

PROJECT DESCRIPTION REVISION

COMMERCIAL AGRICULTURAL PRODUCTION AND MARKETING PROJECT

Contract No. 645-0510-C-00-3008-00

Prepared in association with:

The United States Agency for International Development

and

The Ministry of Agriculture and Cooperatives
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I. Amended Project Description

A. The Concept for CAPM Private Sector Development

Swazi farmers are in the enviable position of having good markets for fresh produce both locally and regionally, especially during the winter season, and the climate and physical resources which form the basis for a comparative advantage in selected horticulture crops. To capitalize on the favorable production and marketing potential, the CAPM project was designed to establish an environment that will stimulate increases in small scale commercial agricultural production, other agribusinesses, and domestic and export marketing.

Phase I, initiated in mid-1989, emphasized analysis of constraints, program options, opportunities, and policies. The considerable data and analyses generated the first two years by the implementing contractor, plus an interim assessment by REDSO/ESA, indicated that the primary focus of continuing project implementation should be oriented more toward direct interventions in private sector development -- providing technical assistance in field production and marketing of small farm produce, fresh vegetables. A Project Paper Amendment (PPA) in September 1991 authorized the redirection.

The redesigned CAPM was aimed at mitigating constraints to capitalize on the production and marketing potential. The basic concept was that the project would help create a vertically integrated production and marketing system to link small, potentially commercial farmers with the favorable markets. The project was to be market-led. A key element in the system was to be approximately four Swazi produce marketing firms that would be assisted and encouraged by CAPM to work with small farmers in the production of selected crops and in assembling, packing, and marketing the produce.

Once markets for specific crops were identified, CAPM technical assistance would develop core groups of farmers to meet production needs and commercial standards. Once the core groups were trained, it was envisioned that the marketing firms would maintain production with these groups with a small field staff and that, through time, additional farmers would be attracted into the system because of the favorable income potential.

B. Accomplishments To-Date

A document resulting from an interim assessment of the CAPM project, carried out in May and June 1993, contains chapters with considerable detail on: (a) progress toward achieving output targets, goal and purpose; (b) economic and financial aspects of implementation to date; (c) social and gender aspects of implementation to date; and (d) an assessment of the CAPM monitoring system. Following is a summary of some of the accomplishments described in the Interim Assessment.

1. Progress Toward Achieving Output Targets

Output 1. Viable opportunities identified for expanded or new private sector activities that stimulate increased commercial agricultural production.

The project has encouraged and helped foster the development of some new agribusiness ventures, and identified and involved some existing ones, that complement and help achieve the objectives of the project.

With CAPM guidance and assistance, two nurseries have been started which provide seedlings to CAPM farmers and others. An existing packaging materials firm has been enlisted by CAPM to design and manufacture produce boxes with logos identifying the product as Swazi. CAPM has arranged for a small trucking company to assist with transporting produce; the company is considering expanding its fleet, largely as a result of the project. A number of local farm input supply companies have a keen interest in CAPM and are working to help the project succeed.

Output 2. At least four companies will use technical guidance in response to new opportunities, facilitating production and marketing of small farm produce

CAPM had identified and worked with five produce trading and marketing firms throughout much of 1992 and early 1993. Three of these operated on the NAMBoard trading floor, while the other two were smaller, more specialized firms serving niche markets. Through no fault of the project, three of these firms are no longer in business. (In retrospect, two or three firms is a more realistic number.) Philani Fruits and Vegetables (Pty) Ltd., the largest of the two produce trading firms currently assisted by CAPM, is growing in management capability and appears to have the potential of making a sustained contribution to the goal and purpose of CAPM. This firm, as well as a smaller one, Entikini, is using CAPM technical guidance in responding to marketing opportunities.

Output 3. Production programs implemented: 65 farmers by the first year, 100 farmers by the second year and 135 farmers by the end of the project.

Production programs have been implemented with a focus on four winter season crops with promising production and market potential: fresh market tomatoes, green peppers, sweet corn, and NEMA 1400 (processing) tomatoes. At the start of the 1993 winter season, 138 farmers were participating, of whom 28 percent were women.

Output 4. Domestic commercial sales of fresh produce by small-scale farmers assisted by CAPM increased to 1,500 MT by the first year, 2,300 MT by the second year, and 3,000 MT by the end of the project, an increase from pre-project redirection of 225 MT.

A substantial increase in production and sales of the target crops has taken place, in spite of the major drought and some hail and frost damage that affected production during the first year of Phase II of CAPM. (However, the targets set out in Output 4 appear now to have been too high.)

Output 5. Regional export sales of fresh produce grown by small-scale farmers increased to 900 MT by the end of the first year, 2,500 MT by the second year and 3,000 MT by the end of the project, an increase from pre-project redirection estimate of 225 MT.

Small farmers have shown that with technical guidance and marketing assistance, they can produce quality vegetables for regional export sales, and regional export sales have indeed increased, although by a smaller margin than was anticipated. (Again, these targets need to be scaled back.)

Output 6. 20 experimental shipments of specialty crops to overseas markets totaling approximately 20 MT originating from the target group of farmers by the end of the project, up from none currently.

A number of experimental shipments have been sent to Europe. However, since the project was redesigned it has been concluded that the regional markets offer the best opportunity for Swaziland's small scale farmers, at least in the near term.

Output 7. 16 personnel (general managers, operations managers, technical advisors, and production facilitators) trained in company management, marketing, production, farm management, postharvest technology and field operations.

Training programs -- both formal and on-the-job technical assistance -- have been implemented as planned.

Output 8. 135 farmers and 15 extension workers and field assistants trained in horticulture and specialty crop production and postharvest training with a emphasis on export quality, quantity and dependability standards.

At least the indicated number of farmers and extension workers have received training -- both formal and informal -- of the types noted. Farmers have adopted new techniques, such as trellising and irrigation, and yields per hectare are increasing. (This should not be construed to imply that the training has reached a level at this juncture that will assure sustainability.)

Output 9. 38 domestic and regional horticultural production and marketing trials completed by the end of the project.

As it is stated, this output will likely have been achieved by the current project completion date. (The output as stated is incomplete and needs to be better defined.)

Output 10 All participating marketing firms, at least four, have long range business plans (growing out of and relating to the commercialization of CAPM trials and pilot programs), record keeping abilities, and training in management of vertically integrated marketing firms.

Draft business plans have been developed for four marketing firms (although, as noted above, three of those are no longer in business). Philani's business plan is in process of being updated and the firm has improved management and record keeping abilities as a result of CAPM.

2. Economic and Financial Aspects

Due recognition is given to the fact that the redirected project has experienced only one winter season, which was severely limited by drought, and one summer season and is just into the second winter season. Even so, in the words of one farmer, "CAPM is opening the eyes of the people; it is demonstrating that crops other than maize are possible for small farmers, and potentially profitable."

Some turnover has so far been experienced, as might be expected, in the number of farmers participating in the project, but total numbers are growing which suggests that small farmers perceive a financial advantage to the production and marketing services offered by CAPM. Annex F, Updated Financial Analysis, indicates that it will be possible with further movement toward the vertically integrated production and marketing system initially conceived for CAPM, to achieve a substantial further increase in small farmers' average incomes per hectare.

As indicated earlier, Philani Fruits and Vegetables (Pty) Ltd. is providing a much needed service for Swazi small farmers who produce crops required in its trading and marketing operations, including exports to RSA and Mozambique. Philani also has a slowly but steadily growing business in supplying local supermarkets with fresh produce. For this winter season, Philani is operating a new

tomato packing shed owned by a group of farmers in the northern area of the country. Thus, together with the contribution being made by other participating agribusinesses, as noted earlier, the combined impact of CAPM assisted enterprises is having a quite positive impact on the incomes of small farmers, the firms themselves, and on the Swazi economy.

3. Social and Gender Aspects

Most participating farmers have been drawn from irrigated schemes, individuals on Swazi Nation Land (SNL), and Title Deed Land (TDL) owners. Each group has had some distinctive characteristics and constraints. Farmers on irrigated schemes, including the 32 percent who are women, have small amounts of land, no transportation or communication systems, and little additional land available on which to increase production. In the area where CAPM is currently working, 58 percent of scheme farmers participate in the project. Individual SNL and TDL farmers have large holdings, and the latter often are fully commercialized with farm machinery and transport and communication systems. Although the number of CAPM participants in these categories are few, they provide volume and stability to the project. Technical assistance has been concentrated on narrowing the focus to specific crops and solving the technical production problems of all the participating farmers.

Currently, 28 percent of the 138 participating CAPM farmers are women, virtually all being members of schemes; none of the SNL and only 3 percent of the TDL farmers are women. All farmers perceived the advantage of CAPM as being assistance with marketing; technical assistance with production and the concept of programmed production are greatly appreciated by all farmers. Individual SNL farmers have increased irrigation and access to loans due to CAPM. Both they and TDL farmers have increased their hired labor to assist with harvesting and grading whereas scheme farmers have relied more on family labor for these activities.

CAPM farmers use a number of channels to sell both CAPM and non-CAPM crops, and as yet are more attuned to a trading rather than to a marketing philosophy. Some scheme and non-scheme SNL farmers still sell some produce informally to hawkers and traders as well as to CAPM-directed markets. Only the TDL farmers use more formal market channels that go beyond the farm gate, such as contracts, in addition to these informal ones.

4. The CAPM Monitoring System

A monitoring and evaluation system has been set up in terms of formats to collect data on farmers (disaggregated by gender) and firms. The data are being collected and some data have been summarized and analyzed. A data system has been set up to monitor the programmed production which has proved useful to the field assistants and farmers. On the marketing side, there is a new

system to keep track of farmers' sales to CAPM markets which will assist in sorting out payments to farmers, on the one hand, and in collecting data on product sales, on the other.

C. Some Implementation Issues

Some aspects of the project have not worked as well as planned. Some of the main implementation issues revolve around a key EOPS in the redirected project:

"Four or more market led, self-sustaining vertically integrated Swazi companies marketing horticultural and specialty crops produced by small scale growers, providing technical assistance for production and postharvest activities in response to market signals, and accessing domestic, regional and other markets."

Following is a summary of implementation issues that will be taken into account in making adjustments for any project extension.

1. The Number of Marketing Firms Is Short of The Number Projected

Whereas firms had been identified during the redesign stage that appeared to meet the criteria as potential marketing firms, and four such firms became CAPM collaborators, only one (plus a small, highly specialized firm) remains in business. Experience indicates that four or more firms was too many and that a suitable adjustment needs to be made.

2. The Firms are Trade Oriented

A high percentage of the business of all the firms has been based on imported produce from the Republic of South Africa (RSA); the firms have had a strong trade rather than a marketing orientation.

3. The Firms Are Not Fully Vertically Integrated

As already indicated, Philani is making a substantial contribution to the CAPM project. At the same time, Philani and the other firms when they were in business have been less than enthusiastic about taking on the role of programming production and providing technical assistance to small farmers in vegetable production and postharvest techniques. Thus, the concept of vertical integration, while a valid concept, has not yet been fully realized.

4. Technical Assistance Needs to be More Market Development Oriented

The expatriate technical assistance team has been concerned with assisting production and postharvest, which are important, while giving little attention to market development and helping develop the firms into marketing entities.

5. Assumptions Regarding Production and Prices Need to be Adjusted

A factor that has caused some shortfalls in meeting output targets is that the assumptions made by the implementing contractor regarding yields, production, prices, and net incomes, on which the feasibility of the redirected project was based, have turned out to have been overly optimistic. For instance, three crops per year were assumed on the same cultivated land; experience indicates that the average under favorable conditions is no more than two crops per year. Assumed yields per hectare were higher than has turned out to be the case for some crops. Assumed prices for some produce -- winter season sweet peppers for the local market, for example -- were three to five times as high as realized prices.

D. The Need and Rationale for Extension of the Project

The basic rationale for extending the project is to maximize the investment already made -- to preserve what has been accomplished, to put it on a solid footing and to assure longevity of the results.

Much has been learned that will be useful in modifying the effort in order to achieve the objectives of the project:

- o Many small farmers can, indeed, produce market-quality vegetables, given guidance and assistance.
- o Small farmers understand the need for greater market awareness on their part.
- o For small farmers to increase their incomes, they must have more participation in value-added postharvest and marketing activities.
- o The level of involvement of CAPM in an established firm, especially one with other business interests, is generally too low to effectively assist its development.
- o It is difficult and time-consuming to develop traders into marketers, and not all efforts will succeed.

- o The produce trading firms that have become CAPM marketing firms hesitate to make a strong commitment to work with small farmers; it is easier to source from RSA; to make the project sustainable, a supplemental effort may be needed.
- o For any marketing firm, a major cost and constraint will be the collection or assembly of produce from rural collection points.

The formation of farmers' organizations dedicated to getting small farmers more involved in adding value to their produce by assembling, grading, and packing it, and the formation of a private sector Marketing Firm that is dedicated to working with the nascent farmers' organizations to the mutual benefit of both, can maximize the advantage of the lessons learned, overcome any short-comings of the CAPM project to date and cause the project to achieve its purpose to the betterment of small farmers and the economy of Swaziland.

E. Possible Regional Management of CAPM

It is possible that during the proposed life of the revised CAPM project the USAID presence in Swaziland will have been reduced or even terminated. If that were to happen, it is expected that there will be a regional office to monitor USAID activities in Swaziland, even if there might not be an official USAID representation.

Should this occur, the CAPM project could continue to function through a liaison with the regional office. There are examples of projects in other regions which function without the official local presence of USAID.

The type of project that might operate under this mode of management is important. Some projects require almost daily decision-making by USAID; others are perhaps not yet well established and require close attention by USAID project managers. CAPM, on the other hand, is a mature project. It is well understood and supported by the host government. Its activities do not require constant decisions on policy or disbursement. It is also expected that the team will be composed of advisors with previous A.I.D. experience.

The experience of other regions in management of projects of a similar nature to the CAPM project demonstrates that projects can be successfully managed by a regional USAID office. The extended CAPM project could also function well in such an environment.

F. Project Goal, Purpose, and End of Project Status

1. Project Goal and Purpose

The goal and purpose of the original project remain valid and will be unchanged:

Goal: To increase the agricultural sector's contribution to the national economy of Swaziland.

Purpose: To establish an environment that will stimulate increases in small-scale commercial agricultural production, other agribusinesses, and domestic and export marketing.

2. Updated End of Project Status (EOPS)

Taking into account the implementation issues noted above, some modification in the EOPS is indicated, as follows:

- o Farmers in three or more regions of Swaziland producing for regional and local markets, focusing on four winter crops and five summer crops.
- o Farmers in three or more regions of Swaziland will have formed organizations with the specific purpose of assembling, grading and packing their produce for market.
- o CAPM-assisted farmers producing 163 hectares of winter crops and 105 hectares of summer crops that were the target of the project.
- o Market linkages between Swazi tomato farmers and the Durban market will have been solidified.
- o At least one Swazi firm will have been established as a competitor on the NAMBoard market with a local and regional trading capability.
- o A tomato packing facility will have been established in the Northern RDA.
- o Transportation constraints will have been reduced through coordination of NAMBoard and private transporters with participating farmers.
- o Five annual workshops/field days carried out for farmers in production and postharvest methods.
- o Two annual workshops carried out on marketing techniques and organizational and managerial functions of produce marketing firms.

- o Technical assistance and advice will have been provided to at least three firms on the NAMBoard market.
- o Technical assistance and advice will have been provided to at least one "niche" marketer on the local market.
- o Eight CAPM field staff will have been developed professionally.

3. Updated AID and GOS Project Inputs

As in both the original project paper and the project paper amendment, CAPM will continue to provide a mix of inputs to stimulate increased commercial agricultural production and marketing. During the proposed extension of the project, the more action-oriented technical assistance that has characterized the project since the amendment in 1991 will continue. However, the exact make-up of the technical assistance team will be changed to put more emphasis on Market Development; to help in the formation of small farmers' organizations, which the current technical assistance team has identified as an essential way to get farmers more involved in the marketing process; and to help form a new Marketing Firm which would contract with the farmers' organizations and manage the marketing of the farmers' produce to the mutual advantage of both the Firm and the farmers.

The revised categories and recommended levels of technical assistance are as follows:

	<u>Original*</u>	<u>Revised**</u>	<u>Extended***</u>
Long-term Expatriate TA	144	91	
Long-term Local TA	0	210	
Short-term Expatriate TA	40	41	
Short-term Local TA	27	as possible	
Home-office Support	15	27	
 Total person months	 226	 369	

* Through August 1992

** Through February 1994

*** Through September 1996

Project inputs such as local-hire office staff and space will remain relatively unchanged.

The revised three-person long-term technical assistance team consisting of an Agribusiness/Organizational Development Specialist and COP, a Horticultural Specialist, and a Market Development Specialist will relate, generally, to the Department of Agriculture and Extension. The advisors will liaise with other departments of

Table 1

CAPM Budget Estimates with Extension to September 30, 1996

Total Project Cost: AID and GOS

	Project Pap!		Change for		Total for	
	Amendment!	!	Extension	!	Extension	!
	\$'000	%	\$'000	%	\$'000	%
AID Inputs						
Long-term TA	3,617	48	1,506	46	5,123	47
Short-term TA	1,788	24	200	6	1,988	18
Training	173	2	50	2	223	2
Project Office	331	4	641	20	972	9
Commodities	426	6	50	2	476	4
Home Office Support	228	3	155	5	383	4
UNISWA	400	5	0	0	400	4
Grant to SGBT			100	3	100	1
PSC Project Manager			310	10	310	3
Monitoring/Evaluation/ Audit	637	8	250	8	887	8
AID Total	7,600	100	3,262	100	10,862	100
GOS Inputs						
Personnel	741	27	75	3	816	16
Project Support	456	17	0	0	456	9
Travel	191	7	0	0	191	4
Company/Farmer Inputs						
Production Inputs	793	29	1,298	55	2,091	41
Company Facilities	366	14	656	28	1,022	20
Farm Labor, Facilities	148	5	324	14	472	9
Swazi Total	2,695	100	2,353	100	5,048	100
Total Project Costs	10,295		5,615		15,910	

MOAC, at headquarters and in the field, and outside agencies as necessary to carry out their scopes of work. Given the heavy field orientation of the project, the designation of full-time counterparts from MOAC is not essential.

