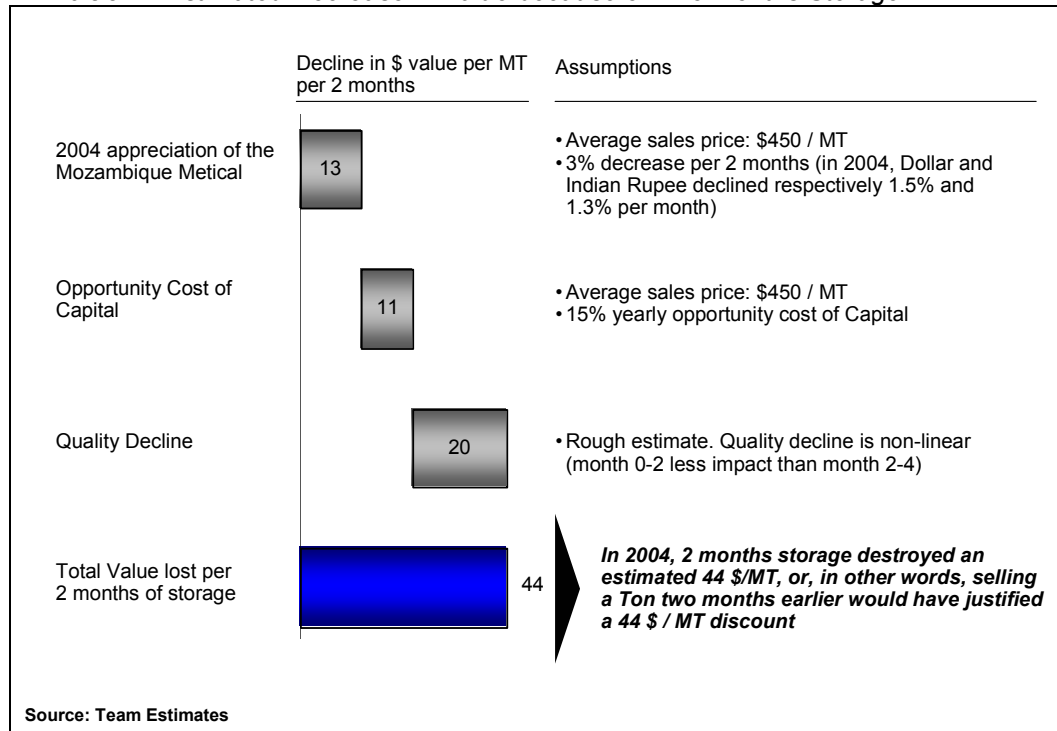
5.1 Situation

The production process results in four output products or lines of market: Bold I (27%), Premium I (8%), Bold II and Premium II (23%) and 3rd quality (3%). The rest is Extra Bold that has not yet been sold and husk, powder or un-split that can be sold as animal feed. Sagar has been selling these four qualities separately, but the majority that has been sold was Bold I and Premium I (of the 110 ton finished good that was left in Nacala on December 6, 100 tons was Bold, Premium II and Extra Bold). Selling four qualities of Dahl differs from the factories visited in Malawi where only two types, large and small, are sold. The total stock Sagar was holding at he beginning of December was 500-600 tons representing a total value of around \$200,000 (\$350 per ton minimum).

While suggestions for a market strategy and potential importer contacts will be discussed in section 8, Sagar must also address weaknesses in the marketing process *within* the company itself. Staff in Gurue had limited knowledge about the status of the sales and limited information about general customer preferences and their opinions about the product they had bought. Transportation of the finished product from Gurue to Nacala is mainly through returning vehicles that are bringing goods to town. Shifting of material is done through borrowed trucks from the tea facility. Sagar owns two Mercedes trucks but at least one of them is out of commission most of the time.

5.2 Observed Issues

1. Insufficient attention to marketing, no dedicated Marketing Department and insufficient dissemination of market information to the factory
2. No batch identification system. This can cause problems because each batch is different and if samples from a certain batch have been sent to a potential client, he will expect the same quality
3. Too much material in stock causing
 - Quality deterioration of end product. Some of the dahl has been in stock for a long time and the current quality if this product is uncertain. Additionally, almost 2,500 tons of raw material is in store that has not been fumigated properly
 - Increase in working capital
 - Exposure to exchange rate fluctuations
 - Little incentive for factory to maximize production

Exhibit 5.1: Estimated Decrease in Value because of Two Months Storage

The figure above illustrates the cost of storage by estimating the cost of having dahl two additional months in stock during 2004. Aggressive pricing could reduce the stocks and therefore the cost associated with storage, but Sagar's goal should be to improve the marketing such that all the production can be shipped as soon as a container is full. Most of the producers in Malawi operate in the same way.

5.3 Recommendations

- Increase marketing focus and marketing effectiveness by:
 - Increasing the number of people focused on marketing
 - Creating brand and promotional material (e.g., brochure)
 - Communicating customer preferences to factory floor and collecting customer feedback by calling every customer
 - Creating an export strategy and establishing more contacts in the potential export markets (discussed in section 8)
- Implement batch codification and product identification system so that it is clear from which batch samples have been sent to potential buyers. (This has already been implemented, see Appendix C for nomenclature).
- Limit the negative effects of having large amounts of dahl in stock. The fundamental solution to minimize the negative effects of having material in stock is, of course, to sell every container as soon as it is filled. However, with the current excess of dahl the following measures can be taken:

- Improve storage and fumigation practices. Storage of this product should be off the ground, with fumigation when necessary, keeping a watchful eye on humidity and on infestation by insects
- Current stocks should be offered to Malawi millers. The following process could be followed (details in Appendix B):
 - Sell 100 tons to Commodity Processors immediately.
 - Confirm condition of material in Nacala
 - Send e-mail to all Malawi millers and state what you have in stock and offer it for sale stating the price. An offer should only be refused when there is a clear prospect of increased prices in the near future
- Consider mixing the old material and sell as two varieties, large and small, as is done in Malawi. For the new improved quality product and with enough buyers, Sagar can sell the five or four different batches separately.

6 Management, Human Resources and Communication

6.1 Situation

At present there are two Dahl Makers who manage the entire 24 hour operation in two shifts - with a gap of 2-3 hours in the evening. 10 work during each shift to accomplish several different tasks. These include the boiler (1 person), post second maturation (2 persons), first oiling (1 or 2 persons), pre-maturation (3 persons), de-husking machines (1 person), and 1 overall supervisor. On top of this, 6 temporary workers are hired for packing and a few more for sun drying work including raw material handling.

Dahl Maker Mr. Satish is a good technical person, he knows his subject very well, but has difficulty communicating, especially English speaking or writing, but he can speak, write and read Hindi.

The Factory Manager Mr. Sherry, is a young engineer, learning the dahl making process 'on the job.' He was present at the time that the factory was constructed and he has spent the last 2 months in the factory. Mr. Sherry seems to lack the acumen for dahl, and although he is a good support and a good follower, he lacks leadership capabilities.

The General Manager, John Victor, is also Manager of the tea factory and has no prior experience with dahl processing. Although he seems capable and committed the communication with the factory floor is limited and his style of management is therefore not always effective.

Although there is a small office on site, it is usually vacant and lacks the tools necessary to function effectively. Documentation and data collection is limited and the reporting structures in place are inadequate. Historical documents like processing records could not be retrieved and even information on machinery details, drawings, capacity, manuals etc was very limited.

6.2 Observed Issues

1. Insufficient communication between Maputo and Gurue and long lag time in critical decision-making. For example:
 - No reports
 - No counter samples in Gurue
 - Samples in Maputo do not match the product in the warehouse
 - The factory management is not involved in the sales and marketing causing insufficient coordination on the amount of raw material that has to be purchased (which depends on the interest from the market) and a lack of direct feed-back from the customer on quality and reliability
2. Insufficient intra-factory communication leading to inefficient management and tension among staff. For example
 - Bad communication between the Managing Director and the four Indian managers due to

- Language barriers
 - The Managing Director's main work is with the tea factory and hence cannot spend sufficient time at the dahl factory to properly monitor and suggest improvements
 - Hierarchical barriers
 - Absence of common language in staff leading to a situation where only one person has all the technical knowledge which he cannot communicate. Thus, the other factory workers, and the management in Gurue and Maputo know less about the details of the process
 - Necessary management materials such as progress reports and daily management sheets were not being filled in and in most cases do not exist
3. Insufficient human resources:
- No full-time Operations Manager present that can give directions and has overall responsibility of the dahl manufacturing process
 - Marketing is grossly ignored, with stocks of finished product building up
 - At present, two persons are managing three shifts
4. Lack of motivation:
- Salaries comparable to level they would receive in India. For some staff, this means there is a high risk of leaving soon
 - No canteen, e.g., employees have to bring own tea

6.3 Recommendations

1. Improve communication between Maputo and Gurue by:
- Delegation by top management
 - Matrix structure of management, i.e., communication of management not just via hierarchical lines but directly with factory employees if needed
 - More communication facilities at the Gurue factory like fax and e-mail access
 - Report on weekly and monthly basis using common formats
 - Implementation of batch codification and product identification system (see Appendix C)
2. Improve intra-factory communication by:
- Training / Coaching
 - Language course to staff. Mr. Satish and Mr. Gobriral should be trained to speak, read and write Portuguese. Mr Satish has potential and with training and other incentives his commitment and the work culture of the plant will improve.
 - Basic computer skills
 - Report on weekly and monthly basis using common formats
 - Continuous effort from management to better understand the technical details of the process
 - Employ manager that speaks good English or Portuguese and the language of the staff
3. Hire additional personnel:

- Factory Manager - should be running the factory and should be held responsible for total volume and output quality. This person should also be directly involved in the logistics and inventory management. Ideally, this person should have experience with dahl making and managing 60 people
 - Marketing Manager
 - Assistant Dahl Maker - Required for the third shift to improve overall efficiency and control and reduce dependency on one person. This new person may report to Mr. Satish
4. Improve motivation and commitment of staff by:
- Revision of salary structure: create a premium over Indian salaries
 - Creation of amenities for staff, e.g., set-up canteen with snacks and coffee or a small recreational center with a TV and a few games

7 Recommendations already implemented

The exhibit below shows an overview of some of the recommendations that have already been implemented

Exhibit 7.1: Overview of Recommendations Already Implemented

Improvement	Details
✓ Improvements in fumigation and storage process	<ul style="list-style-type: none"> • Resized palletizing • Fumigation frequency adjusted • Stitched tarpaulin covers • Repaired holes in roof • Blocked alternating ventilators
✓ Batch identification system	<ul style="list-style-type: none"> • Designed and applied code for samples • Implemented methodology of sampling • Developed record keeping format
✓ Improved quality	<ul style="list-style-type: none"> • 3rd drying step • Educated staff on <ul style="list-style-type: none"> – Roll filling – Impact of feed-rate and back pressure control

8 Market Potential

There is no central source for information about the global market for either raw or processed pigeon peas. Much of the research in this report and others it references was gathered through interviews with importers of both raw and processed pigeon pea. Relevant information has been gleaned from those interviews in order to highlight opportunities for Sagar in a variety of markets and to make recommendations for future action.

8.1 General market trends

There are essentially two markets for *tur dahl*: India and everywhere else. The product caters to a niche market almost entirely within the Indian subcontinent and concentrated populations of people of Indian origin throughout the South Asian Diaspora. India is not only the largest producer of *tur dahl* but also the largest consumer, sometimes importing over 100,000 tons of raw product (for milling in India before distribution) to fill the shortfall in domestic supply. Major markets outside of India include the United Kingdom, North America, the Middle East and parts of Southern Africa. While this report will focus on linkages between Sagar and non-Indian markets, India is also discussed because it is central to the global trade of processed pigeon peas.

The global *tur dahl* trade is very opaque and a central source for historical data on world prices and volumes does not exist.¹ However, because India is by far the largest market, global prices are based on Indian demand and adjusted by target market requirement. The price of *tur dahl* fluctuates during the year reaching a low by the end of the calendar year. Two developments are putting downward pressures on global *dahl* prices: 1) the Indian processing industry has been consolidating, creating larger and more efficient units; 2) ICRISAT and the US Department of Agriculture have both noted that yellow pea is becoming a more acceptable substitute for pigeon pea in *besan* (flour) mixtures (up to 40%) and also as a substitute in the split form for *dahl* made from *desi* chickpeas and pigeon peas (see Appendix D)². Yields from milling yellow pea are significantly higher and the price per metric ton is hundreds of dollars lower, around \$135 to \$185 USD/MT in 2001. Importers with whom we have spoken could not confirm any new, downward trends in global *tur dahl* prices and volumes, and the short-term impact for Sagar is likely to be limited.