However, it will be quite useful to the project to have MOAC Horticulture Extension personnel closely associated with the field activities of the project. At the same time, these personnel will grow professionally in their capacity to assist in the agricultural and agribusiness development of Swaziland.

II. Updated Cost Estimates and Financial Plan

A. AID Inputs

The total cost to AID will be \$10.86 million over the 87-month life of the extended project (Table 1). The increase, \$3.26 million, will fund the project's production and marketing technical assistance for an additional 31 months, until September 30, 1996.

B. GOS Inputs

The Swazi input will be a combination of GOS contribution and capital investments by the participating companies and farmers. The GOS input during the extension will consist of in-kind contributions from the recurrent budget, consisting of the contributions of government officials, horticulture agents, and extension agents who will have some association with the CAPM project.

The Swazi inputs were converted from emalangenani to U.S. dollars in the original project paper at E2.00 = \$1.00; in the 1991 PPA the rate used for additions to the budget was E2,80 = \$1.00; in this revision the rate used for additions to the budget is E3.00 = \$1.00.

III. Updated Implementation Plan

A. GOS and USAID Responsibilities

1. Project Authority With The GOS

Each participating GOS line ministry will be responsible for implementing CAPM activities that are related to its functions. The Principal Secretary (PS) of MOAC and the Director of Agriculture, MOAC, will have the major responsibility for ensuring successful project coordination and management within the GOS. The PS of MOAC will remain vested with authority to sign project implementation documents in consultation with other ministries involved in specific project matters.

2. GOS Coordination and Management Committees

The Project Steering Committee, under the chairmanship of the PS of MOAC will remain intact under the extended CAPM project. Membership will continue to include the Principal Secretaries of MOAC, MOF, DEPD, MCIT, MOE, the USAID Mission Director or her designated representative, and the Chief of Party of the technical assistance contractor. Project implementation experience has demonstrated that the PSC should meet on a semi-annual basis, or as needed, to provide high-level policy guidance to project implementation.

The Working Committee of the CAPM project will continue its function and its chairmanship will remain with the Director of Agriculture, MOAC, or his designate.

The implementation strategy for the extended CAPM project will require a new set of activities, particularly for the technical assistance contractor. Details on activities, resource allocation and timing will be developed in an LOP workplan to be submitted forty-five days after the project starting date.

Project activities will be designated to one of two categories: (a) interventions to implement opportunities that have been identified for small scale producers, and (b) activities designed to support exploitation of these opportunities.

For day-to-day project management and coordination the extended project will have a decentralized approach. The contractor will communicate and coordinate regularly with the Director of Agriculture or his designate. An effort should be made to coordinate activities with the Horticultural Campaign Committee in MOAC, and other entities in MOAC involved in small farmer production and marketing. Short-term advisors will report to the Chief of Party, but communicate and coordinate with USPSC Senior Project Manager, and as necessary with the PS of MOAC, the Director of Agriculture and assigned counterpart units in the relevant ministry.

B. USAID and Contractor Responsibilities

Within USAID/Swaziland and under the general guidance of the Director, CAPM project management responsibility will reside with the Project and General Development Office.

The contractor will have responsibility for providing all long- and short-term TA, procuring commodities to support the work of the TA team, for skills training in production and marketing, and for organization of the farmers' organizations and the Marketing Firm. USAID will provide the vehicles to be used by the project.

The line of reporting from the COP to the MOAC will be through USAID. Within MOAC the COP will coordinate activities with the Director of Agriculture or his designate.

The CAPM project team expatriate long-term TA will be comprised of an Agribusiness/Organizational Development Specialist, a Market Development Specialist, and a Horticulture Production Specialist. One of the first two will be designated Chief of Party. Local staff will consist of a Marketing Manager, a Production Manager and two field assistants for the Marketing Firm, three field assistants for the CAPM project, and office staff.

The project has targeted certain crops for seasonal production for the local and regional markets. This is presented in the Technical Analysis. Programs for the production and marketing will need to be developed as well as feasibility studies for crop diversification. A Marketing Firm is to be created with the assistance of SBGT. Farmers' organizations will be developed in three, possibly four, regions. These activities will require plans of work and coordination between CAPM, SBGT, USAID, and relevant GOS ministries.

C. Small Business Growth Trust

USAID will provide grant funding to SBGT for capitalization of the Marketing Firm and for a local-hire Agribusiness Advisor to be contracted as part of the permanent SBGT staff. The development of the Firm and the guidance of its activities will be a collaborative effort between CAPM and SBGT. This activity will be under the direct supervision of the PGDO/USAID and the relevant Project Managers.

D. Procurement

The USAID Regional Contract Officer will contract with the CAPM contractor to provide long- and short-term technical assistance and procure equipment, supplies and vehicles needed to support the project. Equipment and supplies will be those needed to supplement or replace those existing from the earlier phases of CAPM.

E. Revised Implementation Schedule

Following is an illustrative implementation schedule depicting approximate dates by which critical actions should be initiated or completed. The contractor will provide a more detailed implementation schedule and corresponding programs of work and budgets. This will be presented in the form of a LOP workplan which will be revised annually or as necessary. The implementation schedule is presented for the first year of the project extension.

Date	Activity	Responsibility
Feb 1, 1994	o TA Contract Signed	USAID/Contractor
Mar 1, 1994	o COP, Contractor Home Office Coordinator arrive in country	Contractor
	o Grant agreement signed with SGBT for Marketing Firm capitalization and agribusiness advisor	USAID/SGBT
Mar 15, 1994	o Local TA contracted	Contractor
	o LTTA Specialists arrive in country	Contractor
	o Project office leased	Contractor
Mar 21, 1994	o Review previous production and marketing (P&M) programs, begin to prepare status report	Contractor
Apr 1, 1994	o Begin plantings, winter crops	Farmers and Contractor
	o Start forming Marketing Firm	SBGT, Firm & Contractor
	o Present (P&M) status report	Contractor
	o Analyze status of NAMBoard firms, develop action plan re firms	Contractor and firms
Apr 15, 1994	o Initiate action to form first farmers' organization	Contractor
	o Submit Workplan, with monitoring procedures	Contractor
	o Initiate action plan re NAMBoard firms	Contractor and firms
May 1, 1994	o Monitoring procedures initiated	Contractor
Jun 1, 1994	o Quarterly report submitted to PGDP	Contractor
Jun 15, 1994	o Begin production and marketing of winter crops	Marketing Firm, Farmers & Contractor
Aug 15, 1994	o Design production & trials for summer crops	Marketing Firm & Contractor

Sep 1, 1994	o Quarterly report to PGDO	Contractor
	o Initiate action to form second farmers' organization	Contractor
Sep 15, 1994	o Review progress of project	Contractor/USAID
	o Begin summer crop plantings	Farmers, Firm & Contractor
Oct 1, 1994	o Design production & trials for Fall crops	Marketing Firm & Contractor
Nov 1, 1994	o Review production & results of winter crops	Marketing Firm & Contractor
	o Review 6-month progress of NAMBoard firms	Contractor and firms
Nov 15, 1994	o Begin production & marketing program for summer crops	Marketing Firm & Contractor
Dec 1, 1994	o Quarterly report to PGDO	Contractor
Dec 15, 1994	o Begin fall crop plantings	Farmers, Firm & Contractor
Jan 1, 1995	o Initiate action to form third farmers' organization	Contractor
Feb 1, 1995	o Design production & marketing program for winter crops	Marketing Firm & Contractor
Mar 1, 1995	o Annual/Quarterly report submitted to PGDO	Contractor
Mar 15, 1995	o Begin production and marketing of Fall crops	Marketing Firm, Farmers & Contractor
	o Review Annual Report and Workplan	USAID/Contractor
Apr 1, 1995	o Submit revised Workplan	Contractor
	o Begin planting winter crops	Farmers, Firm & Contractor
	o Review status of Marketing Firm	Contractor, USAID & SGBT

IV. Updated Monitoring and Evaluation Plan

Monitoring is concerned with project performances in various areas of implementation as they relate to targets set. The CAPM project will be monitored in terms of its activities in production, marketing, farmers organizations and marketing firms. There is a difference between technical monitoring and impact monitoring. Technical monitoring has been used to keep records of programmed production, and marketing. Impact monitoring should be used to ascertain the results of activities.

Evaluation looks at the analysis of impacts of a project at a particular time against the impacts envisaged. The CAPM project will be evaluated in terms of the EOPS, outputs given in the logical framework (Annex A) and to meet PRISM requirements.

A. Project Activities and Events to be Monitored

The CAPM project will need to monitor (a) production by farmers,; (b) sales by farmers; (c) development of farmers' organizations; (d) market conditions and prices at NAMBoard, RSA (Johannesburg, Pretoria and Durban markets), and local markets (in the Manzini-Mbabane corridor); (e) activities and financial situation of the Marketing Firm in conjunction with SBGT; and (f) activities of other marketing entities (e.g., Philani and Entikini). The system designed by Baird (1992) set up a comprehensive set of data collection forms including farmer and firm profiles, activity forms for FAs, monthly and semi-annual firm collection forms. However, there are no formats for c, d, and e as yet developed.

1. Production by Farmers

The system that groups farmers by type (scheme, non-scheme individual SNL and TDL) as well as by area and gender should be maintained and data should be analyzed and reported in these categories. Programmed production spreadsheets should also be prepared by area and type of farmer. Summary tables, such as those in the Social Soundness Analysis (Annex D), based on the Farmer Profile forms should be utilized and all tables should be updated at the beginning and end of each production season.

The forms designed by Baird(1992) and described in the Interim Assessment Report (Ronco 1993) may be used with the modifications suggested in the Interim Assessment Report.

2. Farmers' Sales and Income

Attempts must be made to collect income data from sales of CAPM crops and better data on sales outside CAPM market channels. A baseline needs to be established for new farmers in each of these, and then changes as a result of CAPM measured.

3. Farmers' Organizations

Data on farmer organizations (membership by gender and location, activities, financial aspects, etc.) will have to be collected, computerized, and analyzed. There are no formats yet developed for doing this, and the technical assistance position concerned with farmers' organizations will have to design a system to monitor the progress by area and type of farmer (as well as for farmers who market through the organizations, but are not members).

4. Market Conditions and Prices

CAPM is presently obtaining daily market quotes from Nokwane/NAMBoard, RSA (Johannesburg, Pretoria and Durban markets), and local markets (in the Manzini-Mbabane corridor). Trading results from RSA markets and Swazi markets, if available, must be collected and analyzed for windows of opportunity and the development of marketing strategies by the marketing firm. (Note: RSA markets have published reports that are available.) The project should consider obtaining a modem for linkages with the RSA Agritel price reporting system.

5. Marketing Firm

A method of monitoring the Marketing Firm in terms of its linkages to the farmers and to local and regional markets must be devised once the firm is operational. This can be carried out as part of the work plan and in conjunction with SBGT. Its operations in terms of the following should be monitored:

- (1) delivering technical production assistance (by type of product and type of farmer, training),
- (2) providing other services (e.g., transport, grading equipment)
- (3) managing product sales and remunerating farmers (customer base, market share, delivery of payment time),
- (4) determining markets (targets in regional and domestic wholesale/retail markets, Swazi versus RSA sourcing, European markets),
- (5) financial performance (obtaining capital, gross margin policies and practices, budgets, cash flows),
- (6) general business activities (advertising, promotions, product diversification, sales forecasting), and
- (7) general management practices (staff, training).

6. Other Marketing Entities (e.g., Philani and Entikini)

The current market profile forms are inadequate and should not be used. However, the formats to track sales from farmers to these firms appear to be working adequately and should be continued. Quarterly or semi-annual statements from these firms should be gathered.

B. Monitoring for the PIR

The types of data required for the PIR include the following :

PIR Output

A.2	total sales of the Marketing Firm
A.3	production programs by farmer disaggregated by gender
A.4 & A.5	domestic sales and regional exports
A.7, A.8 & A.10	training by type and category of participant
A.9	trials
B.1	crop budgets
D.1 to .4	management monitoring
E.4	access to institutional credit
E.5	training to improve business management skills of farmers' organizations
E.6	irrigation upgrades (if this is a project objective)
E.9	market chain improvements
E.11	cash incomes of farmers from CAPM crops
E. 12	number and gender of wage laborers hired

C. Tracking for the Program Information System for Strategic Management (PRISM)

Each USAID project is required to collect data for the PRISM. Some of the data are already collected as part of standard internal project management.

The following areas of information that can be tracked (and disaggregated by gender as appropriate) are:

Production Capacity
--volume of output
--yields per hectare
--laborers hired
--irrigation upgrades

Farmer Participation
--numbers by gender
--hectarage committed to CAPM crops

New Technologies Adopted
--production techniques
--farmers' organizations
--marketers

Training
--types and clients

Market information
--type and season

Marketing Costs
--to firm and clients

Market share
--by agricultural commodity

Market Chain
--by types of linkages

Export/Sales
--by agricultural commodity

Business Attributes
--type of activities
--size and growth

The following is a list of indicators that will be monitored:

(1) Increased production capacity (all data will be given disaggregated by gender and type of farmer):

increase in total yield per hectare per commodity
increase in marketable yield per hectare per commodity
increase in credit extended to farmers per source and amount
increase in hectareage under irrigation
upgrades in irrigation systems

(2) Improved farmer participation (all data will be given disaggregated by gender and type of farmer):

increase in number and types of farmers
increase in number and percentage of women farmers
increase in hectareage devoted to project commodities
increase in commodities delivered to project marketers
increase in participation in farmers' organizations
increase in use of farmers' organization packing/grading sheds

(3) Improved technical support to farmers' organizations:

increase in formation of farmers' organizations
increase in record keeping, support to members, services offered
increase in earnings

(4) Improved business management skills:

increased earnings of Swazi-owned businesses ((Marketing Firm and other entities)
increase in use of proper accounting techniques, record keeping
increase in staff business skills

(5) Improved marketing:

increase in farmer sales through project-linked firms
increase in market diversification

(6) Expanded market share for Swazi-owned businesses (Marketing Firm and other entities):

increase in Swazi exports to regional markets
increase in sales revenues
increase in earnings

As data collection relates to PRISM targets, five "Seasonal Assessment Forms" were developed to track project targets. The first three relate to financial, sustainable practices, and development of markets by the firms, but are obsolete and new data collecting formats must be developed. The fourth, "Farmers Credit/Labour Analysis by Region" relates to farmers' credit and labour (however, labour hired should be disaggregated by gender). Information needs to be collected on credit and bank loans by type (there are at least six credit sources for farmers and they have different requirements and conditions; credit in relation to CAPM activities may be quite different between scheme and non-scheme farmers) Data on training are properly collected and disaggregated by gender, type of training and category of participant. As noted above, data collecting formats on firms, markets, and farmers' organizations will have to be developed in order to collect these PRISM data.

D. Responsibility and Oversight

The CAPM Project will be monitored by USAID, GOS, the contractor, and SGBT. In particular, data management is needed in terms of data collection (from field assistants, technical assistance personnel concerned with farmer's organizations, and the marketing firm) and in terms of preparing summary analyses. The Chief of Party must oversee the operation, each technical assistance person must develop and utilize a system for items under his/her purview in terms of measuring impacts and calculating indicators.

E. Evaluation

Evaluation of the project will be through one internal review in 1994 and one final external evaluation. The internal review will be extensive and provide design guidance and corrections in terms of (a) data collection and analysis; (b) project implementation in relation to design; (c) inclusion of women and gender issues; (d) assessment of the impact on smallholder income and expansion of the production base; (e) assessment of the development of the Marketing Firm as providing forward and backward linkages; and (e) evaluation of farmers' organizations in the marketing chain. USAID, the contractor, and GOS will use the internal review findings and

recommendations to take immediate mid-course corrective actions.

The internal review will involve all project participants (appropriate USAID Mission and REDSO personnel, GOS, firms, farmers, the contractor, and SGBT). The internal review will examine the timeliness of inputs, the realization of outputs, management and implementation issues, and the appropriateness of planned inputs, activities and outputs. Semi-annual implementation reviews (PIRS) will provide information concerning progress towards EOPS and outputs, problems encountered, and actions taken to resolve these problems.

The external evaluation will document the final degree of success of CAPM and lessons learned from the CAPM experience. A final external review is scheduled for July 1996. The evaluation team will consist of (1) a fresh produce production and marketing specialist; (2) an agribusiness analyst and marketing specialist; and (3) a social analyst and monitoring and evaluation specialist. This final evaluation will determine whether or not CAPM achieved its purpose and end-of-project status.

V. Summary of Updated Project Analyses

A. Technical Analysis

The updated Technical Analysis is a revision of the Technical Analysis of the 1991 Project Paper Amendment (PPA) for the CAPM project. Revisions have been made to coincide with information developed through the CAPM project as of June 1993 and from information gathered and developed by the Assessment Team and USAID/Swaziland, with CAPM team assistance. The project focus has been narrowed to fewer crops based on experience in the field and the market. Some crops will be developed under the project for summer markets, crops new to the project but not to the farmers.

The project will place emphasis on three areas of the agricultural system: the production, marketing, and trading of produce. Emphasis will be placed on production and the formation of small-farmers' organizations to ensure that produce is available in form, volume, quality, and timing for marketing or trading. This section provides an analysis of the constraints to production and marketing which must be overcome by the CAPM project.

The 1991 PPA has much technical information on a number of crops. These are not included for the sake of brevity and are considered as valid analyses of those crops. Some additional discussion of the CAPM crops is included.

The market potential exists for winter and summer production but the success of the small farmer depends on an ability to produce efficiently and make his production acceptable in the market in

form, timing, quality and volume. The challenge for this is greatest in the summer when pests and disease are serious constraints and the competition from imported produce is heavy.

For technical reasons and for marketing reasons, the farmer needs to diversify his production. Technically, the farmer must have crops selections for rotation of production and to avoid the dangers of a monoculture dependence.

In the regional market, there is a high level of sophistication with regard to types and varieties of produce items available. The opportunity exists for production of crops not previously grown for regional export by the small farmer through ample "windows" and "niches." There also exists the opportunity for introducing some "unique" produce items through market development.

Another area of continued development which is necessary is that of production/marketing linkages through the production of supplemental volumes to farmers who have established niche markets or who have marketing contracts for large volumes of commodity crops.

Swazi NAMBoard trading firms must become more efficient to compete and new methods of sourcing product need to be developed along with management skills.

The competition on the NAMBoard market and in the regional market for trading firms such as Philani is from South African firms. The South African firms have an advantage over Swazi firms in that they purchase many of their produce needs directly from South African farmers at their market location. Swazi firms purchasing on the South African market pay a mark-up on the same and thereby reduce their competitiveness. This can be alleviated by forward contracting or purchasing directly from South African producers. This assistance from CAPM coupled with assistance in seeking new markets, will strengthen the position of Swazi trading firms in the marketplace.

In addition to this initiative, intervention will take place to organize small farmers to develop their ability to participate in more of the value-added activities required for marketing their crops. By assisting organized farmers produce and market their produce, CAPM will be ensuring optimal returns per hectare for the small farmers.

The CAPM project will actively seek alternative crops and markets for small farmers. Potential exists for many crops at various times in the South African market. Market analysis and feasibility studies will be conducted and action taken to coordinate production and marketing activities to meet viable opportunities.

A Marketing Firm will be organized by the CAPM project as a private enterprise to serve as the mechanism to effect the production and marketing activities until the end of the project, at which time it will continue as a marketing/management firm for small scale farmers.

The focus of the CAPM project has been narrowed to concentrate on those activities which will directly improve the NAMBoard trading firms and the small farmers while providing a demonstration of how the market opportunities can be exploited.

All this activity has one basic purpose; create an environment in which small farmers can improve their economic conditions and the condition of the agricultural sector as a result.

B. Administrative and Organizational Analysis

The production and marketing system in Swaziland must be strengthened to increase the economic potential of its participants. Swazi firms on the NAMBoard market cannot efficiently compete with South African firms. Small farmers' yields must be improved and their returns from marketing must be increased.

Three basic organizational structures will exist under the revised CAPM project. Swazi trading firms, of which Philani Fruits and Vegetables (Pty) Ltd. is presently the only representative, must become more active in reducing costs and increasing turnover of fresh produce. At present, Philani is threatened in its market position by South African firms which have the advantage of years of management experience and direct access to South African farmers' production.

The work of CAPM in the development of management skills of Philani and other firms must continue. Financial management, especially as it relates to buying and selling must be normalized to create confidence in other entities that deal with the firm(s). New outlets must be continuously sought and trading agreements or contracts effectively negotiated. Swazi firms must learn how to by-pass the South African produce markets and purchase directly from farmers as much as possible to avoid the wholesalers' mark-ups.

Small farmers, as individuals, are vulnerable to the vagaries of buyers. Regardless of improved production, should it occur, an individual farmer has little or no bargaining power nor access to market information.

Small farmers need to organize themselves and their production. Small farmer organizational development is an objective of the extended CAPM project. The farmers' organizations will be directly involved in programming production and making that production ready for the market. They will collaborate with a marketing firm which will be their agent in the marketplace. They will participate in the market without having to bear the costs or problems of local management. They will, through the organization and the Marketing Firm, continue to receive technical support after the CAPM project ends. The farmers' organization will also be the instrument for seeking assistance from MOAC and other institutions and the mechanism through which assistance can be channeled.

A Marketing Firm will be created to serve as the marketing management of the various farmers' organizations. This will overcome the costs and the difficulties of developing market management capabilities in each farmers' organization by creating one effective production-marketing team dependent on optimum returns to farmers' produce for their livelihood. This will distribute the costs of management among all the farmers' organizations. To enhance the income potential for the farmers and the firm, the firm will actively work with the farmers in all activities required to produce high yields of quality produce.

To accomplish these three tasks will require an effective CAPM team working closely with the Small Business Growth Trust (SBGT).

The CAPM team must be composed of three experienced professional with the ability to develop innovative opportunities for the NAMBoard firms and small farmers. It must also have the ability to pass skills in marketing, production and general agribusiness on to all participants in the marketing system. The CAPM team will be as successful in their efforts as the weakest link in the marketing system.

To support the CAPM activities in agribusiness, SBGT will be responsible for managing the creation and capitalization of the Marketing Firm and its financial planning. A collaborative effort between SBGT and CAPM will result in a business plan for the firm. SBGT will place an agribusiness advisor on their staff who will assist CAPM and also be developed as an agribusiness advisor to serve other SBGT clients from the agribusiness sector.

The organizational structure proposed creates many interdependencies which will serve to strengthen one another as they develop a well-rounded competitive marketing environment providing the optimum returns to its participants while providing for its own continued growth.

C. Economic and Financial Analyses

1. Economic Analysis

An economic analysis was conducted to assess the costs (total outlays) and benefits (value of output) for the economy of Swaziland from the CAPM project from March 1, 1994 to September 30, 1996. The value of output and the outlays were projected for a twelve-year period. The basic assumptions for the economic analysis are consistent with findings in the technical, financial, and social analyses.

Crop budgets for the four winter crops of concentration and four potential summer crops formed the basis for calculating total production and outlays by participating farmers (Appendix Tables FA-1 to FA-8). With the assistance of the technical assistance contractor team for the CAPM project, projections of the number of participating farmers, the total area planted, costs of production, yields per hectare, and prices for the produce were made for the twelve-year period for each of the crops (Appendix Tables EA-1 to EA-8).

The four winter crops of concentration under CAPM are fresh table tomatoes, sweet peppers, sweet corn, and Nema 1400 (processing) tomatoes. The four summer crops described in the technical analysis as being potentially profitable for production by small farmers are green beans, potatoes, onions, and cabbage.

The total area planted to the four winter crops by participating farmers was assumed to achieve a maximum of 200 hectares by the year 2002 (Table E-1). That is approximately 70 percent of the actively irrigated hectarage of irrigation schemes that meet project criteria, and 47 percent of the potentially irrigated areas of irrigation schemes. Since disease and insect hazards make the production of summer vegetables more difficult, and since many small farmers prefer to grow the more traditional crops such as maize during the summer, it was projected that a maximum of 130 hectares of summer vegetables would be grown by participating farmers.

The calculated gross revenues for each of the four winter crops and two potential summer crops were added to obtain the total value of output in emalangenani. It was projected that 20 percent of the output would be sold locally and 80 percent would be exported regionally. The total value of output was converted from emalangenani to U.S. dollars using an exchange rate of E3.00 to \$1.00. The total value of output in dollars was discounted to obtain the "value added" as a result of the project by using the same factor that was used in the 1991 PPA Economic Analysis, 78.6%. Thus, value added represents the gross benefit of the project.

Outlays were then subtracted from value added to obtain the net benefit stream on which to calculate the internal rate of return for the project. Total outlays for the project include the USAID allocation for the technical assistance, Government of Swaziland expenditures on agricultural extension related to the project, estimated investments by the agribusiness firms closely related to CAPM, and the investments and expenditures by participating farmers, including production costs, postharvest costs, and marketing fees.

The internal rate of return (IRR), using the "most likely scenario," or the expected costs and benefits, is 20%. While this is substantially lower than the 50% IRR estimated at the time the project was redirected and the 1991 PPA was written, it is an acceptable rate for a technical assistance project. Furthermore, it is based on the experience of the past year and a half, which provides a much better basis for making projections.

Sensitivity analyses were carried out to determine the effects of alternative sets of yields, costs, and prices of product. The rate of return is quite sensitive to changes in prices of product; it is less sensitive to costs of production and yields. Table 2 summarizes the rates of return for alternative sets of yields, costs, and prices.

Table 2
Internal Rates of Return Under Alternative
Sets of Yields, Costs, and Prices of Product

	<u>IRR</u>
10% increase in yields	24%
10% decrease in yields	16%
20% decrease in yields	12%
20% lower prices	2%
10% lower prices	11%
10% higher prices	29%
10% higher production costs	18%
10% lower production costs	22%

2. Financial Analysis

The detailed financial analysis in Annex F consists of two parts: (a) analysis of costs and returns to farmers from the crops on which the project is focused, and (b) analysis of the financial feasibility of the proposed Marketing Firm, viewed from the standpoint of both the Firm and small farmers and their organizations.

(a) Costs and Returns to Farmers from Selected Crops

The technical analysis identifies four winter and four summer crops as appearing to merit the focused attention of CAPM. Following is a summary of the estimated costs and returns to farmers from production of the crops:

Crop	Estimated Yield (MT/Ha)	Farmer Price (E/MT)	Gross Returns (E/Ha)	Farmer's Production & Postharvest Cost (E/Ha)	Net Returns (E/Ha)
Winter					
Tomatoes	20	550	11,000	3,388	7,612
Sweet Pepper	15	800	12,000	3,131	8,869
Sweet Corn	7	1,800	12,600	2,533	10,067
Nema Tomatoes	30	560	16,800	3,532	13,268
Summer					
Potatoes	35	460	16,100	5,514	10,586
Onions	20	450	9,000	2,528	6,472
Cabbage	35	150	5,250	3,446	1,804
Green Beans	6	600	3,600	1,802	1,798

(b) Feasibility of the Proposed Marketing Firm

An analysis was carried out for each of the crops to estimate the financial benefits to small farmers and the Marketing Firm from the services provided by the Marketing Firm to farmers and their organizations. For the year 1996, when it is assumed that three small farmers' organizations will have been formed with which the Marketing Firm will collaborate in the marketing of produce, it is estimated that the total benefit of the collaboration will be E1,208,328.

A 36-month cash flow calculated for the Marketing Firm indicates that the Firm's operating costs will be approximately E396,000 per year. Thus, the mutual benefits to the Firm and the small farmer clients in 1996 would be E812,328:

Total benefits	E1,208,328
Less operating costs of Firm	396,000
Benefits to be shared	E 812,328

In calculating the cash flow, it was assumed that one small farmers' organization would be formed at the beginning of each year during the initial three years. To be conservative, it was assumed

that the Marketing Firm would only market for and share benefits with farmers who were organized. Thus, it would be month 25, during the final year of the CAPM project, before the full amount of benefits would be realized. Further, it was assumed that only two-thirds of the benefits would be realized by the Marketing Firm and the small farmer clients.

The way in which the benefits would be shared between the Marketing Firm and its small farmer clients would have to be negotiated. For purposes of this analysis, it was assumed that the Firm and the farmers would share equally after the Firm's operating costs were covered. It was further assumed that one-third of the Firm's operating costs would be covered during the first year, when the Firm was working with one organization, two-thirds would be covered the second year, in working with two organizations, and the full cost of operating the Firm would be covered the third year prior to sharing the remaining benefits.

These projections indicate that small farmers' incomes can be enhanced if farmers' organizations, on behalf of their members, contract with such a Marketing Firm to manage the marketing of their products. At the same time, the Marketing Firm should make good returns for their efforts beginning the third year.

The cash flow indicates that it would take about \$75,000 to get the Firm launched -- say, \$50,000 equity and \$25,000 debt. By the end of the third year, the debt would be paid off and the Firm would have accumulated about \$30,000 in cash reserves.

D. Social Soundness Analysis

The content of the Social Soundness Analysis (SSA) is based on the previous SSA and baseline studies, current farmer surveys, Women in Development studies of Swaziland, CAPM and other donor-financed project documents, a rapid rural appraisal of CAPM farmers, interviews with CAPM staff and farmers themselves, and analysis of data on CAPM participants. Particular consideration is given to gender issues and the roles and participation of women.

This SSA is focused on the various types of farmers on irrigated lands as the client groups for the revised CAPM project. The farmers are divided into the categories of scheme farmers on Swazi Nation Land (SNL), individual SNL farmers, and Title Deed Farmers (TDL), based on their irrigation and land holdings, access to resources, production needs, and access to markets. Women do not traditionally hold land in their own names, but sometimes act as guardians for their sons and often manage land while spouses/male relatives are engaged in off-farm employment. At least 17% (30% to 40% in a few schemes) of plots on irrigated schemes are allocated to women in their own names. Women play major roles in farming activities in general, and increasingly as vendors and hawkers of vegetables and fruits.

Irrigated scheme farmers on SNL have had ongoing technical assistance for over 20 years from various sources (Chinese Agricultural Mission projects, IFAD projects, and government extension). Most of the assistance has been in production and credit. Many of the same scheme farmers that CAPM is working with are also participants in these other projects. Farmers grow vegetables in addition to staple crops (maize and rice on several schemes), with tomatoes being the most popular horticultural crop; CAPM has made inroads in green pepper and sweet corn production.

Farmers know they need assistance in production (for variety selection, diseases and pests, rotation patterns, etc.) and marketing for tomatoes and for newer crops such as green peppers. They generally lack confidence in the marketing channels available to them, yet strategize and attempt to use a variety of market channels. Individual SNL and women scheme farmers also need assistance in negotiating bank loans for irrigation systems and credit for inputs, respectively.

Scheme farmers are organized into associations in which members come together to maintain irrigation furrows, rent/buy farm machinery, and the like; however, there is little group borrowing or business organization. As presently constituted, farmers' associations are encouraged by the MOAC to manage problems and discipline errant members. This is different from the farmers' organizations envisioned by the revised CAPM project, which will be small agribusinesses to collect product, add value, provide volume, and keep books. Farmers not in CAPM will also want to participate if the market conditions are favorable. Similarly, whether or not all the members of the farmers' organizations will sell the majority of their product through the organizations and the Marketing Firm will depend on adequate management, transportation, communication about product readiness and market availability, and timely and adequate remuneration. With the formation of farmers' organizations, every attempt should be made to include women in the management and decision-making activities of these organizations.

A training program will need to be implemented that develops skills (leadership, record keeping, business, and management) and to explain to farmers how they will be able to improve their economic well-being by participation in CAPM. Training should also focus on improving farmers' (both women and men) knowledge and understanding of market channels, consignment selling, etc.

Farmers perceive CAPM as being a project dedicated to marketing as well as to production. They understand their own need for improved marketing channels. The environment for successful development of organizations of the farmers is favorable, and the few constraints can be alleviated by careful consideration.

Annex A

Commercial Agricultural Production and Marketing Project
Logical Framework Matrix (revised 7/93)

Narrative Summary

Objectively Verifiable Indicators

Means of Verification

Assumptions

Goal: To increase the agricultural sector's contribution to the national economy of Swaziland

1. Increase in exports of horticultural crops from Swaziland
2. Decrease in imports of horticultural crops to Swaziland
3. Increase in incomes of targeted group of farmers

1. Sales statistics from assisted private marketing firms
2. GOS/NAMBoard statistics
3. Records on participating farmers internal & external evaluation

1. Expansion of commercial agricultural production & marketing will increase agricultural sector's contribution to national economy of Swaziland
2. GOS will provide budgetary & human resource support to project activities in production and marketing

End of Project Status (EOPS)

Purpose: Establishment of an environment that will stimulate increases in small-scale commercial agricultural production, other agribusinesses, & domestic & export marketing activity

1. One or more Swazi firms on the NAMBoard market with an increase of 50% turnover with at least 25% of produce for domestic sales purchased from Swazi farmers
2. At least 3 small-farmer organizations representing about 200 farmers and 155 hectares of CAPM production organized to produce quality produce for the regional & export markets
3. One Marketing Firm established to provide marketing management to small farmers' organizations, act as their marketing agents & provide TA for production and postharvest handling of fresh produce
4. Potential net income per hectare of participating farmers increased from about E4,500 to E8,000 through increased yields and improved returns from marketing of two crops per year
5. Approximately 80% of CAPM farmers produce processed through packing facility & marketed by small-farmer organizations/Marketing Firm to NAMBoard firms, local & regional markets & hawkers
6. Regional marketing by farmers' organizations/Marketing Firm of at least 4 winter crops with an estimated return of E_____
7. Domestic marketing by farmers'

Companies' sales reports; NAMBoard statistics & small farmers' records

Project reports; small farmer organization reports & records; on-site verification

Project reports; small farmer organization reports & records; on-site verification

Farmer & farmer organizations' records; interviews with farmers; Marketing Firm's records

Farm records; farmer organizations' records; Marketing Firm's records

NAMBoard/GOS statistics; Marketing Firm records & receipts; farmer & farmer organizations' records

Marketing Firm's records & receipts; Swazi farmers can produce more

Swazi firms can & will effectively compete in local & regional markets & source from Swazi farmers

Small farmers are interested in organizing to improve production & marketing of their crops

A private Marketing Firm & farmers' organizations would be mutually benefited in a business relationship. Small farmer organizations would benefit from marketing management and TA from a marketing firm

Farmers are socially & economically prepared to participate in organized production & marketing activities

Farmers can produce quality crops & will use farmers' organizations as the principal outlet for their produce