East Africa is a significant player in the global trade of both raw and processed pigeon peas. Malawi produces about 10,000 tons of *tur dahl* and product of this origin is often cited as the benchmark grade for quality in Europe and Southern Africa. Tanzania is acclaimed for its high-quality raw product. While Malawi is more widely recognized, both Kenya's and Malawi's *dahl* industries are equipped with relatively efficient machinery allowing them to meet the quality standards required by the international markets.

¹ Weekly and daily wholesale prices for *tur dahl* in India can be found at <http://agriculturalmarketing.delhigovt.nic.in/reportf.html>

² Lo Monaco, Gabriele. (2003). "Competitiveness of African Pigeon Pea Exports in International Markets." ICRISAT Working Paper Series, no. 15, p.13.
Govindan, Landes and Price. (2003). "India's Pulse Sector: Results of Field Research." Economic Research Service, USDA, pp. 7-9.

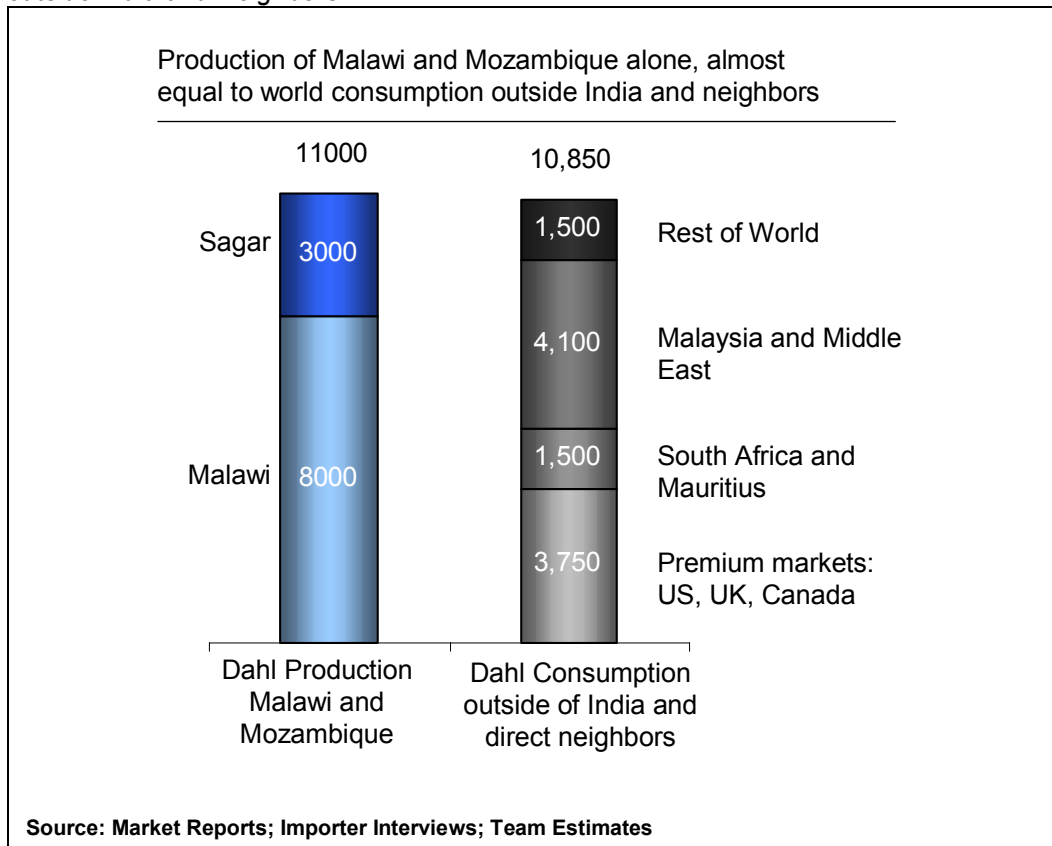
8.2 Potential Export Markets for Sagar

“We are absolutely willing to explore purchasing from a new supplier in Mozambique! The country displays a lot of potential.”

- Bruno Utelli, ConAgra

The overall conclusion from our research into potential export markets for Sagar is that with the improved quality, Sagar should be able to export significant amounts to markets outside of India but that, for the foreseeable future, India will remain the main market for Sagar. This is illustrated in the figure below that shows that production in Mozambique and Malawi alone would already produce as much as the total world dahl demand outside India and its neighbors, which makes any export strategy that excludes India unrealistic.

Exhibit 8.1: Production of Malawi and Mozambique Compared to Total World Consumption outside India and Neighbors



Of the potential non-Indian markets, we suggest that in the short-term, Sagar mainly focuses on markets requiring a medium-quality product beginning with South Africa and Mauritius. As contacts are made and relationships strengthened, Sagar should look at shipping to the Middle East. Although the quality requirements from these markets can be met by Sagar, the Middle Eastern market is opaque and, due to its proximity to India, relies heavily on India as its main supplier. In the long-term, when consistency of quality and supply are achieved, Sagar can increase sales to the UK and North America. In the

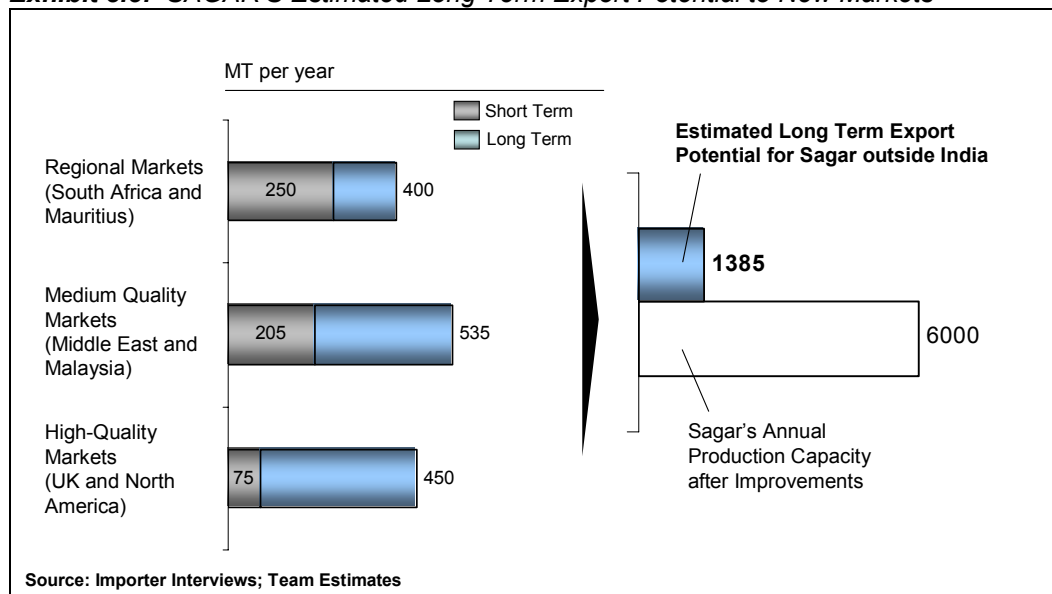
current situation, with no brand name or track record, and no possibilities to offer value-added services such as packaging, Sagar will not be able to export more than a few containers to these markets.

The graph below summarizes the characteristics required and a recommended approach for the most promising export markets for Sagar, outside of India.

Exhibit 8.2: Characteristics and Recommended Approach for Markets besides India

Segment	Main characteristics	Recommended approach
Regional Markets (South Africa and Mauritius)	<ul style="list-style-type: none"> Markets are very easily accessible and highly transparent Import community is small and relationships are easy to build Importers are keen to buy from a new supplier in Mozambique Sagar produces a sellable quality for these markets already 	<p>Sagar should market product and begin building relationships in these areas immediately</p>
Medium Quality Markets (Middle East and Malaysia)	<ul style="list-style-type: none"> Import community is complex and opaque Most sales take place through physically present representatives Markets are supplied by India, Myanmar and new mills in Dubai Sagar produces a sellable quality for these markets already 	<p>Sagar should begin building relationships in these areas but significant penetration might be difficult initially due to opaqueness and distance</p>
High-Quality Markets (UK and North America)	<ul style="list-style-type: none"> Markets are farther away Import community is small and very closely-knit High requirements for quality, reliability of supply and value add (packaging) Importers are willing to try a new supplier in Mozambique 	<p>Sagar should begin building relationships in these areas, but increase in volume will be gradual as quality improves and brand name is built</p>

Besides the above mentioned regions, few other export markets for *tur dahl* exist. A very rough estimate suggests that Sagar will be able to export about 500 tons in the short run and maximum 1400 tons in the long run to the above mentioned countries. This bottom-up estimate, summarized in the figure below, confirms the assertion made earlier that India will remain a key player for Sagar.

Exhibit 8.3: SAGAR'S Estimated Long Term Export Potential to New Markets

The assumptions for the above figure can be found in Appendix E. More detailed information of the various markets is discussed below. This information was obtained through conversations with importers of *tur dahl* in the regions:

8.3 Detailed info of potential export Markets

The main characteristics of some of the potential markets are summarized in the table below.

Table 8.1: Characteristics of Potential Export Markets

Country/Region	Preferred Source	Product Characteristics	Structure of Import Community	Importer Comments and Price Range
South Africa	Malawi	<ul style="list-style-type: none"> Medium to High quality Sharp points, Uniform size 	<ul style="list-style-type: none"> Advance Seed supplies 60% of Indian grocers. Two or three other importers share the rest of the market. 	<ul style="list-style-type: none"> Willing to buy from a new supplier in Mozambique. Price estimates ranged from \$350-500
Mauritius	Malawi	<ul style="list-style-type: none"> Medium to High quality Sharp points, Uniform size 	<ul style="list-style-type: none"> Epicerie de L'est enjoys partnerships with the major grocery chains and supplies about 40% of the market for <i>tur dahl</i>. Two or three other importers share the rest. 	<ul style="list-style-type: none"> Very excited about the prospect of a new supplier in Mozambique. Eager businessmen. Price estimates ranged from \$480-670
Middle East	India	<ul style="list-style-type: none"> Medium quality Non-Oily 	<ul style="list-style-type: none"> There are 10-12 importers of <i>tur dahl</i> in Dubai who supply most of the Middle East. Some of them are also millers. Only a handful have access to the Saudi Arabian market; others trade domestically or export to India. 	<ul style="list-style-type: none"> Importers have close ties to India and occasionally Malawi. Some have had bad experiences trading with Mozambique in the past, however are still willing to try a new supplier from the country.

UK	Malawi	<ul style="list-style-type: none"> • High quality • Sharp points, Uniform size • Oily or Non-Oily 	<ul style="list-style-type: none"> • Importers in the UK range in size from large-scale global companies to smaller family operations. • The market in the UK is difficult to penetrate. 	<ul style="list-style-type: none"> • Importers are closely linked with suppliers in Malawi. • They were not very forthcoming with information. • The market will be difficult to enter. • Price estimates ranged from \$600-675
USA	India	<ul style="list-style-type: none"> • High quality • Sharp points, Uniform size • Oily or Non-Oily 	<ul style="list-style-type: none"> • Mr. Sony's company imports about half of the dahl needed to satiate US demand. • Five or six other importers share the rest of the market. The market is highly opaque. 	<ul style="list-style-type: none"> • Importers are closely linked with suppliers in India, usually family members. • This market will also be difficult to enter
India	Gujurat or Mahara-shtra	<ul style="list-style-type: none"> • All qualities • Medium size, sharp points, no broken • Absence of immature, green grains and seed coat. • Oily dahl preferred only in Gujurat 	<ul style="list-style-type: none"> • Dahl is so widely consumed that many millers choose to supplement their output with imports from other countries. • The import community consists of countless brokers and traders for whom different aspects of the product are important. 	<ul style="list-style-type: none"> • For many Indian consumers, price seems to drive their choices. They are willing to sacrifice quality for a lower priced product. • Price estimates vary significantly depending on the buyer.

8.3.1 Regional Markets

South Africa

There is no milling of pigeon peas in South Africa, thus all *tur dahl* is imported ready or near-ready for retail distribution. Supplies arrive mainly by truck from Malawi. Only a handful of companies import *tur dahl*, and most of them are part of a closely-knit community that is sometimes difficult to penetrate. The price paid for *tur dahl* in South Africa is slightly lower than that paid in the UK or US, but the lower shipping cost could result in a higher price for Sagar. Almost all ships that call at the Nacala subsequently call at Durban, thus providing easy access to the South African market. The transport cost for Sagar compared to transport over land from Malawi should be investigated further.

Mauritius

The migration patterns beginning in India and ending in Mauritius for over a century have given rise to a widespread adoption of the typically Indian diet among all Mauritians. The country shies away from producing pigeon pea and also milling it, due to the labor-intensive nature of the process. Consumers indicate a preference for other pulses such as chickpeas to make *chana dahl* and mung beans to make *mung dahl*. Nonetheless, there is much export opportunity for Sagar, as numerous importers interviewed were excited about the possibility of importing from a new source for *tur dahl* in Mozambique.

8.3.2 Southeast Asia

The market for *tur dahl* in parts of Southeast Asia, particularly Malaysia and Singapore, is smaller than expected. However, the possibility to export does exist. For Sagar, the easiest way to penetrate this market would be to initially sell through an importer/customer in the Middle East or India. Many of the traders here also have satellite operations in Southeast Asia for trade of other products, but including some dahl.

8.3.3 The Middle East

United Arab Emirates

There are about 10-12 major importers of *tur dahl* in the UAE. They generally buy *dahl* of Indian origin and redistribute it to retailers all over the Middle East, India and Myanmar. Due to the opening of export-oriented processing zones, *dahl* processing plants have been established in Dubai, processing whole grain of African origin for local consumption and for exports. This has been indicated as a source of competition for African *dahl* exports, although, some millers still import to supplement their own output. There is also a 4% tariff levied on imports of all pulses, raw and processed.

Saudi Arabia

Saudi Arabia is one of the largest markets in the world for *tur dahl* after India. However, the trade community is highly opaque. Virtually all *dahl* is shipped from Dubai on trucks. Most of the cargo is rejected at the border unless the parties involved enjoy special trading "privileges." Bribes to customs officials are common and political connections are often wielded as well. Only a handful of companies enjoy the ability of guaranteeing cargo delivery to Saudi Arabia. Those companies could not be identified at the time of writing.

8.3.4 Europe

Tur dahl is considered an ethnic product that has yet to cross over into mainstream European cooking. The European consumption of pigeon peas and *tur dahl* is centered on the United Kingdom (UK). The prospects for growth in UK demand are not encouraging. Demand for *tur dahl* in the UK grew rapidly during the 1960s and 1970s when immigration was high. Subsequently, demand stagnated and some sources believe that the market is declining. Consumption seems to have been maintained by first generation immigrants, but subsequent generations have taken up European, or US convenience foods³

Consumers in the UK demand a very high quality product. Importers indicate that their preferred source is Malawi and this origin is taken as the benchmark grade. *Tur dahl* from Malawi are known to cook well without residue and the product reduces to a smooth soup. The Malawian suppliers are also closely connected to the trade in the UK.

8.3.5 North America

³ Jaeger, P-M. L. (1998). "The Market in Europe for East African Pigeon Peas." TechnoServe Inc., pp. 5-6

The United States market for *tur dahl* is about the same size as that of the UK's but less transparent. While there are countless Indian grocers across the country, there are fewer wholesalers and only about six or seven people who actually import *tur dahl*. About half of the market is supplied by one company, and the five others make up the rest.

Supplies to the US generally come directly from India, pre-packaged but not necessarily branded. Package sizes range from 2 lbs. to 55 lbs. in size, with a general preference for 6 lbs. or 10 lbs. bags. The Canadian market is smaller than the US market. Supplies to Canada also come from India directly. Imports are usually arranged through family businesses.

8.3.6 India

Although India is the world's largest consumer of *tur dahl*, African exports to India are discouraged by a tariff of 10% levied on imports of all pulses, raw and processed. In India, the determining factor of success for most importers is price. As a staple product, low to average quality *tur dahl* can be sold for reasonable prices. At the consumer level, the relevant quality traits of *tur dahl* are the sweetness of the taste and the easiness to cook. However, since these traits are not identifiable when buying the *dahl*, Indian consumers assess grain quality on the basis of examination of their physical characteristics which have been summarized in the table above.

First grade (non oily) *tur dahl* in Maharashtra is made of medium to small splits with the sharpest edge, no green halves, and virtually no coat residues on the cotyledons. These criteria are applied both by millers when examining the output of the milling machine, and by consumers in the wholesale and retail shops.

However, for some consumer groups (mostly of Gujarati origin), oily *dahl* is preferred, and it appears that this is associated with bolder seeds. However, in other areas of the country there is no evidence of a preference for *dahl* made of bold grains. On the contrary, consumers are used to medium size *dahl* because this is the most commonly used by millers due to the milling performance.

In addition to the above criteria, the area of origin is generally used as a proxy to identify the quality of *dahl*. In fact, the origin is a commonly recognized, yet not standardized, branding criterion. It is not clear what the rationale is for the distinction between different origins (whether grain quality or processing characteristics). The important point is that pricing at the wholesale and retail links follows the grading system.

A representative sample of prices collected at the wholesale grain market of Mumbai illustrates the differences in prices by origin and grade.⁴

Table 8.2: Tur dahl prices at Vashi wholesale market, Mumbai (USD)

Grade	Gujarat	Maharashtra	Myanmar	Malawi
Tur Dahl – 1 st Grade	688	541-562	438	479
Tur Dahl - 2 nd grade	542	480	375	416
Tur Dahl – 3 rd grade	438-458	416	354	375

⁴ Lo Monaco, Gabriele. (2003). "Competitiveness of African Pigeon Pea Exports in International Markets." ICRIAT Working Paper Series, no. 15, p.18-9.

8.4 Potential Buyers

Below is a list of potential buyers whom we have contacted, most of whom responded positively. A few of the ones listed were helpful, but only trade raw pigeon pea. All sales will be primarily dependent on the price and the quality of the samples provided. The following rankings were used:

- 1 = contact was very interested, well-connected and friendly.
- 2 = contact was interested and somewhat knowledgeable.
- 3 = contact was neutral but not averse to adopting a new supplier.

Country/ Region	Organization	Contact Information	Background	Rank and Remarks
Switzerland/ Europe	ConAgra	Bruno Utelli Tel. +41 22 34 12 26 9	Typically deals in raw pigeon pea trade. Is very helpful as an information source as well.	1 Very enthusiastic about buying from a new supplier.
Netherlands/ Europe	Casi Trading	Mr. Leslie Van Goethem Tel. +31 16 42 45 800	Imports raw pigeon peas and does not usually deal in dahl.	2 We have been in touch over e-mail several times to discuss the import of raw product from Mozambique. He is very keen and is currently buying (Jan 2005).
Netherlands/ Europe	Alanheri BV	Mr. Cor Hage Moleneind 2 4268 GD Meeuwen The Netherlands Tel. +31 416 358450 Fax. +31 416 352704 corhage@alanheri.nl	Alanheri is one of the largest traders of pulses in in Europe. However, according to TechnoServe staff in the UK, the amount of pigeon peas they move is relatively small.	0 TechnoServe had a misunderstanding with Mr. Hage in the past, thus it is best not to mention the relationship or details of it.

UK/ Europe	NATCO Foods	Kishor Pagarani or Prashad Tel. +44 208 903 8311 info@natcofoods.com	High quality required. Buying dependent on sample.	3 Neutral but not disinterested
UK/ Europe	Eurotrading Produce Ltd.	Mr. Allistair Todd +44 1 82 34 21 880	Does not import dahl but sometimes trades raw pigeon peas.	2 Very helpful in retrieving information about the market in the UK or referring us to others.
UK/ Europe	Patak's Foods Ltd.	UK: +44 01942 267 000 Canada: +1 905 625 4000 US: +1 800 726 3648 Australia: +612 8874 6500	Patak's pre-packaged foods are well recognized in Europe, North America and Australia. They have excellent penetration in grocery stores and supply most of the restaurants in the UK.	0 Discussions with Buyers or Product Developers may prove beneficial in the future. We were not able to speak directly with a buyer in the UK and only to the PR firm in Canada. It would be wise to have a fairly good quality product, consistently, before approaching Patak's or others like them.
US/ North America	House of Spices	Mr. G. L. Sony 127-40 Willeth Point Blvd. Flushing, NY 11368 – USA Tel. +1 718 507 4600 hosindia@aol.com	Mr. Sony is the supposedly largest importer of dahl in the US supplying about half of the market. He is difficult to reach but very straightforward and pleasant when you finally get to him.	1 It is difficult to speak to Mr. Sony directly, however, keep trying. Messages do not generally reach him in a timely fashion. He comes into the office after noon.

UAE/ Middle East, India and Southeast Asia	Petro Gold Int'l LLC	Dubai Contact: Mr. JP Goenka PO Box 522207 Dubai – UAE goenka@emirates.net.ae India Contact: Mr. SP Goenka +91 982 111 8635 ibpc@vsnl.com	Petro Gold is organized and helpful. It is a family business with mills in Myanmar as well. They also have an office in Rangoon.	1 Very responsive, knowledgeable and helpful.
UAE/ Middle East, India and Southeast Asia	T. Choitram and Sons (also represents NATCO Foods in Dubai)	Mr. Giresh or Mr. Mohan Lalwani PO Box 5249 Dubai – UAE Tel. +97143479974 Fax. +97143471260	Representative for NATCO Foods based in the UK. Also trades in Southeast Asia.	3 Seemed disorganized and not willing to share information. A little difficult to communicate with, but still was able to get some information.
Mauritius	Distribution Plus Lte.	Mr. Sukash Parmanan Tel. +230 696 1403 Mob: +230 252 0558 tmaster@intnet.mu	Was not able to gauge level of activity, but seemed very keen. Also an avid businessman and will look for other opportunities to partner on projects in Mozambique.	1
Mauritius	Grain and Spices Ltd.	Mr. Manish Proag 4 Imam Mustapha Hammad, X Fontaine Street Port Louis – Mauritius Tel. +230 2420398 Fax. +230 2169466 granspi@intnet.mu www.mauribiz.com/gsl	Company has not imported dahl for two years, but seemed very keen on starting again	1

Mauritius	Epicerie de L'est Lte.	Mr. Mohammed Iqbal Husseini Camp de Masque Flacq Republique de Mauritius Tel. +230 416 5367 Mob. +230 516 0471 edl260@intnet.mu	Company claims 40% of the market share in Mauritius and enjoys contracts with major supermarket chains. Depending on demand, they would import 22 tons every 1-2 months.	1 Very enthusiastic - emphasized a need for high quality to uphold reputation
South Africa	Bester Voer-en Graanbeurs	Mr. Grant Lyons Tel. +27 21887 7188 grant@bester.co.za	Imports a small amount of raw pigeon peas each year. Does not import dahl.	3
South Africa	Advanced Grain	David Lever, Advance Grain CC Tel. +27 11 762 5261 seedjhb@iafrica.com	Trader, of which, 60% of his buyers supply the Indian market. High quality required.	1 Was very keen to explore new suppliers.
South Africa	D Kingsbury	Mr. Kingsbury 42 GwiGwi (formerly Pim) Street Newtown, Johannesburg Tel. +27 11 832 1237		2 Interested in prices
South Africa	AIT Group	Mr. Frank Crane 376 Delphinus Street Waterkloof Ridge Pretoria Tel. +27 12 346 8983 Fax. +27 86 672 8485 aitinvest@mweb.co.za	AIT deals in numerous commodities including pulses. They trade primarily with Malawi, Swaziland and Zambia (mostly sugar).	3 Communication has been over e-mail thus far and generally impersonal. We were not able to gauge the level of interest, but information about Sagar has been relayed to their buyers.

South Africa	Paul Pretorius	Campo Distributors 18 Barratt Street Factoria, Krugersdorp Tel. +27 11 955 1819 campo@hixnet.co.za	Company imports a few hundred tons of dahl annually.	1 Needs 1-2 kg sample. Seemed very interested.
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9 Conclusions and next steps

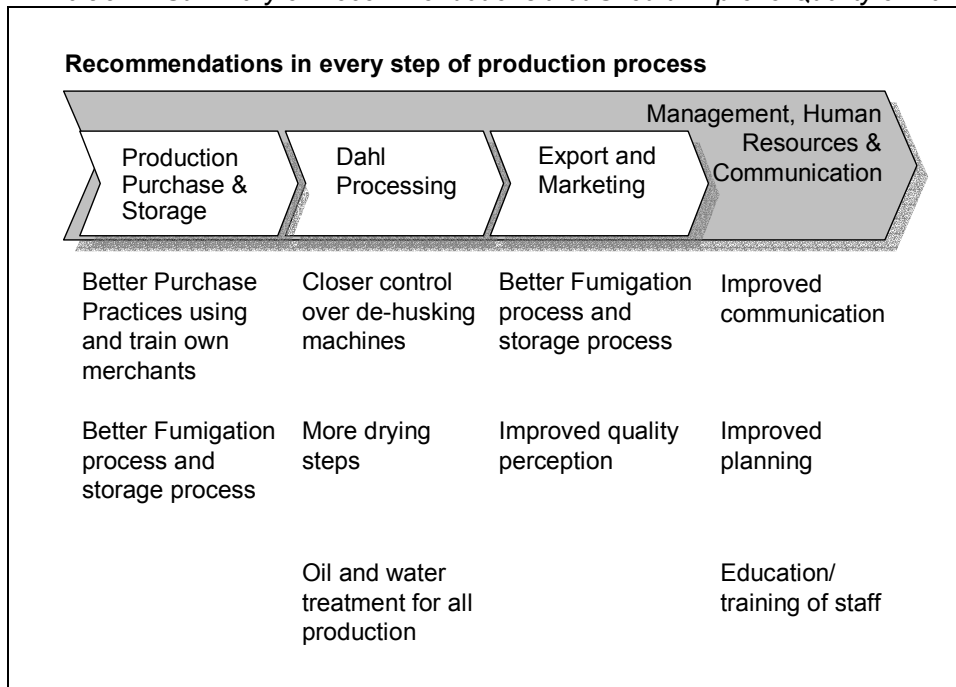
9.1 Conclusions

This report contains a large number of suggestions for improvement. Some of them will require more careful evaluation and research and this report is clearly not a final solution but a starting point for continuous improvements on the production and marketing of dahl.