Small farmer production & marketing firms' activities can realize the potential that exists in regional markets

organizations/Marketing Firm of at least 5 summer crops with an estimated return of E _____

farmers' & and farmer organization records

efficiently and obtain a larger share of the domestic market

- 8. At least 3 packing facilities established and small farmer organizations trained in and managing their operation
- 9. Total volume of produce exported to regional markets by CAPM farmers about _____ MT/year; total volume sold to domestic market about _____ MT/year
- 10. Active involvement of at least 6 MOAO extension agents in the production & marketing activities of the farmers' organizations
- 11. Training provided to the management & membership of at least 3 farmer organizations, the management & staff of at least one NAMBoard firm, about 200 small farmers and 6 MOAC extension agents

Project reports; small farmer organization records & reports; on-site verification

Small farmers & their organizations have the interest & ability to operate packing facilities and economically benefit from this activity

NAMBoard/GOS statistics; farmer organization records; Marketing Firm's records & receipts

Small farmers will choose to participate in both domestic and regional marketing

Project reports; MOAC reports; farmers' organization reports

Extension agents & farmers can benefit from extension agents working with organized small farmers

Reports of training program implementation; interviews with trainees

All participants in production and marketing program will accept & benefit from training

Output Components

Outputs

Private sector agricultural development

- 1. Viable opportunities created for private sector activities that stimulate increased commercial agricultural production & marketing
- 2. At least one marketing firm will be established to facilitate marketing of small farmer produce with total sales of E _____ in year 1; E _____ in year 2; & E _____ in year 3
- 3. At least 3 farmers' organizations established representing about 200 farmers to provide a model for Swazi agricultural production and marketing
- 4. A total of _____ MT sold by farmers organizations through their Marketing Firm in 1996
- 5. Regional export sales to be

Marketing Firm's records; Project on-site verification; Study documents; USAID-Contractor management feed-back

Private Swazi firms will take advantage of opportunities to develop their firms, and ensure the necessary financing to expand their operations, increasing production & marketing of Swazi horticultural produce

Direct observation of assisted private firms; companies' annual reports; farmer organization records

Farmers on irrigated schemes will organize and market their produce through assistance of a Marketing Firm

Farmer organizations records; Direct observation; Project reports

Farmers will choose to join an organization to improve production and marketing

Marketing Firm's records; Project reports; NAMBoard/GOS statistics; Farmers' & farmers' organization records

Marketing Firm's records; Project

_____ MT in year 1; _____ MT reports; NAMBoard/GOS statistics;

in year 2; _____ MT in year 3 Farmers' & farmers' organization records

6. Farmers' net incomes to increase from about E4,500/ha to E8,000/ha

Project analysis; farmers' and farmers' organization records

7. Swazi NAMBoard firms to purchase 25% or more of their produce needs from Swazi farmers for domestic sales

Marketing Firm's records; farmers' and farmers' organization records and receipts

Produce is potentially available to marketing firms for domestic sales

Project Inputs

Technical Assistance (TA)

Long-term Expatriate
Long-term Local
Short-term Expatriate
Short-term local

91 person months
217 person months
8 person months
As can be budgeted

USAID financial reports and records, contracts, training records, GOS records

Training

10 annual workshops/field days averaging 1 day each

Commodities

Computer, vehicle repairs and replacement

GOS

Counterparts, office space, land, housing, materials, participants' transportation

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Annex B
UPDATED TECHNICAL ANALYSIS

I. INTRODUCTION

A. The CAPM Redirection

The CAPM project has been redirected to focus on a narrower target group with the objective of:

- o Achieving visible results in the field in the near term
- o Targeting of small-scale farmers with potential on irrigable land.

Interventions facilitating private-sector development accelerating progress toward commercial success by discreet groups of producers. The project will concentrate on development of horticultural and specialty crops.

B. Focus

The redirection seeks to demonstrate that vertical coordination for the output of small-scale growers producing primarily for the fresh market can be achieved through private-sector enterprise. In brief summary, the basic objective is to put into place:

Self sustaining, profit-driven systems involved in marketing for and coordinating the production of small-scale Swazi farmers.

II. BACKGROUND

A. Present Production Situation

The present production base for Swaziland is made up of three distinct groups:

- o Title Deed Land (TDL) farmers
- o Swazi National Land (SNL) farmers
- o Producers in the Republic of South Africa

1. Title Deed Farms

TDL producers include individual farmers as well as large estates. Although some TDL farmers have relatively small holdings of land, they are not considered to be small-scale producers and are not a primary target for assistance. They may participate in the marketing program.

2. Swazi Nation Land Farms

SNL farmers produce under widely divergent environmental conditions. Only producers who have access to irrigation can be targeted for the objectives of this project. This means production with long-term potential of around 1,757 farmers/homesteads covering 1472 hectares, representing 2.6 percent of the total land currently under irrigation in Swaziland.

The inclusion of the Vuvulane Irrigation Schemes which grow estate crops in the main, but have significant potential for horticultural production, would increase the potential target area.

SNL irrigation scheme farmers mainly live in traditional homestead environments where traditional crops are grown (maize, sorghum, etc.). Most schemes have, at some time, had some Government of Swaziland (GOS) involvement and can be divided into four categories:

- o Rural Development Area (RDA) schemes
- o Cooperative/Association schemes
- o Individual/Private schemes
- o Large-Scale Swazi schemes

RDA schemes were government initiated, the GOS providing all the funding, design, construction and extension services. For various reasons, these schemes have not been entirely successful.

Cooperative/association schemes are also found in RDAs. The significant difference being that these schemes were requested by the group or association of farmers in the area. The farmers also contributed to the scheme cost, in both cash and in kind. These schemes have generally been more effective.

Small farmer schemes are those in which the farmer requested GOS assistance in design, but paid for and constructed the schemes themselves. There is little information regarding the distribution or success of this type of scheme, although statistically, this type of scheme makes up 35 percent of the total SNL irrigation (Myeni and Brosz, 1990).

Large-scale Swazi schemes have not been formed, with the exception of perhaps the Vuvulane project and the Malkerns Irrigation scheme, but it is proposed that the Komati river basin could provide a large area for SNL irrigation production, and there is a possibility of a significant development in the Lavumisa area (Brosz, 1990).

3. South African Producers

Producers in the RSA must be considered when assessing the production base in Swaziland, since the country serves as a significant competitor, and if properly exploited, a significant market.

Efforts need to be made to link Swazi marketing firms with South African producers so that supplies of produce needed from that country can be purchased at a competitive price. To by-pass the Reef markets would result in considerable savings and make the NAMBoard firms more competitive.

4. Seasonality of Production

Most vegetables in Swaziland are grown during the winter period, which traditionally leads to an oversupply situation, and corresponding low prices in the August to November selling season. It is estimated by various sources that between 50 to 80 percent of produce grown never reaches market at this time of year because of a combination of over supply and poor or non-existent marketing infrastructure. This has undoubtedly contributed to the farmers' lack of motivation with regard to increasing vegetable production.

The problem of seasonality of production is seen as the major factor limiting the development of the industry in Swaziland, given the markets' requirement for regularity of supply. When viewed against the background of regular, reliable and easily accessible supplies from South Africa, it is easy to see why the local producer is failing to compete with imported produce. Any intervention must address as many of the problems associated with this skewed production performance as possible.

Preliminary market studies indicate that prices for many items in the South African market are highest in the fall months. This would allow late summer planting to take place for fall production at a better price and better rate of production. The green pepper market is a good example of this seasonality of production and price.

B. Present Marketing Situation for Horticultural Commodities

The present marketing situation is dominated by two main intermediaries, namely:

- o Hawkers
- o NAMBoard.

1. Hawkers

The 150-200 hawkers at present are estimated to participate in 80-90 percent of scheme and individual SNL producer sales (van den Burg, 1991). The advantages of hawker sales to the producer are that they:

- o Pay cash at farmgate
- o Provide transport
- o Operate with low overheads
- o Provide "packaging" in the form of bags or crates

From the sellers perspective, however, they have the disadvantages of:

- o Purchasing limited quantities
- o Being unreliable
- o Providing no field feedback
- o Preferring to buy from guaranteed suppliers in South Africa

The hawkers generally access the urban local and municipal markets with relatively small volumes of produce.

2. NAMBoard Fresh Produce Market

This organization was set up in 1988 to provide the marketing component specifically for small-scale horticultural producers. Advantages to the producer of selling through the agents of this organization are that the agents can:

- o Take large volumes
- o Provide transport for "critical mass volumes"
- o Consolidate product for the market
- o Provide some form of import protection

The disadvantages of selling through NAMBoard's agents, from a producers point of view, are:

- o Sales on consignment offer no guarantee of sale or if sold, at no set price
- o High overheads
- o Limited "marketing" capacity

The current market is almost entirely domestic, although some exports of tomatoes and limited produce exports to Mocambique have taken place. This means that most SNL producers feed into the urban and municipal markets as well as the rural market. The CAPM project has demonstrated that participation in the RSA market is

feasible.

C. Technical and Marketing Constraints

1. Technical Constraints to Expanding the SNL Horticultural Sector

Technical constraints to expanding the SNL horticultural sector include:

- o Labor competition with dominant summer crops, especially maize
- o An increase in pest and disease problems with summer production
- o A lack of suitable cultivars in some crops
- o A lack of extension workers trained in horticulture
- o Low yields

2. Marketing Constraints to Expanding the SNL Horticultural Sector

Marketing constraints to expanding the SNL horticultural sector include:

- o Lack of market information and historical prices
- o Lack of transport
- o Cash/credit shortage
- o Uncertain market - high competition
- o Lack of knowledge about quality and presentation
- o Lack of "critical mass" to attract buyers
- o Poor communication links
- o Seasonality
- o Lack of a mechanism for assembling farmers' production

The above mentioned factors are by no means a complete summary of all documented constraints, but are the major problems cited by farmers and experts alike.

D. Technical Constraints

1. Labor

A shortage of labor for summer crops has been reiterated many times as a constraint to summer production. The apparent success of some irrigation schemes however, is seen as an indication that it is not universal, and that where the perceived risk of summer production is lowered, and financial returns become significant in terms of labor utilization, then summer production of horticultural crops will not be restricted by labor shortages.

2. Pests and Diseases

It is certain that summer production carries with it certain risks of increased pest and disease pressure. These problems are however, not insurmountable, given adequate research backing and continuous "in-field" assistance.

3. Cultivar Selections

Cultivar selection is a real problem with many crops, and is associated with both increased pest and disease pressure as well as high summer temperatures. Research work through the Cropping Systems Research Extension and Training Project (CSRETP) funded by USAID and MOAC's research efforts, has significantly improved the situation in Swaziland. However, a sustained research effort needs to be maintained so that cultivar availability continues to become a less significant constraint.

4. Absence of Extension Workers

Absence of extension workers cannot be quoted as a general constraint, as there are many very active MOAC extension workers. It is however, a significant factor in many areas and lack of continuous field support does pose a serious constraint to horticultural production, and it is an area that any intervention must consider seriously.

5. Low Yields

Low yields can be directly related to all the above mentioned technical considerations. In the absence of any improvement in these conditions, yields cannot increase, returns to labour and margins will not rise, and the crops will simply not be produced profitably.

E. Marketing Constraints

The technical restrictions discussed above are compounded by marketing problems - often quoted as the most significant constraint to expansion of the horticultural industry.

1. Lack of Relevant Marketing Information and Prices

Lack of relevant market information and market prices certainly reduces market awareness among potential producers, and gives them little ability to read the market and make decisions accordingly, but is not the most significant aspect of a poor marketing infrastructure.

2. Cost and Availability of Transport

The cost and availability of transport is another weakness of the system and is compounded by the other technical and marketing constraints. The factor of insufficient "critical mass" for example, leads to problems in utilizing available transport efficiently.

3. Cash and Credit

Some SNL producers use credit, and given similar conditions of collateral and market, this would tend to indicate that lack of access to credit is not a serious constraint. It is felt that it is not so much lack of credit, but the perceived high risk associated with the production process that prevents the extensive use of credit (Gardner and Bielen, 1990). Women have less access to credit than men, and less knowledge about how to obtain loans.

4. Uncertain Markets

The first question asked by potential producers when questioned about the possibility of producing vegetable crops is:

"Where are we going to sell the product?"

This tends to indicate that the lack of a reasonably secure market is one of the more serious factors preventing expansion of the summer vegetable hectareage. Lack of a definite, reliable market raises the risk of production considerably, and reduces the perceived advantage that might be gained from higher crop margins. This, in turn, reduces the total hectareage planted and restrains growth.

5. Lack of Knowledge about Quality and Presentation

This problem accentuates the element of competition, especially when hawkers (the main market link for small-scale producers) have access to imported produce which is generally of a higher standard than the domestically procured product. Poor presentation and quality when combined with unreliable seasonal supply, tends to make the SNL producer a "supplier of last resort." Any intervention or support must have as one of its objectives, to change the position of the SNL producer to one of a "supplier of first choice."

6. Lack of Critical Mass

Buyers are not generally prepared, given the ease of import sourcing, to travel long distances to purchase small volumes of product. This means that producers who hedge the risks by growing small hectarages, put themselves in an even more uneconomic position, by growing volumes unattractive to buyers, especially when the volumes to be collected are very dispersed.

7. Poor Communications

The lack of communication in most rural areas is a factor which accentuates all of the above mentioned marketing constraints, and ensures that the small-scale producer is never in a situation where he can take anything but a residual position in the market.

8. Seasonality

As has already been discussed under the section on SNL production patterns, seasonality of production is seen as the most serious result of the technical as well as some of the above marketing constraints. In a situation where the producer can not be relied upon to supply consistently or reliably, the market will always purchase from the more reliable source as a first option. Unfortunately, once these supply links have been made, it becomes very difficult for the competing SNL producer to break these linkages, even in periods of significant SNL supply. It is clear that for sustained penetration into the domestic market system, SNL producers must be able to change the current trend of distinctly seasonal production. They must focus production to supply year round and at a quality standard which attracts buyers. This implies a refocusing of the target market. It is essential that the SNL producer perform at a level suitable for regional sales. Once an ability to compete in regional markets is developed, the knowledge will be transferable to competition in local market

III. PRODUCTION SCOPE

A. Technical Analysis

1. Geographical Advantage

Successful marketing of horticultural products requires the following:

- o Regular supply volumes
- o Reliable supply volumes
- o Consistent quality - to specifications
- o Form and presentation

One of the most significant factors affecting these attributes is climate or temperature, i.e., frost and hail risk and rainfall distribution. In order to have significant control over production, the marketing organization should have access to areas of divergent climate within a confined area. The geography of Swaziland provides all this.

In a country approximately 120 km from East to West and 150 km North to South, one finds significant areas of land in each of three general categories: low, middle and high veld. The low veld extends from 0-500 m above sea level (ASL). Middle veld is considered to extend from 500-1000 m ASL, and the high veld extends from 1000-2000 m ASL. Within the country, mean annual rainfall varies from less than 630 mm in the low veld areas to greater than 2000 mm in the high veld areas. There are areas which receive more than 1500 mm per annum, but these are generally more suited to forestry.

Temperatures tend to follow a pattern not dissimilar to rainfall, in that relief is the major control. Low temperatures and frost risks are higher in the high altitudes in the western areas of the country, and in the east, the frost risk is not significant (Gourdie and Williams, 1983).

These climatic characteristics, combined with a wide range of soil types, ensure that any vertically integrated approach to production and marketing of horticultural crops can produce a wide range of products (except temperate crops) all year round, thereby fulfilling the most important of marketing criteria: the production of regular, reliable volumes of product.

The fact that the MOAC has seen the advantage of irrigated agriculture and implemented irrigation schemes in all areas, means that horticultural production and marketing can be carried out at a significant advantage over other producing areas.

2. Cropping Options: Local and Regional Crops

The following is a list of crops grown in and around Swaziland and was the source of cropping options for incorporation into a technical analysis of crops for promotion in SNL irrigation schemes by the CAPM project:

**Initial Crop Selections SNL Producers
(PPA, 1991)**

- | | |
|---------------|---------------------|
| o Banana | o Green Maize |
| o Beetroot | o Green Pepper |
| o Brinjal | o Guava |
| o Broccoli | o Lettuce |
| o Cabbage | o Mango |
| o Carrot | o Okra |
| o Cauliflower | o Onion |
| o Celery | o Potatoes |
| o Chili | o Pumpkin |
| o Cucumber | o Spinach |
| o Garlic | o Sweet Potato |
| o Ginger | o Tomato |
| o Granadilla | o Processing Tomato |
| o Green Beans | |

This list of crops was analyzed and the analyses appear in the PPA, 1991. The focus has been narrowed to four winter crops and five potential summer crops. Other crops which have potential for production by small farmers are also mentioned below.

a. Cabbage

Cabbage has been chosen as a summer crop. It is one of the main crops grown by small farmers. Returns are not as high as some other crops, but risks are lower.

b. Chili Peppers

Chili peppers are a widely grown crop in Swaziland although no research base exists for them. A local nurseryman received training in drying of chilies and is exporting the product. Due in part to demand and in part to the high labour requirement, the exporter is looking for additional production. This is an opportunity for small farmers in the region and should receive some assistance from CAPM.

c. Green Beans

Green beans are a crop with which farmers in Swaziland have experience. It is a relatively heat tolerant crop and as such it has potential for summer production. It is a labour intensive crop and this suited to small farmer production assuming that the farmer has or can obtain the labour.

d. Green Pepper

Green peppers have proven to be a good crop for regional export production under CAPM. This is a relatively new crop for small farmers and yields need to be improved. This will continue to be in the export production program.

e. Onion

Onions can be produced in winter or summer and have a history of production by small farmers. Summer production is more difficult than winter, but will be the target reason for the CAPM project due to greater potential returns on the local summer market.

f. Potatoes

Potatoes have good potential for the summer market and an effort is underway to promote local production for the summer. One problem with potatoes is that it is of the same family (Solanaceae) as tomatoes and peppers and does not provide for the need to rotate out of this family to prevent development of pathogens. The production of potatoes will be a part of the CAPM summer program.

g. Squash, Butternut

Butternut squash is a crop with which Swazi small farmers have experience and which can be grown in the summer. This will be included in the CAPM summer program.

h. Tomatoes, Fresh Market

Tomatoes are one of the most successful crops grown on irrigated land in Swaziland, have good market potential, and are the first to have a mechanical sorting line. These will continue to be a CAPM target crop.

i. Processing Tomatoes

The processing tomato is no longer produced in Swaziland for processing. It has a good winter market in Durban, RSA. This will continue to be a target crop.

j. Other Potential Crops

Several other crops have market and production potential. Little research has been done on some of these and others are known to be susceptible to diseases. However, they should be tested to determine their possible use as alternative crops. These are:

- o Muskmelons
- o Honeydews
- o Crenshaws, Persians, Casabas
- o Garlic
- o Watermelon, Seedless Watermelon
- o Gem Squash

3. Summary of Target Crops

Table 1 lists crops that will receive immediate or on-going attention for production. Other crops will be developed when the market development specialist and the production specialist make the necessary analyses and trials.

Table 1: Target Crops

<u>Winter Crops</u>	<u>Summer Crops</u>
Fresh market tomatoes	Potatoes
Processing tomatoes	Onions
Sweet Corn	Cabbage
Green Peppers	Butternut Squash
	Green Beans

B. Gross Margin Analysis

A simulation model was developed to generate crop gross margin budgets and other financial indicators. All the crops selected were analyzed using the following inputs derived from CAPM crop budgets and Johannesburg and Pretoria market prices:

- o Yields
- o Price
- o Input (production) costs
- o Transportation costs
- o Marketing fees

1. Yields

The estimated potential yields have been calculated from information from CAPM production files and based on actual experience. Most farmers have not yet achieved their potential yields and significant amounts of field assistance will be necessary but assumed increasing levels of management are expected to achieve these levels during the life of the project.

Table 2: Potential Yields

<u>Crop</u>	<u>Summer</u>	<u>Winter</u>	<u>Possible Range*</u>
	-----MT/hectare-----		
Butternut Squash	14	-	NA
Cabbage	30	-	27-34
Green Beans	6	-	4-11
Green Peppers	-	15	11-23
Onions	25	-	39-57
Potatoes	28	-	40-46
Sweet Corn	-	7	9-14
Tomatoes, Fresh Market	-	20	26-31
Tomatoes, Processing	-	40	57-80

* Knott's Handbook for Vegetable Growers, Third Edition

2. Price

Prices for target crops used in the Financial Analysis were based on seasonal prices for 1990-91 trading results of the Johannesburg market and the 1991-1992 trading results of the Johannesburg and Pretoria markets. It is felt that these markets offer better prices as well as increased accessibility and volume turnover as seen in Table 3.

Table 3: Market Price Differences
Over the Period July 1990 to June 1992

<u>Market</u>	<u>Price Difference</u>	
	<u>1/7/90-30/6/91</u>	<u>1/7/91-30/6/92</u>
	-----Percent-----	
Johannesburg	0	0
Capetown	-17	-14
Pretoria	-10	-10
Durban	-14	-9

Table 4 shows the differences in volumes between Johannesburg and the other major markets. The ability to develop markets and obtain consistently reliable prices depends very largely on the volume of produce moved through the market.

Table 4: Market Volumes Traded
Differences Over the Period July 1990 to June 1992

<u>Market</u>	<u>Volume Difference</u>	
	<u>1/7/90-30/6/91</u>	<u>1/7/91-30/6/92</u>
	-----Percent-----	
Johannesburg	0	0
Capetown	-38	-39
Pretoria	-43	-44
Durban	-62	-64

The CAPM project will need to analyze all of the factors related to marketing, including transportation and ethnicity as well as demand. Currently (June 1993) there is also a market for some products in Mozambique which must also be considered, at least for short-term potential.

3. Local Market Prices

Local markets are being considered by CAPM as target markets for summer production, with winter production programmed for the greater demand in regional markets.

Local prices used in the financial analysis are from CAPM files of crop budgets. These prices are based on experience in local sales and, to some degree, NAMBoard prices. The crops listed in Table 2 indicate which crops will be summer or winter crops and these will

go to local or regional markets respectively. Other crops will be developed for both seasonal markets from trials carried out during the project life.

4. Input Costs

a. Fertilizers and Chemicals

The detailed budgets for the CAPM project (Appendices to Annex F) provide data for costs of fertilizers and chemicals. The range of chemicals used is based on recommendations by horticulturalists and reflect experience with production needs. There are other products which may substitute for some of these if they are available.

b. Seeds and Seedlings

For planting material inputs, the detailed crop budgets of the CAPM project were the source for prices for the Financial Analysis.

c. Tractor Hire

It is assumed in these budget models that the participating farmers will have access to tractors or cultivators from the MOAC tractor pool scheme or local sources, and a per hour charge will be levied.

d. Packaging

The costs of packaging are either "units of packaging" developed in the crop budgets or actual prices of carton from recent project experience.

e. Labor

While small farmers may or may not hire labor to cultivate and/or harvest their crops, it is considered in the crop budgets that all labor is hired. The labor cost varies with the activity. Labor is divided into three grades: grade 1, minimum wage; grade 2, minimum plus 13%; and grade 3, minimum plus 33%. The example cited in the 1991 PPA is that semi-skilled harvesting of lettuce would be costed higher than harvesting cabbage.

f. Transport Charges

For regional marketing, there are various transportation options available and the cost depends on the market and the client. If a product is sold to a South African firm which is a marketer and has back-haul space available, there may be no explicit cost. If the other sources of transport are used, the price per kilometer could be R0.10 to R0.25 per kilogram, depending on availability of back-hauls or local transport.

Local transport is considered to be the transport form the collection point or packing shed to the center where it is loaded for transport to regional market or transport from the shed or collection point to the local market.

g. Marketing Charges

Various marketing channels can be employed, and charges differ. One of the criteria used for determining a marketing strategy is the fees charged by the sector targeted. Some strategies, selling to a distributor or direct to a retailer may not entail a marketing fee. Other market outlets such as consignments normally carry a 10% commission fee and, at times, may be 12.5%. The marketing firm will be charging a fee for its services. The fee used for financial analysis is 12.5%.

h. Finance Charges

Many farmers use one or more credit systems to obtain financing for production activities. In these crop budgets, no finance charges have been considered, although it may add 6% or 7% to the cost of inputs.

i. Returns to Labor

Returns to labor were not calculated in these crop budgets and financial analyses. The financial analyses are basically a comparison of costs of inputs and other charges with real income. If returns to labor were considered, it would raise the total income, but that could be misleading.

j. Gross Margin Analysis

Each of the target crops was selected for a variety of reasons, the main one being the returns the farmer would realize by producing and marketing the crop. Experience with various crops since the project redirection in 1991 has narrowed the focus to nine crops for project attention. These nine crops are detailed in the financial analysis and accompanying crop budgets, with the exception of butternut squash for which insufficient data were available.

IV. MARKETING SCOPE

A. Domestic Market Size

For the domestic market, it is very difficult to estimate volume of produce consumed. Table 5 shows the amount of imports based on permits issued by NAMBoard for three of the target crops of CAPM for summer production; an unknown quantity has been brought in without permits.

Table 5: Imports of Fresh Produce, 1991

<u>Crop</u>	<u>Metric Tons</u>
Potatoes	7,676
Onions	2,266
Cabbage	616

A problem with these data is that they do not reflect how much of the produce was consumed in Swaziland and what part was re-exported to Mozambique. However, a significant portion can be assumed to be for local consumption and could be displaced by local production.

The experience of CAPM since 1991 has shown that there is an ability to produce and sell in the local market in the summertime.

One item, green beans, may have a regional as well as local market in the summer, as it is a labor-intensive crop. The 1991-92 summer season had an average price of R1.10 and an average high of R2.40 per kilogram on a turnover of approximately 195 MT. This demonstrates an excellent potential for the regional market for green beans.

B. Exports of Fresh Produce

Reliable figures for export volumes that can be used to calculate the impact of CAPM produce on prices in the regional market are not available. Data available from the Johannesburg and Pretoria markets indicate that the volumes sold would not be adversely affected by the projected volumes of production. The Mozambican and Durban markets would also be an outlet for some of the product. It is not considered that any of the target crops will be distributed in the regional markets would depress prices to a level that would seriously effect returns.

C. European Markets

The 1991 PPA includes in its technical analysis a section on European markets for selected produce. Some marketing is occurring of Swazi produce. This is an infant industry and has potential. The CAPM project has lent some technical support to this activity and may continue to do so, especially if small farmers can be brought in as supplemental producers. It is not contemplated that CAPM will actively engage the proposed marketing firm in marketing to European markets.

Section V The Project Intervention

A basic concept of the redirected CAPM was that the project would help create a vertically integrated production and marketing system to link small, potentially commercial farmers with lucrative markets for their produce. The concept is sound. In the implementation of the concept in Swaziland it has proved to be difficult to find or develop one or more firms that are fully integrated from production through marketing, including the provision of technical assistance to small farmers. The mutuality of interest between the firms and small farmers is largely missing. Firms presently assisted by CAPM continue to do significantly more business with RSA wholesalers than with CAPM farmers. At the same time, with considerable project support, progress is being made with Philani Fruits and Vegetables (Pty) Ltd.

This section describes a slightly modified project intervention that will help "close the loop" by creating, in addition to the on-going CAPM activities, a marketing firm in which small farmers and the firm would be mutually dependent.

A. Basic Project Intervention

The basic philosophy behind the intervention is:

The transition of small-scale, production driven farmers into market driven commercial farmers requires that the farmers be brought into the marketing system. This can be accomplished by developing a production and marketing enterprise that allows the farmers to participate beyond the farm gate with their products.

1. Objectives of the Intervention

The objectives of the intervention are to:

- o Develop a program for continued assistance to NAMBoard firms to increase their efficiency and competitiveness. Seek new opportunities for sales and procurement and linkages of small farmer production to these activities.
- o Develop a marketing firm that can assist small farmers in producing and assembling quality fresh produce and linking that production to markets to maximize returns to farmers.
- o Develop small farmer organizations through which technical assistance can be delivered for improved yields and with which the marketing entity can collaborate to improve incomes generated from a greater participation of the farmers in the marketing system.
- o Continue to assist other firms with which the project has been working and which show interest in the CAPM concept.

2. Targets of the Intervention

There are three target groups which are inter-dependent in their activities and for which a plan of action must be developed. The activities of the project are derived from what are perceived to be those interventions necessary to develop a core group of small farmers into commercial farmers. The three target groups that serve as focal points for CAPM are:

- o Small farmers and their organizations
- o The NAMBoard firms
- o The Marketing Firm

a. The Target Farmers

The core group of farmers who will make up the production base will be selected using the following criteria:

- o Must have irrigation and soils suited to the production of targeted crops.
- o Must be willing to grow targeted crops according to efficient agronomic practices extended by the project.
- o Must be part of, or in close proximity to, the regional targeted association or scheme.
- o Must be willing to participate in and/or market through a system of small farmer organizations and the CAPM-supported Marketing Firm.

b. The Farmers' Organizations

The role of farmers' organizations in the project will be to:

- o Facilitate the programming, production, collection, and preparation of crops for marketing.
- o Represent member farmers in negotiations with the marketing entity and the markets.
- o Provide a vehicle through which small farmer production, farm management and postharvest skills can be developed, applied, and reviewed.
- o Develop an awareness among small farmers of the role of a commercial farmer in the marketing system.
- o Represent the economic interests of its members and the agricultural community in general.

c. The NAMBoard Firms

The role of the NAMBoard firms in the project will be:

- o Serve as a possible outlet for the production assembled by small farmers' organizations.
- o Source other commodities in Swaziland by encouraging medium and large farmer production for the domestic market, in lieu of imported produce.
- o Provide a sales outlet for items other than "commodity" items on the local market.

The NAMBoard firms already have established outlets on the local market. This is a highly competitive market, especially in the summer. The NAMBoard firms are, for many of the crops produced by

small farmers, the easiest and sometimes the only way to penetrate some markets.

d. The Marketing Firm

To achieve its objective, the Marketing Firm, with the assistance of CAPM technical assistance, will undertake the following activities:

- o Develop alternative market outlets for targeted crops to ensure the optimum returns to both the marketing entity and small farmers.
- o Develop market information gathering methods and contacts for expanded marketing opportunities.
- o Assist small farmers in management of the organizations.
- o Develop and implement an effective program for delivery of technical assistance for production, production planning, and postharvest handling of crops.
- o Develop and implement a program to ensure that constraints due to lack of infrastructure can be managed.
- o Assist small farmers' organizations and small farmers in obtaining assistance in financial matters.
- o Assist small farmers' organizations and small farmers with procurement of production inputs.
- o Liaise with government and private enterprise organizations on industry-related issues.

3. The Present Status

The current CAPM project has developed the core group of farmers with whom they will initially work. This group is made up of farmers with irrigation in three regions. These are experienced CAPM farmers who have demonstrated an ability and interest to participate. It is expected that this base will be expanded each year.

The crops for concentration for the winter production season are:

- o Sweet peppers
- o Fresh market tomatoes
- o Nema 1400 tomatoes
- o Sweet corn

For summer production and marketing, the project will need to carefully analyze the income-generating potential of alternative crops, which may include:

- o Potatoes
- o Onions
- o Green beans
- o Cabbage
- o Squash

4. Additional Opportunities

Additional opportunities exist for small farmers to produce specialty or "supplemental" crops for producer/marketers with established markets. Examples of crops with some potential are dried chili peppers, baby and specialty vegetables, and potatoes. This will be a secondary activity as it will probably be only a select few farmers participating in the early stages.

The marketing firm will be established as a private enterprise and will function as such outside of the CAPM project with direction and control by CAPM and SBTG. The firm will be capitalized using CAPM project funds and will become increasingly self-supportive during the life of the project, until at project end it will be entirely self-supporting. During the project, the firm must also demonstrate that it can assist farmers in improving yields and returns to encourage the increased participation of new farmers as well as sustain the participation of the original core group.

The status of small farmer organizations is nascent, at best, but sufficient interest exists to suggest that the farmers' organizations can be developed with the capabilities needed for their expected level of participation in the production and marketing system.

5. Plan For Moving From Present Method of Operation to The New Strategy vis-a-vis NAMBoard Firms

Philani or any other Swazi firm trading on the NAMBoard market will continue to receive technical assistance from the project. This assistance will be organizational, managerial, and financial advise and specialized assistance in such matters as postharvest handling, negotiations, and packaging.

An intensive effort will be made to improve the procurement of produce by Philani and other firms. This will be accomplished by linking the firm(s) with large producers of seasonal items such as potatoes, cabbage, and onions for direct purchase. The CAPM Market Development Specialist will also work with the firm(s) and the producers to negotiate forward contracting for production.

The Market Development Specialist will also work with the firm(s) in developing outlets. The overall program will be to reduce cost of procurement and operation and develop new outlets to provide a greater turnover of produce.

C. Issues and Risks of Commercial Interventions of Small Farmer Production

In the 1991 PPA for the redirection and extension of the CAPM project the following were assessed to be:

"the more pertinent technical and marketing issues associated with the proposed intervention:

- o Attaining yields
- o Pests and diseases
- o Irrigation scheme functionality
- o Competition from other buyers
- o Competitive advantage of SNL farmers
- o Reactions of other intermediaries"

The first three issues are related to technical assistance provided by the CAPM project, GOS/MOAC, and others since the 1991 redirection. While these are ongoing issues which will always need attention, the CAPM project and others have demonstrated that these issues can be dealt with effectively.

The CAPM project has become more focused than originally planned, due in part to the efforts required to resolve these issues. The proposed marketing firm will need to have a technical assistance capability and, working through farmers' organizations comprised of experienced farmers, should be able to lessen the impact of these issues. Continued support from GOS on removing infrastructural constraints will also increase small farmers' ability to benefit from the project. This more narrow focus will also facilitate assistance from extension services and programs of the government and create an awareness of farmers' needs in the financial and public sectors.

Competition from other buyers, while still an issue, will be considerably lessened by this revised project approach. The marketing firm will move the product through the system at the lowest possible cost, optimizing returns to the farmers. There will be times, due to fluctuations in volumes, quality levels and other market forces, that produce will be sold to other market intermediaries. It is possible that Philani Fruits and Vegetables or other CAPM assisted firms will be marketing channels. The responsibility of the marketing firm will be to determine and employ the marketing channel or channels that provide the best short-and long-term returns to the farmers.

The farmers who have been incorporated into the CAPM project are mostly SNL farmers from irrigation schemes or independent SNL farmers with irrigation. Some TDL farmers participate in the project, although their number is small. The farmers' organizations will be formed around core groups of SNL farmers and technical assistance and marketing activities will be directed mostly through these organizations. If TDL farmers, or any other farmers, want to use the farmers' organizations as a marketing outlet, they will be encouraged to do so, although technical assistance may be less than it will be for organization members.

The vision of the project and the production and marketing program is that it will continue to grow. This will be accomplished by bringing neighboring farmers' production, and possibly their organizational participation, into the program. In the future, similar development will take place in other schemes and regions.

SNL farmers have good potential for increasing their incomes due to a competitive advantage from not having to pay for land or water. Low overhead and labor costs also improve their competitiveness. This potential cannot be realized by selling at the farm gate or not participating in the value-added activities associated with marketing. Improved yields and increased returns must be demonstrated to encourage similar participation by other small farmers.

The reaction of the other intermediaries in the marketing system is seen to be less than it was under the redirected 1991 CAPM project as the production will be mainly directed, initially at least, toward regional markets. As crops are developed for distribution on the domestic market, it is expected that much of the produce will be channeled through present market intermediaries. The goal will be to produce efficiently enough to encourage market intermediaries to purchase some part of their needs locally. It is expected that the marketing firm will cooperate very closely with NAMBoard, the NAMBoard associated firms, and hawkers to their mutual benefit and ultimately to the benefit of consumers.