If the recommendations are successfully implemented the total maximum capacity that could be reached is estimated at 35 MT per day (see exhibit in section 4.3), provided that besides technical improvements the management will be more effective and increased sales will create additional pressure on the production.

Quality has already improved considerably. To continue this, measures need to be taken at all steps of the production process, from the selection of the raw material to the final polishing and packaging. The figure below summarizes those proposed measures that are believed to have a direct effect on overall dahl quality and quality perception.

Exhibit 9.1: Summary of Recommendations that Should Improve Quality of Dahl



An overview of the main recommendations that were presented on December 22 can be found in Appendix F.

Finally, a marketing strategy has been proposed and importer contacts have been provided. But the gap that was created after the relationship with Mr. Balai became strained must be filled not just by creating contacts but, more importantly, by shifting the internal focus of Sagar to marketing: Customer preferences need to be clear to everyone

in the factory and the expected sales should determine the purchase strategy, the production schedule and the production parameters.

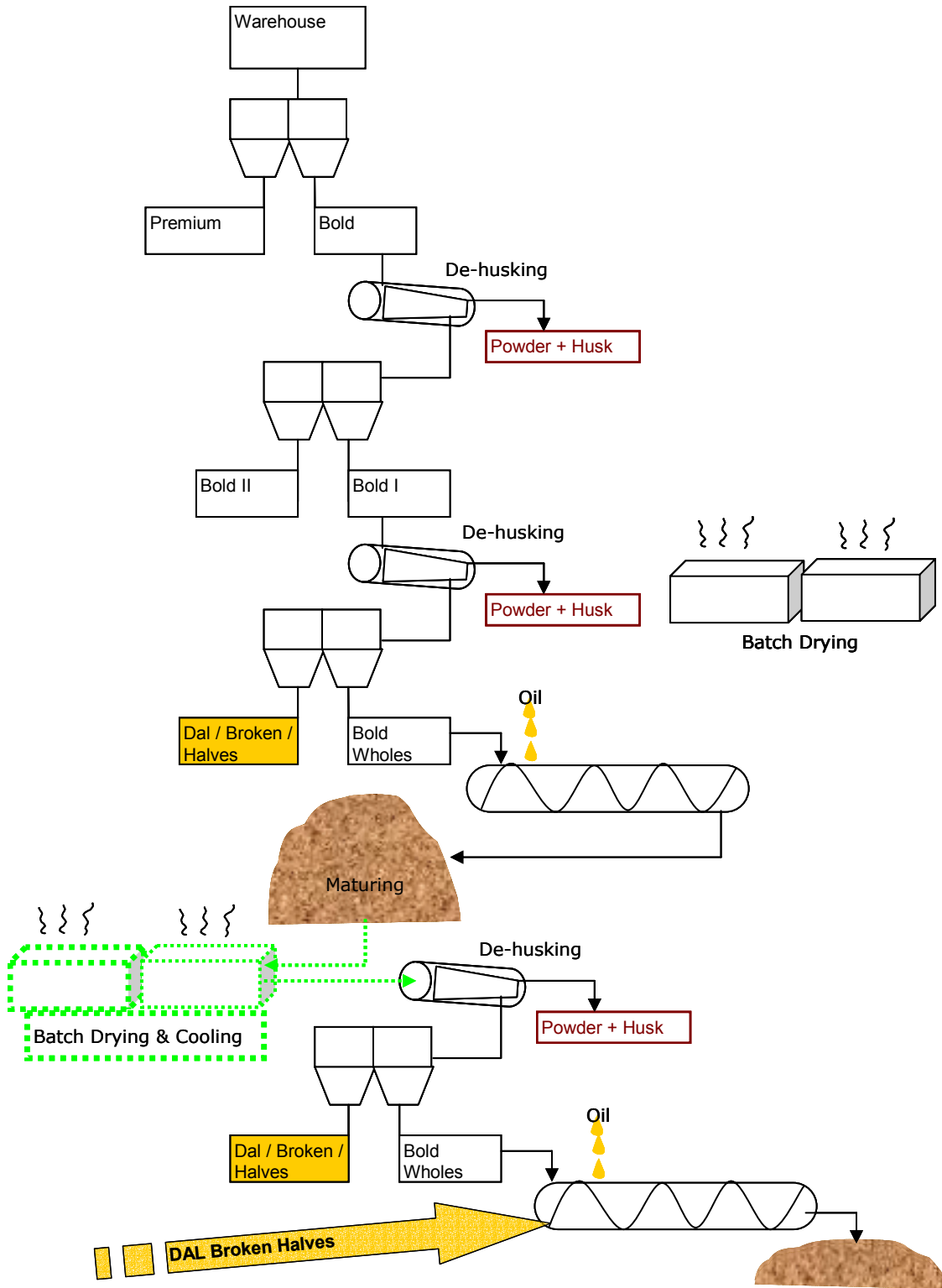
9.2 Next steps

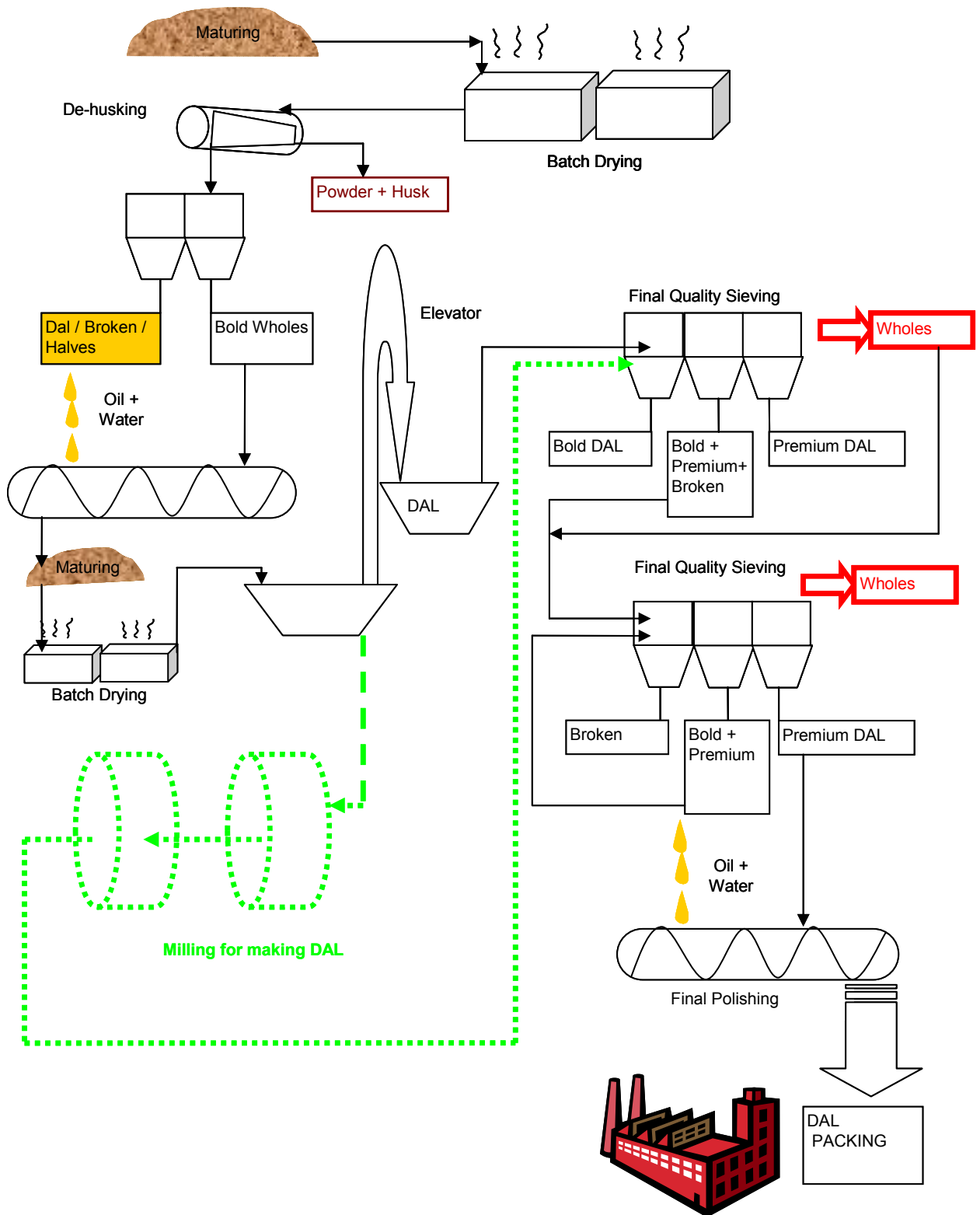
Sagar has already started to implement many of the recommendations and it is important to continue this while closely monitoring the implementation process and evaluating the improvements. Besides specific technical improvements this report proposes culture changes such as increasing the focus on marketing and improving the communication and coordination.

TechnoServe would be happy to continue to support Sagar and discuss the details and results of the recommendations made in this report. Furthermore, some specific improvement areas will require additional work, where TechnoServe support could be helpful. These areas could include:

- Overall support on marketing
- Further analysis of export options, e.g., compare cost of export through Beira and Nacala, estimate the export cost of transport to South Africa over land, compare transport cost with Malawi millers, and investigate various options for loading at or near factory.
- Develop a more specific purchase strategy and answer questions such as:
 - Which areas should be covered with Sagar's own merchants
 - What extension service should be provided to the farmers
 - What is the optimal remuneration scheme for Sagar's merchants
- Develop a specific intra- and inter-factory reporting format and system
- Assist in purchase of own production plot Riasse, e.g., by helping construct business case, plan and finding potential investors

Appendix A: Detailed overview Dahl processes





Appendix B: Summary of study of Malawian Dahl manufacturers

TechnoServe staff visited four factories over two days. The table below summarizes observations from these visits that may be of interest to Sagar:

Name and contact	Production / General	Marketing and sales	Comments on Sagar	Potential buyer
TRANSGLOBE				
Contact Mr H. Singh Transglobe product export P.O. box 5035 Limbe 00 265 01 645 643 00 265 08844285 transglobe@Malawi.net	- 65% yield and use two factories right next to each other - Produce six days a week, 10 hour a day - Diesel driers - Produce according to demand - Has been running for over 20 years - Factory is very simple, using sieves for separators	- Markets are mainly India. - Have a very small, rounded product which they say is Chinese dahl as opposed to the local produced seed - Only two products, large and small, all splits and husk etc. get thrown out and sold as cattle feed.	- Liked the sagar sample - Knew straight away that it was from Mozambique	- Interested in buying raw material and the finished Bold 1 and Premium 1 only. - Anything bought would have to come to Malawi.
HMS FOODS AND GRAINS LTD.				
Contact Owner: Mr. Bharrat Finance: Mr. A. Mohanakrishnan Chigumula, P.O.Box 5406, Limbe 00 265 657 199 00265 09 966 111 mohan.hms@africa-online.net	- Would not allow me to see the factory - Have been going for over 40 years - Possible that his factory is very up to date as he mentioned machinery from Germany.		- Complete shock at the fact that we had five grades, he only has two to be able to sell all - Considers SAGAR as competition.	- Would export from Moz as the import taxes into Malawi were too high and then he would have to reexport.. - Will buy the first two grades - Said that the other qualities would be embarrassing for him to put on the market as is
COMMODITY PROCESSORS, RICE MILLING				
Contact Mr Abbas Mukadam Commodity Services Pvt. Ltd. P.O. Box 198, Blantyre 00 265 01 670 700 Cell: 00 265 8821966	- Very simple factory, plenty of expertise, running for over 17 years - Mr Abbas Mukadam is managing director and knows exactly what he is doing, studied in Cape Town and the U.K., Mba and Bsc. - A very small factory - Sorting by sieves - Electric and diesel driers - Three dehussing stages - Small storage bins, circular made of tin, capacity of 6/7 tonne per 12 hour day	- Sells on demand, as soon as a container is full it goes. - All splits etc are thrown out as cattle feed in order not to run down the quality. - Markets are U.K., India, Malasia, Singapore, etc.	Very impressed with our first grades, not with the second. He only sells two types, large and small.	Will buy 100 tons as a trial now and will blend the two on a 60 % seconds with 40% first.
RAB PROCESSORS LTD.				
Contact: Mr. Shaheen Mussa (Logistics Manager) Mr. Afzel Thassim (Finance Director) Rab Processors, Ltd. P.O. Box 5338 Limbe 00 265 01 645 200 00 265 1 645 914 Cell: 00 265 8 844 515 om@rabmw.com	- A very organized set up with plenty of scope - Machines very simple, with sieves as separators - Capacity around ten tons per 10 hour day - Driers are wood and diesel. - Also been existence for over 20 years - Most of his produce comes from Moz.	Sells to India, Malasia, Singapore and U.K.		- Will buy the first grades, not the second - Will want it transported back to Malawi first.