D. Philani Fresh Fruits and Vegetables and Other Agribusinesses

There will be an on-going need to provide Philani and other marketing firms with some organizational assistance and assistance in dealings with other buyers and sellers.

Philani and others on the NAMBoard market are basically commodity produce dealers who seek opportunities to purchase for re-sale to other wholesale markets or retail outlets. This is different from the proposed CAPM project main thrust in that the project is seeking to develop markets that can be supplied by matching farmers' production capabilities with market opportunities.

Philani and others are not likely to develop a capability for dealing with aspects of programming production and working with small farmers on technical problems needed to ensure marketable and economical production. There is, however, a potential which exists with large farmers which could be developed so that Philani and others could serve as selling agents for crops grown by the large farmers. Also, the NAMBoard firms have established outlets on the local market. This is a highly competitive market, especially in the summer. The NAMBoard firms are, for many of the crops produced by small farmers, the easiest and sometimes the only way to penetrate some markets.

E. Summary and Conclusions

The small farmers must produce more efficiently and become a more active part of the marketing system if they are to improve their economic conditions. They must have technical assistance to improve yields, and a marketing mechanism which can obtain the optimum returns for those yields.

The potential for increased yields by small farmers has been demonstrated by the CAPM project. Experience in marketing has created various opportunities for market penetration. Direct intervention and perceived opportunities by input and service industries has created a base to support this growing production and marketing sector and create new opportunities in the agro-industrial sector.

CAPM should continue to support Philani and other firms in those activities which they do best, trading of commodities, by developing new opportunities. This will benefit Philani and the agricultural sector in general.

The concept of this project is to link together all the components of the production and marketing system to ensure the development of small farmers into active participants in the agribusiness sector.

APPENDIX TO TECHNICAL ANALYSIS
Market Prices for Selected Crops in Reef Markets

In 1991-1992, the total volume of fresh produce sold in the fifteen fresh produce markets of South Africa was 2.35 million metric tons. Of this total, 42 percent was turned over in the Reef markets of Johannesburg and Pretoria. The Capetown and Durban markets turned over 16.5 percent and 9.5 percent, respectively, of the national total.

The proximity of the Reef markets makes them the obvious target for most marketing efforts. Available transportation also makes these markets most attractive. The volume of produce turned over and the sophistication of these cosmopolitan areas indicate excellent opportunities for marketing programs.

Durban, though not as large as the Reef markets and not as accessible, is an interesting market for some crops, such as "jam tomatoes," due to the ethnicity of the population.

There is some traffic between Capetown and Swaziland, especially in deciduous fruits, and this traffic, though irregular, may be used to create some new markets. A cautionary note on this would be that dealing with Capetown would probably require holding produce and then shipping the longer distance. This would require cooling and/or cold storage facilities.

In the Reef markets, and presumably in other major markets, all produce transactions are entered into a computer system connected to a cashier's office. This system allows for compilation of market prices and volumes traded. These data are compiled annually from July through June and are published. These are available from the respective produce markets' public relations and customer service offices.

The data for the various items are presented by package and grade where applicable. Prices are reported as the average and the high for each quality level and package type. Turnover in the different units is also listed. The data provide a good overview of prices and seasonality but further consultation would be required to determine more precisely the prices that could be used for feasibility studies or other analyses. This could probably be arranged with the statisticians in each market.

On the following pages are some examples of prices for selected crops mentioned in the Technical Analysis.

In the 1991 PPA, prices for selected crops are presented for the Durban market for the years 1985 through 1987. Those prices were not included here due to the different years.

Seasonality of prices can easily be seen in these data. It may, for example, be better to grow green peppers for the markets of March, April, May and June when yields would probably be higher than in June, July, August and September during the coolest weather. Such analyses are critical to the success of the project.

**GRADE #1 TOMATOES
RANDS/KILOGRAM**

Price Level, Market & Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Average - Jo'burg '90-'91	1.26	1.14	1.37	1.28	1.15	1.00	.97	1.07	.94	1.26	1.20	1.06
Average - Jo'burg '91-'92	.90	1.09	1.39	1.51	.96	.88	.73	.97	1.37	1.15	.95	.88
Average - Pretoria '91-'92	.89	1.08	1.51	1.54	.89	.88	.70	.97	1.41	1.10	.91	.87
High - Jo'burg '90-'91	3.12	2.34	3.12	2.34	2.03	2.03	2.25	2.19	2.34	2.50	3.12	3.12
High - Jo'burg '91-'92	1.88	2.34	3.13	2.81	1.87	2.50	1.87	2.81	2.66	2.19	1.88	2.34
High - Pretoria '91-'92	2.03	2.66	2.81	3.13	1.88	1.56	1.25	2.19	2.34	2.34	2.83	2.03

**GREEN PEPPERS
RANDS/KILOGRAM**

Price Level, Market & Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Average - Jo'burg '90-'91	.88	.79	1.18	1.24	1.24	1.24	3.11	2.77	2.23	1.90	2.18	1.13
Average - Jo'burg '91-'92	1.82	1.81	3.04	1.91	1.98	2.01	1.67	1.72	1.52	2.26	1.83	1.41
Average - Pretoria '91-'92	1.16	1.54	2.95	2.00	1.95	2.12	1.59	1.95	1.53	2.38	1.62	1.24
High - Jo'burg '90-'91	2.66	2.66	3.33	3.33	3.11	2.67	6.77	6.22	3.33	3.55	4.44	2.67
High - Jo'burg '91-'92	3.55	3.55	6.67	4.00	3.33	4.44	3.33	3.55	2.67	5.33	3.55	2.67
High - Pretoria '91-'92	4.44	4.00	8.89	4.44	3.33	4.00	2.89	17.78	11.11	5.56	4.44	3.33

SWEET CORN (Punnet Pack)
RANDS/KILOGRAM

Price Level, Market & Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Average-Jo'burg '90-'91	1.79	1.96	2.67	2.73	2.40	3.77	4.60	10.72	8.67	5.29	4.95	3.09
Average-Jo'burg '91-'92	2.81	3.15	2.22	2.26	2.80	2.36	4.94	5.35	4.16	2.95	3.06	2.77
Average-Pretoria '91-'92	2.20	2.99	3.08	2.56	3.39	3.06	1.80	6.09	6.78	3.75	3.04	3.11
High -Jo'burg '90-'91	4.89	4.44	4.89	4.89	4.44	6.22	10.0	13.33	13.33	13.33	10.0	8.00
High -Jo'burg '91-'92	7.11	8.44	5.60	4.89	10.67	8.89	12.0	10.66	6.66	5.55	5.78	6.67
High -Pretoria '91-'92	13.33	6.67	16.0	6.67	4.89	8.89	6.58	12.00	13.33	13.33	10.0	16.0

GREEN BEANS
RANDS/KILOGRAM

Price Level, Market & Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Average - Jo'burg '90-'91	1.03	1.07	1.14	.96	.67	.78	1.50	1.08	.36	1.06	.95	1.35
Average - Jo'burg '91-'92	.96	1.95	1.87	.90	.71	1.26	.97	1.43	1.01	.98	1.06	1.14
Average - Pretoria '91-'92	.91	1.82	1.67	.82	.76	1.30	.95	1.55	1.06	.97	.94	1.07
High - Jo'burg '90-'91	2.08	2.34	2.60	2.33	2.08	1.95	2.60	2.34	.78	2.59	1.95	3.25
High - Jo'burg '91-'92	1.82	3.90	2.60	1.69	1.30	2.34	2.08	2.86	1.95	1.95	2.34	2.60
High - Pretoria '91-'92	2.60	3.25	3.25	3.90	2.60	6.50	2.34	2.60	2.60	5.20	5.19	6.50

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**MUSKMELONS
RANDS/KILOGRAM**

Price Level, Market & Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Average - Jo'burg '90-'91	.51	.72	.99	.79	.68	.69	.60	.80	1.01	.80	.62	.75
Average - Jo'burg '91-'92	.61	.79	.80	.67	.66	.66	.52	.70	1.76	.83	.60	.62
Average - Pretoria '91-'92	.81	.81	.76	.79	.76	.67	1.01	N/A	1.27	1.21	.85	.91
High - Jo'burg '90-'91	1.04	1.44	1.76	1.44	1.28	1.12	.72	1.44	1.44	1.52	1.12	1.52
High - Jo'burg '91-'92	1.20	1.44	1.76	1.28	1.44	1.44	1.12	1.28	1.24	1.44	2.40	1.76
High - Pretoria '91-'92	1.44	1.76	1.60	1.12	2.00	1.04	1.28	N/A	1.44	2.08	2.08	2.40

**SWEET MELONS
RANDS/KILOGRAM**

Price Level, Market & Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Average - Jo'burg '90-'91	.76	.74	.97	.66	.74	.48	.55	.72	1.04	.58	.58	.63
Average - Jo'burg '91-'92	1.18	.79	.99	.71	.73	.64	.60	.59	1.01	.64	.40	.71
Average - Pretoria '91-'92	.88	.49	.49	.73	.93	.60	.44	.53	1.44	.99	.65	1.18
High - Jo'burg '90-'91	1.44	1.36	1.76	1.36	1.28	.96	.56	1.36	1.60	1.76	1.20	1.12
High - Jo'burg '91-'92	1.60	1.44	1.60	1.12	1.60	1.28	1.12	1.28	2.40	1.60	.96	1.92
High - Pretoria '91-'92	1.28	.96	1.12	1.12	1.12	.96	.96	.80	1.44	1.44	.72	1.20

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UPDATED ADMINISTRATIVE AND ORGANIZATIONAL ANALYSIS

I. PROPOSED ORGANIZATIONAL STRUCTURE

A. Background

Swaziland sits on the doorstep of one of the largest and most sophisticated markets in Africa. It is favored as few other nations in the world in that it can supply virtually any horticultural produce to this market at a time when demand is high enough to return profits to small farmers that many of their counterparts in other countries could never realize.

Through the efforts of CAPM, MOAC extension and other services, and other projects it has been demonstrated that small farmers can, with technical assistance, produce fresh horticultural items in demand in the South African markets and do so efficiently. The market has potential to increase its consumption of many fresh produce items during the winter season. There is also potential for the introduction of new or "unique" products through a program of market development.

However, the structure of the production-marketing system is as yet incomplete and, without changes, the potential cannot be exploited. The role of the CAPM project is two-fold; first, to improve the present market activities of the Swazi firms at NAMBoard, so they can effectively compete and, secondly, to develop a structure to enable the potential of the export market to be realized.

The proposed structures are those which will allow all the resources available for production improvement and market exploitation to take place to the greatest benefit of Swaziland's small farmers. It will also assist NAMBoard traders to become more efficient so they and Swazi consumers will ultimately benefit.

B. NAMBoard Produce Firms

At present one large firm that is wholly Swazi owned exists on the NAMBoard market. In the spirit of private enterprise and for the benefit of consumers it must have competition. Its competition is severe. Large, well organized firms compete with it and threaten its existence. The firm must become more efficient in its operations and seek new ways to exploit the agricultural potential of Swaziland and South Africa and strengthen its trading activities.

The firms on the NAMBoard market are basically commodity traders. That is, they purchase potatoes, cabbage, onions and other "staple" or commodity items in large quantities for resale to various outlets. An example of the size of the "commodity" market can be seen in the Johannesburg market where one of three buildings of the same dimensions -- one third of the total produce marketing space -- is designated "Potatoes and Onions."

These commodities are low profit margin items which need to be traded efficiently in large volumes for economical operation. Other items are also traded vis-a-vis Swaziland, most from the South African markets to Swaziland, others from Swaziland to South Africa.

The structure of the firms and their lack of ability to work closely with small farmers to provide technical assistance poses a serious constraint to small farmer development. The firms would like to sell the produce of small farmers but the investment to obtain the produce is very high in terms of cost and organizational adjustments.

A firm, like a person, should be developed to do what it can do best and what is ultimately beneficial to the national agricultural economy. The NAMBoard firms need to become more efficient and competitive in trading produce.

Efficiency in produce trading involves reduction of costs, not only in the operations of managing a firm's activities, but also in obtaining the best products at the lowest cost and selling it to an established clientele that knows it can rely on the firm for its needs.

This entails establishment of business relationships at both the purchasing points and at the sales points. A trader provides a service to his clients. A trader must also have a relationship with sources of product that will ensure being able to obtain the products that clients need.

Currently, nearly all the items moved by the Swazi firm are purchased at the Reef markets in South Africa. This product is grown in South Africa and delivered to the Reef markets where it is sold, at a mark-up, to wholesalers. Some of the wholesalers sell to Swaziland, again at a mark-up. Others sell to Swazi firms at a mark-up. It is extremely difficult for any firm to consistently make a profit buying for re-sale when essentially buying from its competition. With proper organization, this situation can be alleviated.

There are few deterrents to buying directly from the producer of a product. The producer needs an outlet and the Reef markets are a natural outlet. The market is competitive and producers normally receive a fair price, but buyers ordinarily receive a better return on their investment than do the producers. This is universal and is generally accepted as the way the system functions. However, it is not uncommon for a trader to go directly to producers, by-passing the market, and making a deal with them. The producers deliver directly to the trader, or the trader picks up at the farm. This requires more skill on the part of the trader, but can be more profitable.

This ability can be developed so sourcing can be done less costly and put the firm on a more level playing field with its competition.

Another consideration is that of production and sales of the produce of large Swazi farmers. Do they produce for sale to South Africa? If so, why does the firm go to South Africa to purchase what is locally produced? This may or may not be the case, but it needs to be studied.

CAPM and the Swazi firm have expended great effort to make the firm functional and keep it growing. These efforts need to be focused on improving that activity -- trading -- that the firm has shown it can do best. As it becomes more efficient it should develop the potential for being a primary outlet for the sale of small farmers' horticultural production.

As CAPM seeks to strengthen the trading ability of the Swazi firm on the NAMBoard market, it must also find ways to develop the potential of other Swazi firms engaged in similar or related activities by helping them lower costs, operate more efficiently and negotiate better prices.

The development of the ability of the Swazi firm to be competitive with other firms will require innovation, initiative and teamwork. CAPM will provide this with the goal of making this segment of the Swazi produce industry more profitable and lasting.

C. Farmers' Organizations

The organizational structure of the CAPM project as it is envisaged for the life-of-project appears in Annex OA-1. The implementation team is under the heading of "Executive." At the end of project, this will be removed and the entities remaining will function much the same as they will under the project. One of these is the farmers' organizations.

The CAPM project has targeted three regions in which farmers' organizations can be developed around existing production for the purpose of marketing that and other production. All organizations will be formed as private enterprises and each will have the same basic organizational structure.

The rationale for forming the farmers' organization is to provide a means of accumulating small farmers' produce in sufficient quantities of specified quality to facilitate its marketing. Other projects have attempted to organize farmers' businesses and most have had limited success.

This project does not expect to form small farmer businesses, at least in the short run, that will have the expertise and ability to market produce without assistance. Rather, the organization must be able, with assistance, to produce and prepare a crop or crops for market and then rely upon a firm established for the purpose of marketing to handle their marketing and marketing management.

The farmers' organizations will be developed to the point where they understand the principles of dealing with the market and the options available to them for marketing. At some time in the future, the organization may become its own marketing agent, but this is not contemplated during the life of the project.

Three farmers' organizations are considered for two reasons: one, they exist as identifiable production groups with CAPM experience and two, organizing three groups at the outset of the project is the most with which the available technical assistance can effectively work. The reasoning is that the three organizations must be strong and functional organizations at the end of the project.

The farmers' organizations should all be organized and functioning by the winter of 1995. The winter of 1996 is assumed to be the last season of CAPM assistance. The summer season of 1996 will be the first season for one or two of the organizations to function with minimal interference from the CAPM team. At this time, another one or two potential organizations may be considered for development. It is emphasized, however, that the priority is the successful development of the three designated organizations.

The farmers' organization will be made up of a core group of farmers who are members of a scheme or who are of a geographic region. The farmers will comprise the general assembly of the organization and will elect their board of directors who will manage the company with the assistance of a minimal management staff, some of whom will be salaried.

The Board of Directors and the management will, by contract with the marketing firm, develop with the firm the production program for the season. The firm will assist the organization in production programming, logistics of handling inputs and harvesting crops as well as with general management and accounting techniques. This will enable the organization to participate in marketing without the high cost and inherent difficulties of having their own management structure.

Technical advise on production will be available to the organization and the individual farmers by the firm. The organization will be responsible for organizing meetings of the

general assembly when the technical advice to be given is applicable to all farmers.

Under the same contract or by a different agreement, the firm may provide production and postharvest inputs to the organization for distribution for convenience and/or cost savings. Examples of inputs would be seeds or seedlings, fertilizers, chemicals, and packing materials.

Each organization will have a physical location, most likely a packing shed or collection center where an office will be located and where a telephone is available. If a facility does not exist, the CAPM project must assist the farmers' organization in obtaining one.

Currently, approximately US\$30,000 is available that could be allocated to provide adequate facilities and telephones for the organizations which do not have them. This will not only provide a needed structure, but will also be that focal point around which farmers will be drawn together.

The postharvest handling of the produce will be the responsibility of the farmers' organization. Some assistance may be given, under contract, by the firm, but the hiring of management for the packing operation and transport for collecting produce from the field is the organization's responsibility.

The farmers' organization must be a legal private enterprise able to enter into contractual relations and be eligible for credit from financial institutions.

Although some farmers' organizations will be organized around the farmers of a particular scheme, they may admit non-scheme farmers or market their produce through the organization should they not be members. It will be to the organizations' advantage to increase the volume of production beyond what is available for marketing from its membership alone.