General Conclusions:

- Compared with the Malawi processors, Sagar has a very high capacity factory that could easily increase output to 20 tons per 12-hour day with some improvements in efficiency

- The quality of Sagar's product compares very favorably with that of Malawi's millers.
- The window in India of 15 days to sell raw material can only be achieved on a pre-contract basis with a buyer in India.

As described in the main report (part of) the current stocks can be sold to millers in Malawi. The following process could be used:

- Sell 100 tons to Commodity Processors immediately.
- Confirm condition of material in Nacala
- Send e-mail to all the above and state what Sagar has in stock and offer it for sale stating what price Sagar would require.
- Start looking for own markets with raw product that is being processed now.

Appendix C: Nomenclature New Batch System

X Y Z A PQRS LM

X= Month of production converted into the alphabets

Y=Year of production converted into the alphabets

Z= Sagar

A= Zambezia

The last two letters are added to confuse the customer so as not being able to de-code the batch numbers and so that Sagar knows the year and month of production.

PQRS= progressive numeric numbers given for each batch of production starting from 1001, all the dahl made so far is labeled as 1001 as of December 20, 2004.

LM= The Grade: Bold / Premium / Superior etc.

Superior is a new grade introduced with the improved quality during TechnoServe's visit.

KDSZ 1001 PREMIUM 1 Sagar Zambezia Lda, Moz. mathew.mathew@sci.co.mz	KDSZ 1001 PREMIUM 1 Sagar Zambezia Lda, Moz. mathew.mathew@sci.co.mz	KDSZ 1001 PREMIUM 1 Sagar Zambezia Lda, Moz. mathew.mathew@sci.co.mz
KDSZ 1001 PREMIUM II Sagar Zambezia Lda, Moz. mathew.mathew@sci.co.mz	KDSZ 1001 PREMIUM II Sagar Zambezia Lda, Moz. mathew.mathew@sci.co.mz	KDSZ 1001 PREMIUM II Sagar Zambezia Lda, Moz. mathew.mathew@sci.co.mz
KDSZ 1001 BOLD 1 Sagar Zambezia Lda, Moz. mathew.mathew@sci.co.mz	KDSZ 1001 BOLD 1 Sagar Zambezia Lda, Moz. mathew.mathew@sci.co.mz	KDSZ 1001 BOLD 1 Sagar Zambezia Lda, Moz. mathew.mathew@sci.co.mz
KDSZ 1001 BOLD II Sagar Zambezia Lda, Moz. mathew.mathew@sci.co.mz	KDSZ 1001 BOLD II Sagar Zambezia Lda, Moz. mathew.mathew@sci.co.mz	KDSZ 1001 BOLD II Sagar Zambezia Lda, Moz. mathew.mathew@sci.co.mz
KDSZ 1001 PREM SUPERIOR Sagar Zambezia Lda, Moz. mathew.mathew@sci.co.mz	KDSZ 1001 PREM SUPERIOR Sagar Zambezia Lda, Moz. mathew.mathew@sci.co.mz	KDSZ 1001 PREM SUPERIOR Sagar Zambezia Lda, Moz. mathew.mathew@sci.co.mz
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Appendix D: Grain Quality Traits Relevant for the Milling Industry

	Africa	Myanmar	Yellow Pea
Grain size	Medium to large	Medium to small	Large
Grain shape	Round	Round	Round
Easiness to de-hull	Low	Fair	Very high
Cleanness	High	Low	High
Weeviled grains	Fair	High	Low
Homogeneity	High	Low	High
Average yields %	65-70	65-75	90

Appendix E: Assumptions for Estimating Size of Potential Export Markets for Sagar

Based on importer interviews and data on the size of the community of people of Indian origin in each country, the following estimates have been made about the total market size and the potential market share for Sagar. These estimates have large uncertainties and strongly depend on market developments and on developments within Sagar.

	Market Size	Potential Market Share Sagar	
		Short Term	Long Term
South Africa	1000	15	25
Mauritius	500	20	30
Middle East	2500	5	15
Malaysia	1600	5	10
UK	1500	5	15
USA	1400	0	10
Canada	850	0	10

Appendix F: Overview of Main Recommendations as Presented to SCI

MAIN RECOMMENDATIONS PURCHASE AND STORAGE PROCESSES (Chapter 3)	
Issues	Solutions
<p>No price differentiation according to:</p> <ul style="list-style-type: none"> • Moisture Content • Insect-affected • Grain Size and Appearance <p>Reliance on one person</p> <p>Inadequate planning of purchase process, examples include:</p> <ul style="list-style-type: none"> • Last year no money and lack of woven sacks • Not clear if agents had to buy for process or export • Sagar was not able to profit from the high price period for raw pigeon peas • Insufficient record keeping <p>Poor storage and fumigation</p>	<ul style="list-style-type: none"> • Differentiate price • Train buyers on what to look for • Use moisture content analyzer <ul style="list-style-type: none"> • Job rotation and sharing of responsibilities <ul style="list-style-type: none"> • Purchase planning and communication in advance in Maputo and in Gurue • Clearly defined responsibilities • Selection of product <ul style="list-style-type: none"> • Better storage practices: Off the ground, with a possibility to fumigate if necessary, keeping a watchful eye on humidity and on infestation by bugs

MAIN RECOMMENDATIONS DAHL PROCESSING – QUALITY ASSURANCE (Chapter 4)	
Issues	Solutions
<ul style="list-style-type: none"> • No manual adjustment of roller gap <ul style="list-style-type: none"> • Insufficient drying <ul style="list-style-type: none"> • Insufficient water polishing 	<ul style="list-style-type: none"> • Exercise closer control over de-husking machines as explained to the dahl maker by feed rate and back pressure control methods • Roll filling in three steps, to be used as per the raw material <ul style="list-style-type: none"> • Dry material after first maturation • Dry raw material before initial feed <ul style="list-style-type: none"> • Polish 100% of product with water and oil unless specific demand for oily product

MAIN RECOMMENDATIONS EXPORT AND MARKETING (Chapter 5)

Issues

- Insufficient attention to marketing, no marketing departments
- No batch identification system, so customer does not get same quality as sample
- Quality deterioration of end product
- Insufficient knowledge of market and of main importers

Solutions

- More people focused on marketing
- Create brand and promotion material
- Implementation of Batch codification and product identification system (already installed)
- Improved storage and fumigation practices
- Market study and importer contact list

MAIN RECOMMENDATIONS MANAGEMENT AND COMMUNICATION (Chapter 6)

Issues

- Insufficient communication between Maputo and Gurue and long lag time in critical decision-making. For example:
 - No reports
 - No counter samples in Gurue
 - Samples in Maputo do not match the product in warehouse
 - No feedback to Gurue on quality, production schedules, pricing
- Insufficient communication intra factory
 - Absence of common language in staff
 - No records and reports
- Insufficient human resources
- Lack of motivation

Solutions

- Delegation by top management
- Matrix structure of management
- More communication facilities at the Gurue factory like fax, email etc.
- Report on weekly and monthly basis using of common formats
- Implementation of Batch codification and product identification system
- Training / Coaching
 - Language course to staff
 - Basic computer skills
- Report on weekly and monthly basis using of common formats
- Hire factory manager, marketing manager and assistant dahl maker
- Create amenities for staff
- Revise salary structure

Confidential

Number of Assisted Enterprises under NEW TREND				FY 2001	FY 2002	FY 2003
#	Sector	Client	Status			
1	Cashew	ADDP	Inactive		x	
2	Cashew	Africaju	Active	x	x	x
3	Cashew	Alexim	Active		x	x
4	Cashew	Anacardia Lda.	Initial			x
5	Cashew	Atija Nuts	Active		x	x
6	Cashew	CaboCaju	Inactive	x		
7	Cashew	Cajubar Lda.	Initial			x
8	Cashew	Condorcaju Lda.	Active			x
9	Cashew	Geralco Caju	Active			x
10	Cashew	IPPCM	Active	x	x	x
11	Cashew	Macia	Active		x	x
12	Cashew	Mauricaju	Active			x
13	Cashew	Miranda Angoche	Active		x	x
14	Cashew	Miranda Mogincual	Active	x	x	x
15	Cashew	Moma	Active			x
16	Cashew	Niali	Inative	x	x	
17	Cashew	Qualicaju	On hold (too small)	x	x	
18	Cashew	UGC	On hold (too small)			x
19	Horticulture	CITRUM	Active	x	x	x
20	Horticulture	EAM	Active			x
21	Horticulture	Flora Mocambique	Active		x	x
22	Horticulture	Frutas Lango	Out of biz		x	
23	Horticulture	Pimenta de Mocambique	Active			x
24	Horticulture	Vanduzi (Waluru)	Active		x	x
25	Horticulture	Vilmar	Active		x	x
26	Livestock	COTA	Active			x
27	Macadamia	Tenga	Active			x
28	Oilseed	Cuti Oilseed	Inactive	x		
29	Oilseed	Gallo Oilseed	Inactive	x		
30	Oilseed	ManicaOils	Inactive	x		
31	Oilseed	Optima	Active		x	x
32	Oilseed	Ribaue	On hold (too small)	x	x	x
33	Oilseed	Semedo	On hold (too small)		x	x
34	Oilseed	Servir	Active			x
35	Pulses	AICNE Pigeon Pea	Inactive	x		
36	Pulses	APS Holdings	Inactive	x		
TOTAL				13	18	26

	FY 2001	FY 2002	FY 2003
Cashew	6	10	14
Horticulture	1	5	6
Oilseed	4	3	4
Pulses	2	0	0
Other	0	0	2

EMPRENDA PROGRAM SUMMARY

With USAID support, ACDI/VOCA, CLUSA and TechnoServe, Inc. (TNS) have made substantial progress in developing new rural enterprises in Mozambique. Since January of 2002, rural enterprises assisted by these three organizations—mostly start-ups—generated \$6.8m in revenues. However, significant obstacles continue to limit rural development, including low productivity, paucity of skills, and a lack of capital. Critical linkages across value chains and between buyers and sellers are weak. Women are unable to appropriately participate in and benefit from productive economic activities. Rural infrastructure is lacking. Given these constraints, most small producers have little choice but to focus on meeting their day-to-day subsistence needs.

In response to these obstacles, ACDI/VOCA, CLUSA and TNS have formed the **EMPRENDA Alliance**. The Alliance's objectives are to increase per capita rural family incomes and to promote productive asset accumulation: high priorities for both USAID and the Mozambican government. Our strategy is one of focus: to create and strengthen sustainable, competitive rural enterprises and farmer associations operating in the three value chains where we believe smallholders have the greatest potential to increase their incomes: **high value horticulture** (fruit, vegetables, and floriculture), **confectionary nuts** (cashews, groundnuts, and macadamias), and **field crops / animal feeds** (oilseeds, legumes, and cereals). This focus on key high opportunity areas will maximize impact by:

- 1) building on recent successes in these sectors, such as vegetable and flower exports from Manica and growth in the cashew processing sector and sesame seed exports from Nampula, and;
- 2) permitting us to take an integrated approach, addressing all elements required to build strong smallholder associations and competitive rural industries.

Through this integrated and market-driven approach, the EMPRENDA Alliance will help generate \$6.6 million in sales by associations and \$15.5 million in rural enterprise revenues as well as mobilize \$6.3 million in new finance by 2007. In order to achieve these targets, we will strengthen 540 primary farmer associations and assist 34 rural enterprises – mostly start-ups. Our impact will be bolstered by driving the development of supporting industries (such as financial services and input suppliers), improving the coordination of various stakeholders, increasing the participation and leadership roles of women, and building local capacity for infrastructure construction and maintenance. The following program summary outlines our approach for driving agribusiness development in the Beira and Nacala Corridors, including our proposed team structure, our objectives, our key activities and expected impact.