How an organization supports itself will need to be determined for each organization. Management costs should be minimal. It is envisioned that an organization may have a secretary/treasurer who is paid and a manager who will receive a minimal stipend since the responsibilities of the manager will be few. The board of directors will probably make most management decisions and the secretary/treasurer will handle the daily tasks of the organization.

An assessment on each box of produce marketed may be the most acceptable means of raising necessary funds for management and may be supplemented by membership fees. The strategy for making the necessary funds available will be determined by the project

in collaboration with the farmers' organization. Packing operations are normally paid for by a per box assessment but this too must be determined for each organization.

Both the farmers and the institutions which deal with farmers can benefit from the farmers' organization as their representation. It will be important that the project assist the organizations in developing skills in interacting with other organizations and institutions so the agricultural sector and the farmer members will benefit.

D. Marketing Firm

The CAPM project has two basic objectives, to assist small farmers in increasing production and to ensure that a mechanism is in place that can efficiently market that produce. The creation and development of a marketing firm dedicated to and dependent upon marketing is seen as the most practical means of achieving these objectives.

The movement and sale of produce through the Swaziland markets is mainly by hawkers who purchase at the farm-gate, the Johannesburg market, the Swaziland fruit and vegetable market concessionaires, other wholesalers and other hawkers. Larger companies sell to supermarkets and other markets. The participants in the marketing system can best be described as traders, not marketers.

The export of fresh produce to the South African markets is minimal. The CAPM project has organized some export sales, notably those of Philani Fruits and Vegetables, a CAPM firm, and those of the Indian traders who come from Durban for tomatoes.

The best marketing opportunities for the small farmers are products for the fresh produce market in the winter in South Africa. As is demonstrated in the technical analysis, the potential for the current target crops and other crops is high especially when the possibilities for diversification are considered. What is lacking is a marketing firm to develop and take advantage of this marketing potential.

Local markets are supplied, in large part during the summer season, by produce from South Africa which, due to more efficient production is less costly than local produce. The challenge to the farmers, marketing firm and the CAPM project is to determine which crops can be efficiently grown and marketed so as to displace some of the imported produce.

There may also be some potential in the South African market in the summer and fall. This may require efficient production and excellent quality but may also be accomplished by the

introduction of new crops such as specialty melons to the market.

Any or all of these options are possibilities which must be pursued by the development of a strong marketing firm and a sound marketing plan.

The marketing firm will be created as an independent private enterprise functioning outside of the project, but directed in its development by CAPM and SBGT.

CAPM will be responsible for the developmental aspects of the firm as they relate to production, marketing and farmer/firm relations. The production and marketing specialists will work with the firm's managers to ensure that summer and winter production and marketing programs are carried out. The Agribusiness/Organizational Development Advisor will assist the firm in their business relationships with the farmers' organizations.

It is envisioned that the firm will be capitalized at the start of the revised project with funding from USAID through a grant to SBGT. This is to be funding that would be used to pay salaries and overhead if the firm or the local TA were to be under the project as it is structured as of June 1993.

The capitalization of the firm will be managed by SBGT who will also assist the firm in its organization as a legal entity. The activities of SBGT will also include assistance and advice on development of a financial plan and business activities.

The management of the firm will consist of the Board of Directors and a general and assistant manager. There will be a minimal support staff, a secretary and an administrative assistant/accountant. The field assistance staff will likely be four technicians.

The Board of Directors, during the life of the project, will be comprised of the two principals (the managers), possibly one member of the CAPM team, and two or more representatives from the GOS/MOAC and the private sector. The make-up of the Board of Directors will be determined by the project with legal assistance to ensure conformity with all existing laws and regulations. It is important that the project does retain an ability to overrule decisions which the board of directors may make that are detrimental to project goals or administrative policy.

There is expected to be two owner/managers of the firm, a marketing manager and a production manager. One will also be the general manager. The marketing manager will counterpart with the LTTA for marketing and the production manager with the LTTA for production. The third member of the CAPM team, the

Agribusiness/Organizational Specialist, will work with all team advisors and firm managers on those activities related to the firm and the interactions with the farmers' organizations, the markets, and other agribusinesses.

While the responsibilities of the two managers and their counterparts is obvious, there is expected to be a large amount of coordinated activity which will involve all team members in all activities to one extent or another. The close cooperation of all project staff will be critical to the success of the project.

The other members of the firm, the field assistants, will provide the regular on-going contact with the farmers to assist them in those activities required to produce efficiently. One field assistant will be designated as the quality assurance person with responsibility for the overall program of quality. The other field assistants will assist the production manager in various activities.

An important feature of the project structure is that it creates and assures a sustainable linkage between the farmers and the market. It also provides the technical assistance necessary to enable the small farmers to grow as commercial farmers. Although this linkage will be strong, there will be liaison with the other organizations in the environment when this will be of benefit.

The marketing firm will be developed as a mechanism that will relieve the farmers' organizations of the burden of having their own marketing management capability. The development of a farmers' organization as a marketing entity requires several years, at best, to be successful. Most efforts have failed in attempts to make farmers' organizations efficient marketers. In addition to years of effort, the cost of management and the availability of good managers severely limit the potential marketing success.

The marketing firm will provide competent management and, since it will work with several organizations will spread its operating costs over a broader base of product.

This marketing firm will be developed during the life of the CAPM project to fill a void in the marketing system. At the end of the project it will be evaluated for its potential to exist on its own and continue to provide a service to the farmers and a profit to itself. In the meantime, during the life of the project, it must be developed as a private enterprise.

E. CAPM Team

It is proposed that the CAPM team be constituted to provide solid capability in the fields of agribusiness and small farmer organizational development. The small farmer irrigated production assistance needs to be continued with crop diversification of much importance. In marketing, a strong program needs to be developed which includes market development for a more diverse line of crops, a presence in the summer season and a quality control program to support marketing efforts.

The two Swazi technical advisors presently on the team may be developed as the firm's managers. The number of field assistants will be three assigned to CAPM and two assigned to the Marketing Firm. Those assigned to the project will carry out project field and marketing activities as assistants to the long-term TA. The two field assistants in the Marketing Firm will serve as assistants to the managers and be responsible to them. The two field assistants in the Firm will be paid by the Firm during the life of the project. These two and probably one or two more will be employed by the Marketing Firm when the project terminates.

The support staff of CAPM is competent and the only change in this area would be to develop one member into an administrative assistant to allow the Chief of Party more time in the field.

The proposed organization of the CAPM team is shown in Annex OA-1. There is expected to be a counterpart provided to the Chief of Party.

1. Chief of Party and Swazi Project Coordinator

It is proposed that the Chief of Party be either the Agribusiness Advisor or the Market Development Advisor to allow for an opportunity to provide the best possible talent to the team. It is assumed that the position of Project Coordinator will be continued as it has served a valuable function in the project to date.

2. Agribusiness/Organizational Development Specialist

Two types of private enterprises will be developed under the project, the marketing firm and the small farmers' organization. Additionally, assistance will need to be given to existing marketing firms. The produce of small farmers cannot successfully be marketed without some form of organization to collect and prepare it for market. The marketing firm is the vehicle to move the product and assist in the production and preparation of the product. Both the firm and the farmers' organizations must be able to function will if both enterprises are to be successful. The advisor must have the skill to form

organizations of which the farmer is an active, knowledgeable participant and a firm able to meet the needs of both the market and the farmers while making profits from the activities associated with meeting these needs.

3. Market Development Specialist

This specialist will be responsible for the marketing program of the project, ensuring that all the activities required from harvest to the market are as free from constraints as possible. The position requires a marketing specialist with experience in determining the feasibility of crops for alternative production, markets and seasons. The challenge in Swaziland is to diversify production and also enable farmers to produce for summer markets. This specialist should have first-hand knowledge and experience in all aspects of marketing, quality control, and postharvest as well as working with the market to create new opportunities. The advisor must also have the ability to work closely with the production advisor on crop feasibility studies. He must also be able to impart his skills to his counterpart and team staff. This specialist will work closely with the Swazi agribusiness advisor assigned to SBGT to ensure his/her development as an agribusiness professional.

4. Horticultural Production Specialist

A body of knowledge has been accumulated on production of several crops and continues to be refined. Field trials and experience have determined what varieties are suited to the local conditions. This work needs to be continued. The creation of production skills in small farmers must be continued, higher yields per hectare are a primary objective of the project. Also, new crops must be identified which allow for diversified production and penetration of summer markets. New crops grown for market and crops grown for production other than for the winter market will require coordination with the market development specialist. Once crops have been targeted, a body of knowledge about them must be developed and passed on to the small farmers for their production.

5. Swazi Advisors and Field Assistants

The structure of the project will change considerably from that in the 1991 PPA although the number of Swazi advisors and field assistants will remain the same. The Swazi production and marketing advisors may become the managers of the marketing firm. In these roles, they will work with the CAPM and SBGT specialists.

The field assistants will be assigned to CAPM and the marketing firm. The field assistants (3) assigned to CAPM will work with

the long-term TA and the Marketing Firm as production and marketing assistants. The two field assistants who will be employed by the Firm will be assistants to the managers and concentrate on the activities of the Marketing Firm as opposed to project data collection, etc.

6. Marketing Advisor

A marketing advisor has been with the CAPM team since the 1991 project re-direction. This person will be a key player in the continued development of export markets and the establishment of Swazi production in the summer markets. The skills associated with marketing as opposed to selling or trading are as developed as the marketing of product to regional markets, that is, at a very rudimentary stage. Only through guidance and experience will this marketing person be able to carry on this market development after the project ends. This person may become the marketing manager of the Marketing Firm.

7. Production Advisor

Swazi export marketing will only be as successful as the production developed to support it. The CAPM project has demonstrated that production for export is possible and that efficiently produced crops are achievable. Better yields and more efficient production is required to make the small farmer self sufficient through his production. This and the need to introduce new crops for diversification and the summer season require a more intensive approach to production. This more intensive approach will focus on obtaining the best returns per hectare possible from horticultural production. As with the marketing manager, this manager may become part of the Firm management team and in addition to being trained to take over production responsibilities, must also be trained to be a co-manager of the Marketing Firm.

8. Government of Swaziland (GOS)

The various GOS ministries will continue to be integrally involved in providing support to the project. Activities conducted through the MOAC extension program and the NAMBoard marketing operations will continue to be incorporated into the ongoing operations in support of the project.

The Project Steering Committee, which is composed of the Principal Secretaries of MOAC, MOF, DEPD, MCIT, MOE, the USAID Mission Director or her designated representative, and the Chief of Party of the technical assistance contractor, will continue to provide overall scope and direction to the project and the Working Group which is composed of private and public sector leaders will continue to provide practical advice and direction

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to the project.

While the farmers' organizations are considered to be primarily beneficial for organizing production for market, they have the potential for improving the efficiency of available technical services. An organization of farmers engaged in similar production is a much easier vehicle for extension of technical services by the government than scattered individual farmers. These farmers, whose numbers will continue to grow will have specific needs common to most of them. Delivery of resources to an organized group of farmers who are producing for the same end will normally yield a greater return than these same resources dispersed to many farmers.

The development of the marketing firm and the farmers' organizations is expected to provide increased opportunities for the extension service to provide their expertise and improve their professional development.

9. Horticultural Campaign Committee (HCC)

The Horticultural Campaign Committee of MOAC is expected to continue to be a key participant in the horticultural development in Swaziland. The objectives of this project agree with those of the HCC. The CAPM project and the HCC are expected to work closely together for their mutual benefit.

II. ADMINISTRATIVE AND ORGANIZATIONAL ANALYSIS

A. Background

The concept that the Commercial Agricultural Production and Marketing (CAPM) Project should focus on the development of private-sector involvement in the marketing of horticultural produce from the small-scale irrigator/farmer in Swaziland is analyzed from three standpoints: technical, in Annex B, social soundness in Annex D and financial in Annex F.

B. Organization

1. Policy and Direction

Annex OA-1 shows the relationship between the various project entities. At the top of the chart is the overall controlling component of the project which is expected to consist of two hierarchical committees which will determine the policy and direction of the project. The present overall controlling committee will continue to exist as the Project Steering Committee.

The Project Working Committee constituted with nominee(s) from appropriate Government of Swaziland (GOS) ministries, the United States Agency for International Development (USAID), the prime contractor, the private sector, project farmers, the project marketing firm, and the Swazi firms that participate on the NAMBoard market. This working committee will oversee the project and provide practical advice and direction.

2. Executive

Those involved in the implementation of the project are represented in the Section of Annex OA-1 labeled "Executive." Four sets of players are seen to be involved in this process. First are the small scale farmers who, through their organizations, are the principal focus of the project; second are the firms which trade through their participation at NAMBoard; third, the proposed marketing firm that will be assisted in its development as a mechanism for marketing management of the farmers' organizations; and lastly, the CAPM team which through targeted efforts, expertise, and specific inputs are expected to facilitate the achievement of project objectives.

The Small Business Growth Trust (SBGT) will work with the marketing firm managing the funding provided for capitalization, financial and auditorial assistance, and development of business plans and activities in collaboration with the CAPM team.

An agribusiness advisor will be assigned to SBGT under a USAID grant to collaborate with the CAPM project. This will be a business/financial person who will advise on financial and business plans for the firm and, on a fee basis, to other project firms. The agribusiness advisor will be strengthened in agricultural expertise by involvement with all members of the CAPM team. This is to be done in order to leave a well-rounded agribusiness advisor in place in SBGT at the end of the CAPM project.

Functional and working relationships among all the 'players' shown in this chart are detailed and discussed later in this section.

C. Project Interactions

There are various parties which will interact in the environment of the project. How these interactions will take place, especially between the small-farmers, the marketing firm, and other Swazi NAMBoard firms, is described below and graphically presented in Annex OA-1 and OA-2

1. NAMBoard Firms

As described in Section I of this annex, the Swazi trading firms on the NAMBoard market will receive technical assistance from the CAPM team on organizational, financial, procurement, and sales activities.

There will be a buyer-seller relationship between a farmers' organization and the trading firms for some produce items, especially in the summer when production will be mainly to displace product normally brought in from South African markets. This is based on the rationale that, if a farmer can produce nearly as efficiently in Swaziland as a farmer in South Africa, the transportation costs and import fees alone should make the locally produced items attractive to local traders. Since local traders have established outlets in Swaziland the farmers' organizations, through the marketing firm, can take advantage of this.

2. Farmers' Organizations

The current CAPM project has targeted three regions in Swaziland for production of crops for the winter export market. These regions are generally defined as:

- o North (NRDA)
- o Central (Embekelweni)
- o Southeast (Siphofaneni)

It is in each of these regions that a farmers' organization will be organized under the project. This organization will coordinate the production and postharvest activities of its members with the contractual assistance of the marketing firm.

The farmers' organizations will be organized as depicted in the chart of Annex OA-2 and will have some form of infrastructure with which they are identified (packing shed, collection center, etc.). The farmers' organizations will be developed from existing "associations" of farmers in the region that form a base large enough to logically be formed into an organization. A number of farmers in these regions may not choose or may not be able to join the local farmers' association. This will not prohibit them from using the farmers' organization as a marketing channel and, in fact, they will be encouraged to do so.

It is considered that the order in which farmers' organizations will be developed in the three regions is the North first, then the Southeast and lastly the Central. This is based on level of interest and activity as of June 1993 and could be modified. The three organizations should be functioning by the winter season of 1995.

A fourth region which has not been part of the project focus since the drought of 1992 is Vuvulani. The potential for forming a farmers' organization is said to be high. This should definitely be considered as a project target area.

3. The Marketing Firm

The Marketing Firm will be established as a private enterprise soon after the outset of the extension of the project. It will be capitalized with funding channeled through SBGT. The functioning of the firm will be autonomous, but the CAPM project and SBGT will guide the Firm in its activities, both developmental and financial and retain sufficient control over the firm to ensure completion of project objectives.

The Marketing Firm will have two functions: first to be a marketing agent for the producer-members of the farmers' organizations and, second, to provide technical assistance to assure the sustainability of sufficient volumes of quality produce to ensure the viability of the Firm and increased revenues to farmers and the Firm.

These activities will be carried out by a contractual agreement between the farmers' organization on behalf of the members and the Marketing Firm. The basic terms of agreement for a typical contract are found in Annex OA-3.

The Firm will be governed by a Board of Directors during the life of the project. The board will be comprised of the two principals in the Firm plus at least three others chosen from the SBGT and CAPM LTTA (expatriate) and others to be determined. The project advisors will guide the managers of the Firm in their decision-making and organizational activities to assure that they are capable of managing the Firm's activities at the end-of-project.

During the life of the project, markets for existing production need to be established and/or stabilized and alternative markets need to be developed. Simultaneously, markets for summer crops that have production potential need to be identified and analyzed and new crops for winter or fall production need to be found to allow for diversification of production.

Successful marketing requires a reliable production base. For the Firm and the farmers to grow and sustain the growth of this sector, there needs to be a continual presence of the Firm in production activities. Whether introducing new crops, bringing in new farmers, or improving yields of established crops, the availability of technical assistance will be necessary. The level and type of assistance may vary from one group of farmers to another but will always be necessary in some form.

By the end of the project, the need for intensive technical assistance to the farmers would have been satisfied and the Marketing Firm staff able to function with the personnel described in Annex OA-1 and the supporting text.

Other regions of the country have potential for similar development and additional staff may be needed to enable the Marketing Firm to serve these eventual organizations. It is assumed that any additional technical personnel would only be hired if the benefits derived from the new activity would cover the costs involved.

The Marketing Firm is to undertake a more intensive role in the activities of the farmers' organizations and the farmers than is normally expected of a firm. The role of the Marketing Firm will continue after the end of the project as it is not expected that the farmers will have developed a marketing management capability in their organizations. This may occur in time and for that reason the Marketing Firm must continue to organize and assist other farmer groups. The reason for this level of activity is to assist the farmers and their organizations overcome those organizational and production constraints which experience has shown to hinder or prevent the development of a small farmer production/marketing company into a viable private enterprise.