EMPRENDA STRUCTURE

The EMPRENDA Alliance will be managed by TechnoServe, Inc., which has offices in both Corridors (Nampula, Lichinga, and Chimoio) as well as Maputo. TechnoServe will be the provider of BDS in both corridors, and ACDI/VOCA and CLUSA will provide the association development services in the Beira and Nacala Corridors, respectively. TechnoServe – through its Operations Director and Senior Horticulture Advisor – will also play a key role in helping

both partners recruit and retain excellent Mozambican talent. Such nationals will be critical to ensuring the sustainability of the EMPRENDA strategy – well after the end of the three-year EMPRENDA program.

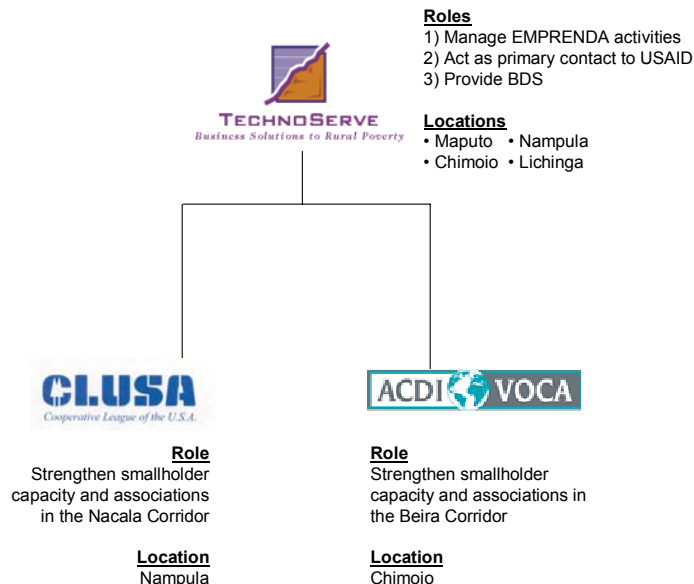
TechnoServe, Inc is an international business development organization that believes that private companies are essential to accelerate rural economic growth, improving incomes and employment. Our 36 years of experience has led us to understand that in order to improve rural incomes in the long-term, we need to improve company level performance. We design and implement programs to create and strengthen agribusiness capacity and foster pro-poor economic growth. To date, we have assisted over 1,200 rural businesses in 21 countries throughout the developing world. We leverage the expertise of some of the world's leading corporations including McKinsey & Company, Cargill, and Young & Rubicam to help our clients build globally competitive companies that benefit the rural poor. In Mozambique, since 1998, TNS has played a key role in revitalizing the country's cashew processing sector and catalyzing development of a globally competitive horticulture sector.

ACDI/VOCA is a private international development and consulting corporation founded in 1963 to promote economic opportunities for cooperatives, businesses and communities through the innovative application of sound business practices. ACDI/VOCA members represent the U.S. farm credit banks and more than 40 U.S. agribusinesses. ACDI/VOCA has worked in 144 countries, including 42 in sub-Saharan Africa. It provides advisory services in several areas including agricultural systems, enterprise development, and financial services. In Mozambique, its Reinforce Business for Rural Development (RENDER) project works with rural groups in Manica Province to enhance farmer organization and promote smallholder agribusiness development. RENDER analyzes market chains for key commodities and then targets technical assistance to address weak and missing market linkages. RENDER has also introduced new production and value-added processing technologies for a variety of crops and organized regional trade fairs, benefiting 12,040 indirect beneficiaries in addition to its 2,208 association members.

CLUSA. Founded in 1916, the Cooperative League of the USA (CLUSA), now doing business as the National Cooperative Business Association (NCBA), is the oldest national cooperative development and cooperative membership association in the United States. CLUSA's programs include services to cooperative business in the United States; technical assistance to cooperatives, farmers' groups, micro enterprise organizations, and village level associations in the developing world; and promotion of trade among the world's cooperatives. CLUSA has worked in 79 countries and currently has 25 projects operating 17 countries. CLUSA has been operating in Mozambique since late 1995. Initially in 3 districts of Nampula, CLUSA is now operating in 15 districts and 3 provinces. Over the last 3 years CLUSA provided direct and indirect marketing assistance to 728 Rural Group Enterprises and 102 women's groups, involving 25,000 farmers in northern Mozambique. 102 FORA (secondary farmers' marketing associations) have also been formed, of which 28 have become incorporated as associations. In the last two years, combined sales by assisted groups totaled \$2.1M with an estimated \$102,000 in profits.

We propose the following structure and high-level roles across the three Alliance partners:

RELATIONSHIP AMONG EMPRENDA IMPLEMENTING PARTNERS



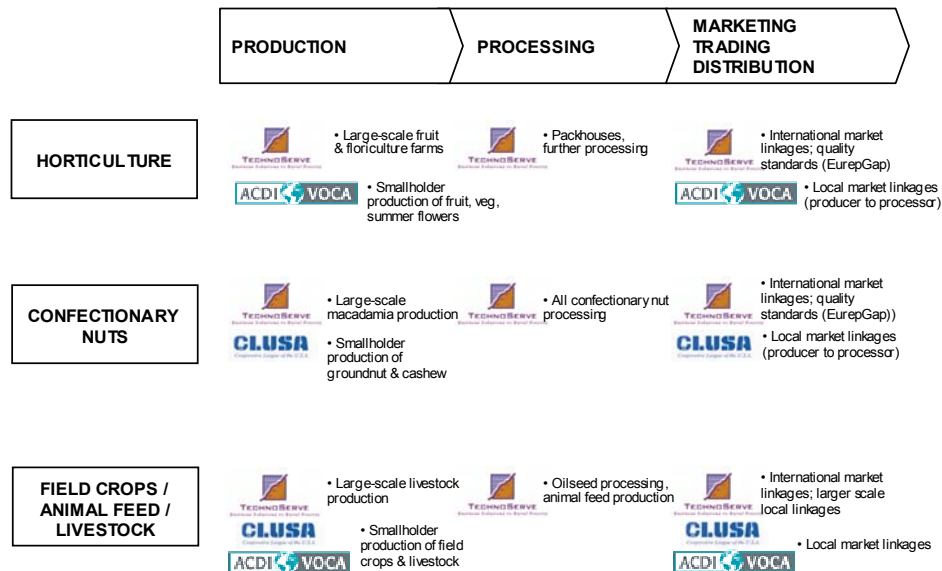
It is extremely important that all partners are in constant communication with each other in order to collaborate across the three value chains. We propose that this be done:

- Through daily communication between Maputo and the field and among relevant business advisors in the target corridors, which will be facilitated by sharing office space in Chimoio, Nampula and Maputo
- Through ongoing meetings with the EMPRENDA Operations Director, who will spend at least 30% of his time in the Beira Corridor and 30% in the Nacala Corridor, ensuring proper coordination across partners and integration of BDS with association development
- Through monthly conference calls among the EMPRENDA Director and the senior managers of CLUSA and ACDI/VOCA, which will identify new areas of collaboration, share lessons learned, and solve outstanding issues
- Through quarterly coordination meetings among all EMPRENDA professional staff, rotating between offices, which will enable field staff to share approaches to rural development and make further linkages across the value chains
- Through staff exchange visits between corridors
- Through development of common association development and marketing materials

Further, the value chain approach of the EMPRENDA Alliance means that each of the three implementing partners must collaborate across each activity on the value chain (from production to processing to marketing).

We propose the each implementing partner has the following focus area(s) across the three target value chains: horticulture, confectionary nuts, and field crops/animal feed/livestock:

IMPLEMENTING PARTNERS' FOCUS AREAS ACROSS THE VALUE CHAIN



OBJECTIVES & RESULTS

The Alliance's primary objective is to increase rural family incomes and promote productive asset accumulation. To achieve this, we will focus on creating sustainable, competitive industries within three high potential value chains. Specifically, we will facilitate:

- 1) effective, accountable and sustainable farmer associations, and;
- 2) the creation of profitable rural enterprises across the value chain

We will deepen our assistance to Nacala and Beira Corridor associations and extend our business development services to start-ups and existing – but previously unassisted – rural enterprises. Over a three-year period, our assistance is expected to have the following impact:

	Est. Baseline	Year 1	Year 2	Year 3	Total
Sales of Associations (USD Millions)	< 1.0	1.7	2.2	2.7	6.6
Revenues of Rural Enterprises (USD Millions)	3.5	4.0	4.8	6.7	15.5
Value of Financing Mobilized (USD Millions)	1.4	1.8	2.0	2.5	6.3

We also anticipate the following number of farmer associations and rural enterprises will benefit from our assistance:

	Year 1	Year 2	Year 3
# of Tier 1 associations	410	474	540
# of Tier 2 associations	38	44	50

	Year 1	Year 2	Year 3
# of member households	11,500	14,590	17,690
# women members	3,552	4,782	6,331
# of rural enterprises	23	29	34

We expect to achieve the following points (as defined in APS-04-008) for our BDS assistance to rural enterprises linked to the three value chains. Please note that some enterprises may have more than one attribute (e.g., be women-owned but also have an out grower scheme).

Attribute of Assisted Rural Enterprises	# in Year 1	# in Year 2	# in Year 3	Total Points
Non Farming Business Start-ups	7	9	10	260
Existing		2	3	25
2 nd Tier Service		1	1	10
Out grower scheme	19	24	29	216
Relocation	1	2	2	15
Prior BDS client				0
Women-owned	2	2	2	12
Total Points	133	186	219	538

Additional EMPRENDA results will include:

- Significant training of Mozambican entrepreneurs through management internships with lead enterprises and continued coaching of our respective staffs, some of whom will be expected to exit the NGO world and create their own agribusinesses
- Stronger linkages between smallholder producers and buyers (including processors) through our value chain approach
- Increased collaboration among all stakeholders, including government, other NGOs, associations, rural enterprises, and other donors through the advisory board mechanism and regular workshops
- Creation of a sufficient number of formal farming enterprises to serve as a model for the transformation of semi-subsistence agriculture into commercial agriculture in Mozambique

EMPRENDA ACTIVITIES

In order to achieve the results outlined above, the Alliance partners will focus on ten critical activities.

1) Promote accountability and business focus at existing associations

Certain elements are critical to strong, independent and profitable associations: clear incentives; compliance with fair, democratic and participatory procedures; member ownership and control of the association; development and implementation of revenue generating plans; and an equitable and transparent distribution of benefits. Further, a sound association has an entrepreneurial spirit and is led by an informed and competent board of directors. Members of successful associations understand their rights and responsibilities as shareholders and work together for the benefit of all.

In order to build successful associations, we will follow a model used by CLUSA in Mozambique's confectionary nuts sector: in establishing 100 farmer associations, 10 secondary structures (fora) and one third tier structure (IKURU) in production and marketing. We will also adapt (1) ACDI/VOCA's experience in Malawi with NASFAM, which raised the incomes of its 95,000 farmer members by arranging transport contracts, bulk purchasing inputs, facilitating export sales, and engaging in advocacy; and (2) CLUSA's experience in Zambia, which raised productivity of 600 rural group businesses through conservation farming and diversification into new crops. Specifically, we will:

- **Perform initial organizational assessments.** During the first three months, we will do a detailed inventory of existing farmer associations active in the three target value chains in order to determine their viability. Specific criteria will include:

- the potential of the crop(s) produced by the association and ability to link into a high potential value chain
- commitment to investing resources into the association's development
- willingness to manage the organization in a transparent and accountable manner
- potential to include women as key members and association leaders
- acceptance of the conditions for participation in EMPRENDA as formalized in a signed Memorandum of Understanding, outlining the organization's responsibilities and time frame

- **Determine the best production strategies.** In association with processors and the associations, we will determine optimal production strategies and identify specific steps that farmers must take to improve production—from site selection to receipt of final payment.

- **Develop business plans.** We will work with producer associations to develop business strategies and plans, including detailed financial models and enforcement of sound governance practices. These plans will become key planning, training and evaluation tools.

- **Disseminate market information.** We will continue to work closely with the Directorates of Agriculture and Rural Development and Commerce to disseminate market dissemination to fora in each region. We will replicate the monthly radio broadcast in northern Mozambique to Manica. However, regular buyer-seller and other agribusiness contacts will continue to be the major method to link FOR A to the market.

- **Develop management and governance structures.** We will help the associations develop producer-oriented, field-level and practical management information systems to track production and sales information. At the same time, we will help to develop effective management structures within the participating groups by helping association managers to learn to research markets and identify viable business opportunities. We will target women association members for capacity building programs in order to increase their participation in management. We will also help board members to better communicate with members and external stakeholders, such as buyers, national farmer organizations and the government.

- **Facilitate ongoing exchanges** between Mozambican farmer associations and those in neighboring Malawi and Zambia in order to share best practices across the region.

2) Promote the development of sustainable extension services

Association-based extension. In order to ensure that extension services are decentralized and farmer-owned, we will establish Business Development Centers (BDCs), modest district level offices that will support existing and new Business Fora (Tier 2 associations). We will rely on women, men, youth and informal community leaders to carry out training and provide technical assistance to farmers at the primary association level, ensuring that such inputs are locally relevant. These trainers will be selected by their associations in coordination with EMPRENDA using pre-agreed criteria that will focus on transparency, competence, respect of the individual vis-à-vis the association, and gender balance. We anticipate that this will create a cadre of local people trained and sufficiently experienced to assist the associations in extension, and continue well after the completion of EMPRENDA.

The Alliance will develop production, post harvest and marketing bulletins for its program staff, counterpart training organizations, and local BDS providers. Training manuals will be designed with relevant, actionable content for smallholders, and will be tailored to their educational level.

Private sector-based extension. We will continue to assist our rural enterprise clients to becoming key providers of extension services. Miranda Caju is currently experimenting with new cashew farming systems (e.g., integrating groundnut production) and providing training and inputs to smallholders in order to ensure a growing supply of high quality raw cashews. Vanduzi is actively training smallholders to grow high value horticulture crops. These clients are providing a sustainable extension model that can be replicated to thousands more, creating the beginning of a growing and sustainable formal agricultural sector in Mozambique.

3) Increase the participation of women in association management

Women's involvement in rural associations in Mozambique has been disappointing, despite their predominance among the agricultural labor force and a serious commitment at the national level to gender equity in decision-making. In order to increase women's involvement, the EMPRENDA Alliance proposes to:

- Aggressively promote and provide training to women in association leadership and management
- Encourage the adoption of family-based association membership as opposed to the registration of (predominantly male) household heads
- Increase the participation of women in Functional Literacy Programs, particularly in Manica
- Develop financial services appropriate to women farmers and entrepreneurs, including non-collateralized credit, longer term loans for capital investment, and independent savings facilities
- Introduce labor saving technologies which will benefit women, such as simple groundnut shelling equipment
- Educate women smallholder farmers in their legal rights concerning land tenure and inheritance, and strengthen the capacity of women's and smallholder groups to advocate for the reform of adverse customary practices

- Where possible, use women-owned private sector service providers in the implementation of project activities
- Ensure that training and marketing materials challenge traditional gender stereotypes
- Subject to funding availability, set aside innovation funds for women-owned businesses
- Adapt agricultural packages to women's needs, considering culture practices and labor pressures

4) Facilitate smallholder access to inputs and technology

In order to facilitate smallholder access to key inputs, the Alliance will work with each association to introduce calendarized production, which increases smallholders' yields and productivity, lowers "boom and bust" risks, and improves market success. We will also help develop the ability of financial institutions to establish sound loan tracking systems in order to increase their lending to associations. At the same time, we will work to improve farmers' and associations' creditworthiness.

Further, the Alliance will perform a detailed analysis of the input supply sub-sector in order to identify the opportunities and actions required by the Alliance to make seed and other technology more available to agribusinesses and smallholders.

5) Develop optimal farming models in order to maximize returns to smallholders

Using the models they have developed in Malawi, Uganda, Mali, Zambia and Ethiopia, CLUSA and ACIDI/VOCA will work with commercial farmers and research staff to help smallholders develop practical integrated farming system models for very small farms (less than 2 hectares), small farms (2-5 hectares), and medium size family farms (5-10 hectares). These models will be designed to be developed incrementally, from season to season, recognizing the limited investment resources of the average smallholder farmer and the need to make the most of retained earnings from annual crop and livestock sales.

These lead farms will serve as effective applied research and training centers, providing feedback on the effectiveness of new crop packages and demonstrating the mechanics of profitable and diverse small farm management models and the analytical tools used to make informed investment decisions.

6) Extend BDS to a large number of rural enterprises

Our BDS assistance will include the following activities:

Capital raising. We will continue to assist both start-up enterprises and existing enterprises to raise funds for working capital and expansion by building up each client to become a bankable business, and working with both public sector (such as NORSAD, DFID, and PSOM) and private investors (such as Aquifer, a new investment company).

Financial management. We will address the weak financial management capacity of our start-up clients through hands-on training of our clients, leveraging TNS corporate partners such as Ernst & Young and Goldman Sachs.

Market linkages. Through TNS's GDA corporate mentorship program, MozLink, we will continue to link our rural enterprise clients with world-class mentors such as Pillsbury and Cargill as well as South African companies such as Blyde Citrus and Geest. Further, through our broad network of regional contacts and programs we will facilitate linkages to new distributors, buyers, and investors in the region (such as HomeGrown in Kenya) and in international markets.

Capacity building. We will continue to develop a pool of homegrown entrepreneurs. We will transfer key business skills to Mozambican entrepreneurs through our management internship program. We will also continue to build the capacity of local BDS providers along the model of AIA to sustain services beyond the life of the project. Within our staff, we will continue to create a pool of Mozambican entrepreneurial talent and play a key role in helping our partners, CLUSA and ACDI/VOCA, recruit excellent local talent.

Business planning & strategy. Through our team of business advisors and the assistance of volunteers, we will develop investor-ready business plans for each of our new clients. We will also refine the plans of existing clients so that they become a useful tool for business planning.

Industry development. In addition to client-level assistance, we will drive the development of our three target value chains through activities such as (1) industry competitiveness seminars to bring together stakeholders and address constraints (2) industry analyses (particularly in the more complex field crops / animal feed chain) to identify key opportunities and provide a road map for action, and (3) industry associations (such as AIA in confectionary nuts) to develop entities which will continue to promote industry and enterprise development, without the ongoing assistance of donors and NGOs.

As new entities emerge that can provide BDS, such as the cashew processors' holding company (AIA), we will increasingly focus on providing assistance to a greater number of start-up enterprises as well as existing unassisted enterprises. This second wave of start-ups is increasingly led by Mozambican entrepreneurs. Our BDS services will build the capacity of local entrepreneurial talent.

7) Implement innovative solutions to capital constraints

The Alliance will work with various partners—including the Center for the Promotion of Rural Financial Service (CPRFS)—to implement the right solution for each value chain. For example, TNS is already working with the CPRFS on a cashew loan guarantee which is supporting the purchase of over \$4 million dollars' worth of raw cashew nuts in the coming buying season, and CLUSA is working with CPRFS to develop a financing mechanism for smallholder soybean production. We will build linkages with new private sector partners, such as the IFC's Risk Capital Facility, and Aquifer (which has already committed \$2 million to Vanduzi) to facilitate equity investments in rural enterprises.

8) Build more local, regional, and international market linkages

Local market linkages. The recent spread of modern supermarkets across the urban centers of Mozambique would seem to offer an opportunity for smallholder producers to sell their products locally. However, these markets are relatively small and most smallholders lack the capacity to penetrate and retain these more demanding markets. And these supermarkets are not prepared to offer the support needed for smallholders to achieve and maintain the value, safety and nutritional quality of perishables they require. We therefore propose focusing on linking smallholder producers to skilled wholesalers, processors and other supply chain intermediaries, which will both guide and support smallholder production and complete the transformation of their crops into high-quality competitive products. Where these intermediaries do not yet exist in Mozambique, the Alliance will encourage new entrants.

Regional market linkages. Neighboring South Africa is the economic powerhouse of Africa. However, there has been little export of horticultural products, confectionary nuts, or animal feed from Mozambique to South Africa. In the case of horticultural products, this is due to non-tariff barriers to trade, which prevent, for example, the import of Mozambique's higher quality (and earlier) grapefruit. The EMPRENDA Alliance will continue to facilitate linkages between Mozambican producers and major South African buyers such as Capespan and PioneerDupont (parent of Star Foods, a major confectionary nut processor). We will liaise with other USAID SO7 initiatives and the Regional Competitiveness Hub to ensure that trade issues are addressed. We will also forge linkages between smallholder associations within the region.

International market linkages. Mozambique's emerging horticulture and confectionary nut processors currently sell the bulk of their product to markets in the European Union, the Middle East, and Asia. Access to these markets is not necessarily a problem for connected horticultural producers such as Vanduzi. However, it is critical that these exports meet international food quality standards. The EMPRENDA Alliance will focus on ensuring that producers and processors who engage in international exports have the appropriate certifications, including EurepGap, HACCP, and ISO 9000. To further this initiative, TNS's quality management advisor will work primarily with horticulture producers and confectionary nut processors to help them become compliant. CLUSA and ACIDI/VOCA will ensure that smallholders produce to market standards.

9) Work with various stakeholders to overcome administrative, policy and regulatory constraints to agribusiness development

We will strengthen and standardize an association model which can be used to voice smallholder concerns at both the local and national levels. We will work closely with CTA and its Agriculture and Agro-industry Group to assist in this process, especially in the early stages before smallholder associations have the capacity to self-finance this representational capacity. In addition, we will work with the Ministry of Commerce and Industry and its FAO Agricultural Marketing and Trade advisors to streamline the association registration process and facilitate the creation of policies favorable to the participation of associations in private sector agricultural export markets.

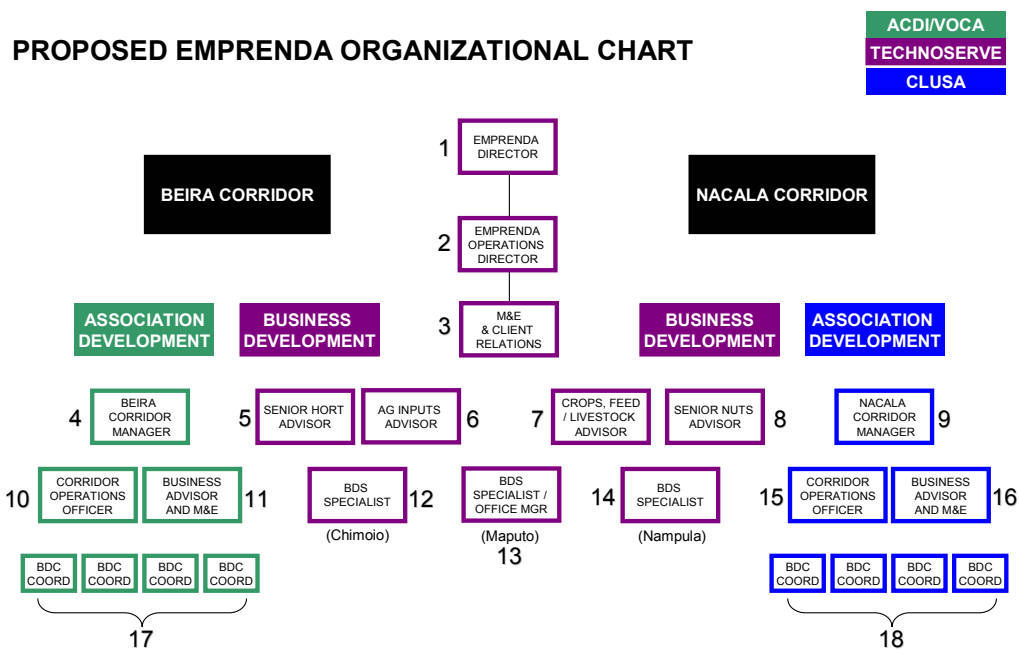
The Alliance will strive to engage and support the National Union of Associations and Cooperatives in lobbying and advocacy that serves the transparent business interests of its affiliated members; and will work with the Sofala Association of Commerce and Industry—an exemplary model of private sector association building—to help strengthen private sector association building processes in Manica, Nampula and Zambezia provinces.

10) Ensure that research benefits both smallholder and rural enterprise-level production

Although significant agribusiness research exists, it is not always available or applied to the smallholder or commercial producer. The Alliance will promote a participatory model for applied research, adopting the field school approach which helps farmers to continually improve their production practices through experimentation. We will promote participatory, collaborative research between researchers and commercial farmers through practical field visits, discussion groups, working groups and task forces.

EMPRENDA TEAM

The overall organizational structure of the three implementing partners and their core positions is shown below.



EMPRENDA Director (TechnoServe - #1)

- Provide overall strategic direction to EMPRENDA Alliance
- Liaise frequently with USAID staff to update on progress
- Oversee BDS activities across both corridors
- Identify other financial and technical resources to leverage for EMPRENDA

- Identify additional market linkages and potential business partners for EMPRENDA ventures
- Ensure accurate and timely financial and programmatic reporting
- Manage, coach and advise the Operations Director

EMPRENDA Operations Director (TechnoServe - #2)

- Ensure smooth and effective field operations of all three EMPRENDA partners
- Facilitate collaboration across implementing partners and other strategic partners
- Identify and solve any potential on-the-ground issues
- Work closely both with ACDI/VOCA and CLUSA in identifying, recruiting, and training Mozambican nationals to eventually assume the role of Corridor Manager
- Share best practices and lessons learned across both corridors through frequent meetings with field staff
- Ensure accurate and timely financial and programmatic reporting
- Reports to Director

EMPRENDA M&E and Client Relations Manager (TechnoServe - #3)

- Aggregate and analyze monthly data from each implementing partner
- Develop summary narrative reports in tandem with implementing partners
- Liaise with each assisted enterprise to ensure BDS currently meeting needs
- Develop periodic “success stories” and lessons learned for USAID and other stakeholders
- Meet frequently with USAID staff to update on progress and potential issues
- Lead communication activities as required
- Reports to Operations Director

4 BDS Business Advisors (TechnoServe – #5-8)

- Provide hands-on assistance to rural enterprises in business planning, operations, market linkages, capital raising, and technology use
- Drive industry development through special initiatives as required (e.g., feasibility studies, investor conferences, market linkages, etc.)
- Report to the Operations Director

Note: The senior horticulture business advisor will also play a leading role in assisting the Beira Corridor manager to identify and recruit Mozambicans to lead the association development activities.

3 BDS Business Development Specialists (TechnoServe - #12-14)

- Support BDS Business Advisors as required
- Act as first point of contact for new potential clients
- Assists clients with business registration processes
- Gather M&E data from clients as required
- Report to the senior Business Advisor (TechnoServe) in each corridor

2 Corridor Managers/Field Office Directors (ACDI/VOCA - #4, CLUSA - #9)

- Coordinates and liaises with EMPRENDA Senior Managers
- Provides TA oversight to staff and association members in all aspects of agro-livestock production and association marketing activities

- Supervises BDC Coordinators and oversees all aspects of project activity implementation
- Coordinates with donors, government, and other pertinent EMPRENDAs partners
- Meets with and coordinates with investors/ buyers on all aspects of business and marketing activities that benefit business associations and their members
- Coordinates project financial reporting and project progress report writing
- Supervises association Business Advisors and COO
- Reports to Operations Director

2 Corridor Operations Officers (ACDI/VOCA - #10, CLUSA - #15)

- Manages accountant and other administrative personnel
- Supervises day-to-day cash disbursements and cash/ bank balances
- Liaises with existing provincial second and third tier association institutions to encourage them and their affiliated associations to become more business- and market-oriented
- Develops strategies and implements actions to create and grow business-based second and third tier association institutions
- Supports Corridor Manager in supervising BDC Coordinators, and oversight of project activity implementation
- Advises on and supports all aspects of association, second and third tier structure transparent management, good governance, accounting procedures, and annual financial audits
- Advises on, designs, pursues outside funding sources, and implements water irrigation infrastructure improvements for associations
- Takes on all responsibilities of Corridor Manager when he/she is absent
- Reports to Corridor Manager

2 Business Advisor / M&E Coordinators (ACDI/VOCA - #11, CLUSA - #16)

- Conducts all aspects of business and marketing analysis (feasibility studies, profitability, marketing margin analysis, grant proposals for ADIPSA and other donors)
- Liaises with BDS component (TechnoServe) and investors on all aspects pertaining to association participation in out-grower schemes and other business opportunities with the private sector
- Acts on and analyzes all aspects of quantitative project progress reporting and M&E reporting to EMPRENDAs partners and USAID
- Acts as in-house IT specialist
- Trains staff in computer software use
- Liaises with Corridor Manager to plan and ensure content and consistency of business and marketing training at all levels (staff, IAC students, associations, government. extension workers, etc.)
- Reports to Corridor Manager

M&E PROCESS

The Alliance believes that the tracking of revenues of assisted enterprises and associations is the best way to measure growth, which also captures increase in yield as well as increases in rural income. We therefore will track and report on the following indicators for USAID:

- Gross sales of associations in target areas
- Total revenues of rural enterprises
- Total beneficiaries of rural enterprise growth (employees and number of rural producers purchased from)
- Value of financing disbursed to rural enterprises
- Non-performing loans to total number of loans

The data will be collected by each business advisor from the client and aggregated by the EMPRENDA M&E and Client Relations Manager. If relevant, the data will be disaggregated by gender. On a quarterly basis, data will be presented to USAID according to the following structure, accompanied by a narrative report on successes, lessons learned, and priorities going forward. Where available, and on a case-by-case basis, the Alliance will also share success stories on how our interventions have resulted in yield increases.

We propose the following structure for how we report our quarterly indicators to USAID:

Aggregate:			
FY 2004 - 2005	Target	Actual To Date	% Met To Date
Association Sales	\$1,700,000	X	X%
Rural Enterprise Revenues	\$3,000,000	X	X%
Finance Mobilized	\$1,300,000	X	X%
Non-Performing Loans		X	N/A
Total Loans		X	N/A
By Corridor: Beira Corridor			
FY 2004 - 2005	Target	Actual To Date	% Met To Date
BC Association Sales	\$600,000	X	X%
BC Rural Enterprise Revenue	\$1,200,000	X	X%
BC Finance Mobilized	\$600,000	X	X%
BC Non-Performing Loans		X	N/A
BC Total Loans		X	N/A
By Corridor: Nacala Corridor			
FY 2004 - 2005	Target	Actual To Date	% Met To Date
NC Association Sales	\$1,100,000	X	X%
NC Rural Enterprise Revenue	\$1,800,000	X	X%
NC Finance Mobilized	\$700,000	X	X%
NC Non-Performing Loans		X	N/A
NC Total Loans		X	N/A

Such a structure will enable the Alliance to track success (against initial targets) overall and by corridor.

TechnoServe, Inc.

Activity Title: NEW TREND

Cooperative Agreement No. 656-A-00-01-00040-00

QUARTERLY PROGRAM REPORT - 22 CFR 226.51(d)

Period Covered: October 1 – December 31, 2004

Oct - Dec 2004	Targets	Actuals	% Met
# AREs	26	26	100%
Finance Mobilized	\$1,250,000	\$6,600,000	528%
# HHs	60,000	46,202	77%
ARE Revenues	\$960,000	\$1,014,523	106%

Summary

This reporting period covers the extension to TechnoServe's NEW TREND program, which was negotiated with USAID in September of 2004. During this period, we have met or exceeded our targets for number of assisted enterprises, finance mobilized, and assisted enterprise revenues – while falling short on the number of beneficiary households.

During this period, our assisted enterprises purchased about \$4.3 million of raw materials from rural households; 98% of these purchases were by our cashew processing clients. Our assisted clients also employed 1,423 people – slightly lower than last quarter, due to increases in productivity at the cashew plants and the natural attrition (by the workers' own choice) which tends to occur with most of these start-up factories. The number of beneficiary households is smaller than expected due to our more conservative assumptions that each family in the Nampula region sells, on average, 100 kg of raw cashew, rather than the 80 kg which factored into our initial estimate.

Total revenues of assisted enterprises were over \$1 million, meeting our expected revenues for the period and driven largely by horticulture sales (e.g., mango, grapefruit, roses and vegetables).

Three successes to highlight during this period are:

- a) the successful closing of the BCI-provided working capital commitment for \$4.1 million at reasonable interest rates (with USAID's line of credit support);
- b) our reengagement of Sagar (the tur dahl processing plant in Gurue, Zambezia Province) as a client after demonstrating that we can help them improve their quality;
- c) the opening of the CondorCaju in Nametil

Business Advisory Service Leveraged Interventions

Cashew Processing

This period was the buying season for cashew, and our focus was on ensuring that each processing client was able to secure adequate and high quality raw material.

Total sales by all assisted cashew processors for this period was \$229,000, and together they purchased over \$4.1 million of raw cashew from 43,380 rural households. Four of these processors – CondorCaju, Atija Nuts, MauriCaju, and Geralco – are new start-ups. Particularly exciting is the opening of CondorCaju Nametil – a purpose-build cashew processing factory with a capacity of 2500 MT.

Finally, given the need to roll out a comprehensive cashew replanting program, we have been working closely with the industry leader, Miranda Caju, in groundnut production – both as a plantation cash crop and as an option to intercrop with newly planted cashew trees. To date, Miranda Caju has facilitated the planting of 100 hectares of groundnut by smallholders, and through our MozLink program (which includes a South African groundnut processor, Blancom), we are assisting him on improving quality and yields of the crop.

We have also finalized the branding for the cashew processors (as represented by AIA), with the leadership of mentor Young & Rubicam. Attached, as Annex I, is the “Zambique” brand which will be formally launched in mid-2005.

Tropical Fruit

CITRUM, our leading citrus producer, continues to make progress as it enters its third year of operations. Total exports for 2004 were 35,000 boxes, and 80,000 boxes are expected in 2005. The company is seeking significant investment capital to expand to as much as 250,000 boxes per year of high quality grapefruit. CITRUM is also growing into an important mentor role in the region; it is currently assisting three small fruit growers to grow papaya for the fresh fruit / fruit salad market. We are excited by the replication effect CITRUM’s success is having on the Maputo Corridor’s fruit producers.

Our assistance during this period was in engaging potential equity investors and assisting the company in negotiating potential investment.

Emprendimentos Agricolas de Mozambique, expanded its workforce to 70 people during this last mango season, and continues to sell its product to Geest in South Africa for the premium fruit salad market. The biggest constraint faced by the company is in securing enough capital in order to increase volumes; TNS continues to focus on finding an appropriate source.

Oilseed Processing

TNS/M’s lead enterprise in oilseed processing had a few hiccups toward the end of 2004. Lower than normal sales and higher maintenance costs resulted in small loss for the company during this period. Further, imports of cheaper palm oil continue to push down prices for the locally produced edible oil.

We expect that sales of seed cake will pick up in early 2005 (as the South African market begins to experience shortages) and will continue to advise Optima, with the assistance of Cargill (who will be visiting in January / February 2005), on quality and cost control in order to remain competitive.

Pulses

During this period, Sagar, the dahl processing plant located in Gurue built in 2002, has asked for TechnoServe’s assistance in improving its dahl quality and recommend a marketing strategy for the company. We found that the company’s quality issues were due to combination of factors: delay in processing the raw material (which was the result of a 10 months hold-up at the Nacala port), inadequate fumigation and storage. Some of the management team were inexperienced in dahl processing, and communication among staff and between staff and management was difficult, partly due to language barriers. Further, the factory’s capacity never reached the anticipated 30 tons of finished product per day, due to the inability to use sun-drying during the rainy region (which is 10 months out of the year).

Some of our recommendations have already been implemented, resulting already in improved quality, as indicated in the chart on the next page. The full report is attached as Annex II to this report.

Improvement	Details
✓ Improvements in fumigation and storage process	<ul style="list-style-type: none"> • Resized palletizing • Fumigation frequency adjusted • Stitched tarpaulin covers • Repaired holes in roof • Blocked alternating ventilators
✓ Batch identification system	<ul style="list-style-type: none"> • Designed and applied code for samples • Implemented methodology of sampling • Developed record keeping format
✓ Improved quality	<ul style="list-style-type: none"> • 3rd drying step • Educated staff on <ul style="list-style-type: none"> – Roll filling – Impact of feed-rate and back pressure control

Other Horticulture

In addition to tropical fruit, TNS/M is continuing its assistance to floriculture and vegetable producers, primarily in the Beira Corridor. **Vilmar**, the rose grower, is now selling directly to Holland, through Lanichi, a Zimbabwean-based distributor. Average production is about 200,000 stems per hectare, and the company is currently achieving \$0.12 per stem. Sales for this period were \$360,000 – a significant increase over last quarter. Through our MozLink mentor, Flower Dynamics, we are helping Vilmar engage with other breeders, which could save the company up to \$300,000 in royalty costs. With 276 employees, Vilmar remains the region’s largest horticulture employer.

Our foliage client, **Flora Mocambique**, continues to face issues around securing a legal land title and is holding off on planning any more foliage seedlings until this is resolved.

Cia do Vanduzi, newly capitalized by Aquifer Ltd, is poised to become a significant player in premium vegetable exports from Mozambique. During this period, the company shipped 36 tons of baby corn and chilies to the United Kingdom. Our primary activity was in helping to finalize Aquifer’s \$2.5 million investment.

Pimenta de Mocambique has been experiencing some problems with its smallholder production. Although the company recently expanded the number of smallholders to 1500, it continues to face severe quality and contracting problems. To address this, we brought in a South African MozLink mentor (David Ashton cc, which is a consultancy experienced in smallholder production) to advise the company. We are now working with PdM to put in place a different incentive and payment structure to ensure higher quality production.

PdM is also in the process of engaging growers in Tete Province, using existing irrigation equipment put in place by GAPI. Seed has already been distributed to 600 farmers, and PdM will be sending an extension officer in February 2005 to train the growers.

Finally, we have engaged a new client: **Qualita**, a start-up seed company, which aims to produce top quality seed for export and sales within Mozambique. Presently, the company is negotiating with numerous seed breeders for the multiplication, marketing and retail rights of their genome. We are currently assisting the company with its business strategy and capital raising.