The Marketing Firm may seek other related opportunities to generate income. During the life of the project this will be encouraged so long as it does not detract from their primary objective of developing a small farmer production base.

At the end of the project rational business decisions will determine if the Firm will continue to exist and in what form.

4. Traditional Leadership

The success of the small-farmer organizations, and ultimately the project, will depend upon the goodwill and perhaps the participation, of the traditional leadership in the target regions. The crucial role that chiefs are likely to play has been recognized and described in Annex D, Social Soundness Analysis.

5. Input and Credit Suppliers

The supply of inputs to the farmers may take various forms. Two likely possibilities which need to be pursued are provision of inputs on credit by farm supply firms and/or through a credit program which might be developed by the marketing firm to be repaid by retention from returns from sales. It is envisioned that the marketing firm and the farmers would benefit financially if the firm were to purchase in volume and deliver inputs to the

farmers or their organizations.

6. Swaziland Business Growth Trust

The Swaziland Business Growth Trust is a trust formed under USAID with the role of assisting Swazi entrepreneurs form and develop their enterprises. SBTG will collaborate with the CAPM project by taking a lead role in the financial and administrative development of the marketing firm. For instance, SBTG will help the firm with a business plan, financial plan, assessment of payout, and audits.

7. MOAC Extension Agencies

The project is not expected to displace any of the existing extension activities underway in the small-scale farming sector. The project will continue to benefit from inputs from the government and other extension organizations, and will work especially closely with MOAC horticulturists.

8. Hawkers

In the past the hawkers have provided a valuable, although unreliable, market outlet for the small-scale farmers. The project does not expect to replace them, nor is the project expected to be threatened by them. The hawkers may play a role in the project by purchasing produce from the firm instead of sourcing it on the South African market.

9. National Agricultural Marketing Board (NAMBoard)

The Swaziland Fresh Produce Market operated by NAMBoard is a major influence in the horticultural environment in Swaziland. It is anticipated that CAPM, NAMBoard, and the marketing firm will complement each other's activities. NAMBoard could well become an outlet for the marketing firm, to the benefit of all parties.

10. Government

MOAC is the lead Ministry for CAPM. There will be need for a continuation of the liaison with government officials at all levels throughout the life of the project. Participants will need to keep in regular contact with those officials who will influence their particular responsibility.

The project team should encourage the participation of the extension service and research organization to participate in activities related to crop and farmer organizational development. When the project ends it will be critical that everyone in the agricultural sector is prepared to carry on the developmental

activities of the project. One way to encourage this is to have MOAC personnel involved as much as possible in supporting the project's activities.

III. SUGGESTED PLAN OF ACTION

The amended project will begin March 1, 1994 with a number of activities which will be on-going and some which will be necessary to initiate. Production for the winter season will have been programmed and some plantings will possibly be in the ground. Most of the plantings will occur shortly after the commencement of the extension.

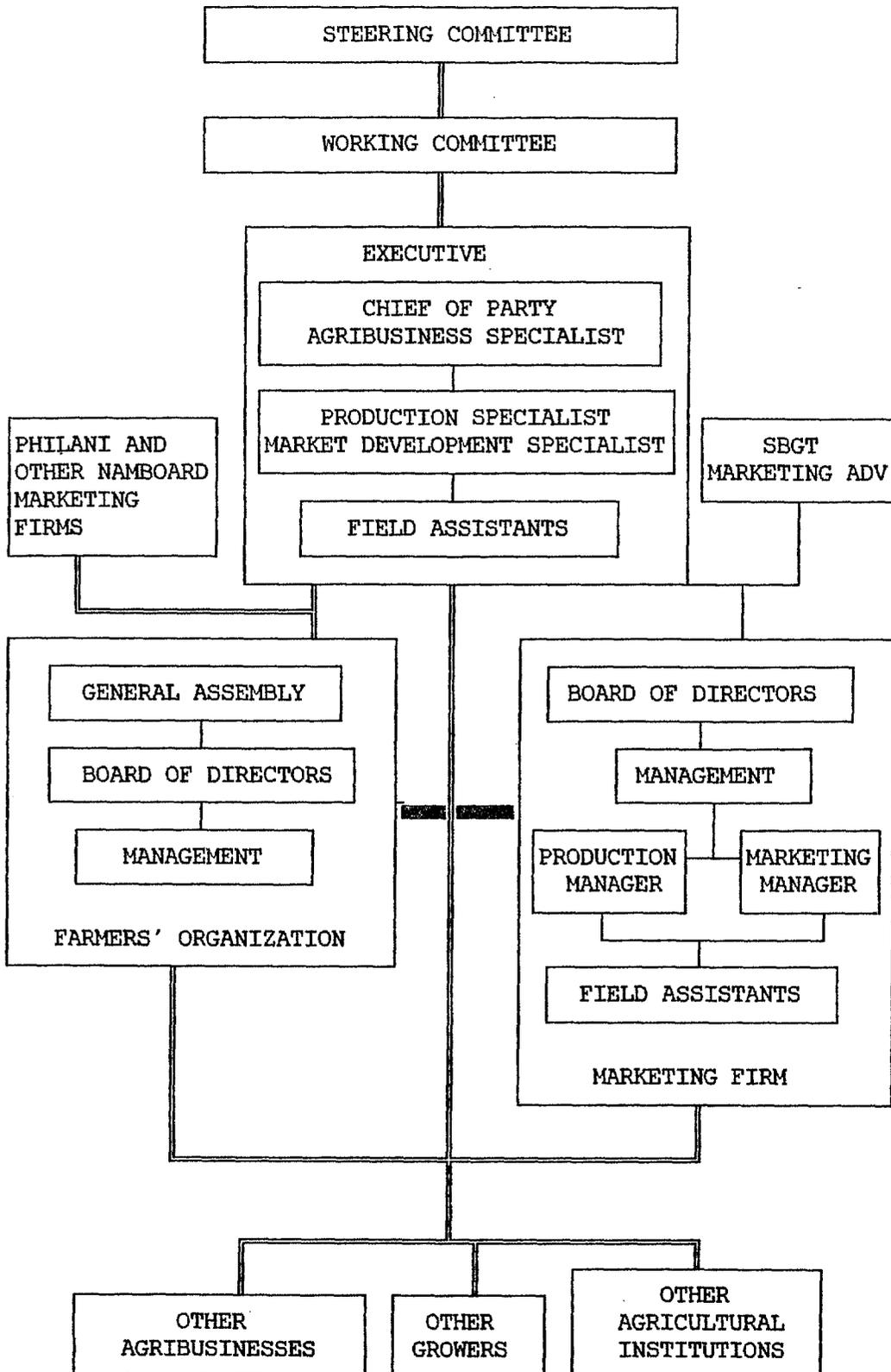
Farmers organizations will need to be organized and the Northern RDA will likely be the first to be organized. This organizing activity also requires the development and training of the personnel of the farmers' organization in operation of the tomato packing shed.

The work with the NAMBoard firms will be an on-going activity and the commencement time of the project may be the appropriate time to begin assisting the firms in locating producers of crops for trading activities and entering into negotiations for forward contracting the production.

The Marketing Firm will be developed as a private enterprise and the establishment of the firm should occur at the outset of the project. The Financial Analysis which demonstrates the feasibility of the firm was developed with consideration of certain returns in the first season.

The creation of the Marketing Firm will be a collaborative effort among the Swazi investors in the firm, CAPM and SGBT. Partial capitalization of the firm will be through SGBT with USAID funding. At least during the life of the CAPM project, the firm's activities will be quite closely related to those of the project. The exact way in which the firm will interact with CAPM, SGBT, and USAID will be determined at the time the firm is being formally established.

ANNEX OA-1
 PROPOSED PROJECT ORGANIZATIONAL CHART - CAPM



_____ Direct or supervisory influence
 = = = = = Advisory or service relationship
 - - - - - Contractual agreement

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ANNEX OA-3
CONTRACT TERMS EXAMPLES

The relationship between the farmers' organization and the Marketing Firm will be contractual. The basic services supplied by the firm will be organizational advice, production and postharvest advice and marketing of the farmers' produce. These services will be paid for by a fee which will be a percentage of the returns from gross sales. The amount of percentage will be negotiated with each farmers' organization and will depend on the nature of the services to be rendered by the firm.

N.B. Until such time as an organization is in place to represent the farmers, the firm will continue to market produce for individual farmers on an agreed per box assessment or some similar arrangement.

The contract between the farmers' organization and the firm will specify the responsibilities of each party. The following are the major responsibilities which may occur:

1. The firm will agree to advise on the following which remain farmers' responsibilities:

- o Crop varieties to be grown
- o Sourcing of planting material*
- o Production programming
- o Production methods (including irrigation)
- o Sources of inputs*
- o Harvesting (maturity and methods)
- o Transport to packing shed*
- o Packing shed management
- o Farm records

2. The firm will be responsible for the following:

- o Quality control
- o Transport to market
- o Sale of produce
- o Settlement of claims
- o Receipt of payment
- o Retention of marketing fees
- o Payment of net receipts from sales

ANNEX OA-3
CONTRACT TERMS EXAMPLES (Continued)

3. The farmers' organization through agreement with farmer members will be responsible for the following:

- o Planting of specified varieties
- o Planting of specified hectarage
- o Planting according to program schedule
- o Use of approved inputs
- o Harvesting at proper maturity
- o Transport to the packing shed*
- o Packing by organization's facility
- o Acceptance of quality control specifications
- o Sale of marketable produce through the marketing firm
- o Retention of marketing fees by firm
- o Retention by organization of assessments for services (packing, handling, etc.)

The Marketing Firm will agree to act as marketing agent for the organization. Individual farmers will be proprietors of the product until its sale. The Marketing Firm will pursue any claims of loss due to mishandling or mismanagement by a third party but will not be responsible for covering the loss.

It is expected that the firm will contract with the farmers' organization and the organization will have written agreements with the farmer-members specifying the individual's responsibilities.

*These activities may be the responsibility of the Marketing Firm under the same contract or by separate agreement.

UPDATED SOCIAL SOUNDNESS ANALYSIS

I. Introduction and Objectives of this Revised Social Soundness Analysis

This analysis concentrates on the various types of farmers on irrigated lands as the client group for the revised CAPM project. Consequently, the structure of Swazi agriculture and the MOAC are not the major focus. Rather, the current and potential participants are highlighted with reference to their farming and marketing practices, problems, and constraints. The marketing structures and facilities are also considered. Attention is paid to actual and potential aspects and difficulties of implementing the extended CAPM project. Additionally, particular consideration is given to gender issues.

The content of this SSA is based on current farmer surveys, Women in Development (WID) studies of Swaziland, CAPM and other donor-financed project documents, a rapid rural appraisal of CAPM farmers, interviews with CAPM staff and farmers themselves, and analysis of data on CAPM participants.

II. General Characteristics Of Farmers (By Type And Gender) On Irrigated Lands

Agricultural production in Swaziland is divided into farming of (a) Title Deed Land (TDL) that focuses on commercial production of cash and export crops of sugarcane, citrus, cotton and pineapple; (b) Swazi Nation Land (SNL) primarily for subsistence (maize) and cash (cotton); and (c) irrigated schemes for vegetables as well as maize and rice. The land tenure system has been extensively studied with SNL land occupying 60% of 10,000 square kilometers, while TDL covers the remaining 7,500 square kilometers (Black-Michaud and Simelene 1982; de Vletter 1979, 1987; de Vletter et al. 1983; Freund and Maphalala 1984).

Individual SNL is allocated by the chief to married men, but it is also usually inherited by the relatives of the homestead head. Women do not traditionally hold land in their own names, but sometimes act as guardians for their sons and often manage land while spouses/male relatives are engaged in off-farm employment. Chiefs also resettled people and allocated plots on many of the irrigated SNL schemes. Women may be allocated plots on irrigated schemes in their own names.

Irrigation from surface water for crop production began on TDL in the 1950s and spread to SNL in the early 1960s with most of the schemes being commissioned between 1968 and early 1980s. In 1990 there were about 42,000 ha area under irrigation with 41,000 ha on TDL and 1,100 ha on SNL (the total land area having irrigation potential is 244,000 ha). There are 24 government SNL irrigation schemes with a total of 700 ha with the average

holding size being 0.5 ha/farmer (other small schemes also exist, but have less commercial potential). Five schemes produce rice and several others produce cotton, but vegetables are the principal crops. A cyclone in 1984 damaged many of the schemes, but an IFAD project rehabilitated 12 schemes; CAPM, Phase II also assisted in upgrading some of the schemes.

There are approximately 350 TDL farms in use and an additional 650 registered, but not currently farmed (MOAC 1991). Individual SNL farms with irrigation total about 385 hectares and 877 households (USAID 1991: Annex S).

A. The CAPM Baseline Study

A baseline study undertaken in 1990 for the CAPM Project delineated the characteristics of Swazi smallholders and offered information about potential client groups (Robbins 1990). It was based on a ten week formal survey period with eight enumerators and a data processor. The study aimed to form a rural household baseline plus a commercial homestead profile and had a total sample of 154 farmers (87 women and 67 men). The author divided farmers into high and low commercial producers and defined commercial agriculture as "growing a crop or producing an animal product with the intention of selling it," while high commercial activity was defined as "the production of sugarcane, 6 or more bales of cotton, high levels of poultry or milk, or more than 200 crates of vegetables." The least commercialized farmers were women who obtained land from the chief to grow vegetables and were in associations; women farmers in production schemes were more commercialized.

The national figure for female household heads quoted was 21%, but this sample had only 14%. Women owned fewer implements, had smaller land size, less crop diversity, and lower sales compared to men. Women tended to rely on the agricultural extension agents for decisions about production, while men made decisions themselves. More men than women were in the high commercial producers category, but small numbers of female high commercial producers could be found everywhere. Households that did not have resident men were more likely to be in the low commercial category.

The findings showed that there were no cultural constraints to limiting commercial development, however, there were constraints of credit (especially for women where lack of credit and cash limited their expansion into higher commercial activity), and the need for additional parcels of land and for knowledge of markets. Sellers used all available markets, with farm gate retail sales being the most prevalent even though farmers said they preferred NAMBoard, because it took their entire marketable stock (Note: this contradicts subsequent findings discussed below). However, farmers did object to the uncertainty of their eventual sales price and delayed payments. Local and farm gate retail markets were employed by the predominately "low commercial farmer" who could set the price (although the buyer might not take all of the product). Few "high commercial producers" sold at farm gate (those who

did were women with limited transport). The high commercial producers relied on contracts, and they perceived competition from the Republic of South Africa (RSA) as being problematic.

The report noted that the crop that producers were unable to sell most often was vegetables, although the perception of a strong market existed among farmers. About 58% produced and sold vegetables, with the average quantity produced being 177 crates and the average sales being 169 crates. Farmers said the biggest constraint to production was lack of cash and inputs, followed by lack of water and poor soils. Only 2% mentioned shortage of technical assistance or labor. Few sex differences were seen in terms of the use of inputs, although women were less likely to get credit. Farmers in general at the lower end preferred to use cash.

The report stated that rural homesteads earned 60% of their total income from cash wages and less than 5% from agriculture, but in commercial homesteads agriculture was the primary source of income for 22% and the secondary source for another 27%. Farmers did not distinguish between income and profit, and even sound commercial groups and individuals lacked sound management practices. Forty percent of the high commercial homesteads had incomes of more than E5,000/year; another 38% reported sales of E1,000 to 5,000. Of the low commercial farmers, 50% had sales of less than E250/year and 94% had total crop sales of under E1,000.

High commercial producers were more typically found in the highveld and lowveld. High commercial producers tended to come from homesteads with larger holding size; all TDL farmers were in this category, but only 37% of SNL farmer were high commercial producers. These farmers hired labour, especially male labour (Note: this contradicts subsequently findings discussed below) and obtained credit. These producers had their own transport and farm machinery, and had access to a telephone; scale and management factors greatly assisted outcome. The report noted that the highly active producers had solved more of their marketing problems than the low commercial producer, mostly by obtaining marketing contracts.

B. The Project Paper Amendment's Social Soundness Analysis

Carried out in 1991 as part of the PPA, 26 individual interviews were conducted with farmers, plus 25 small-holder irrigation schemes were observed in a rapid appraisal (Boyd-Clark et al 1991; USAID 1991). The report considered data from schemes, SNL and the Vuvulane Sugar Farms. TDL farmers were not mentioned. Only data for males were given; those for females must be calculated by the reader. Calculations show that women constitute 10% to 29% of homestead heads, that irrigation plots are usually allocated to elderly males, but that women constituted an average of 51% of the farm workers, and it

was noted that they "may perform an even larger share of the actual vegetable cultivation." The PPA used 1990 estimates of 1,472 irrigated hectares farmed by 1,757 households as its base.

It was suggested that CAPM's marketing firms could immediately begin to work in 9 schemes, but three would require repair of the irrigation systems, while in 6 the marketing firm could purchase vegetables "with relatively little technical assistance." Ten schemes were defunct. There was some idea that vegetable production is traditionally a woman's occupation, but that men have taken it over as it became commercialized and now have the advantage. Also, the report noted that it was "difficult to be sure what proportion of small-scale irrigators are women, since they must utilize their husband's name in order to obtain access to Swazi Nation Land" Women did manage the plots. Two of the schemes observed were women-only, and judged to be less successful and therefore not recommended for CAPM participation.

In this study, farmers mostly sold and preferred to sell their product to hawkers and neighbors; NAMBoard was disdained because of consigned vegetables rotting. In general, farmers were not doing too well in marketing and with diseases and pests; water shortages and hail had also been problems. The marketing problems included lack of transport, lack of buyers, and low prices received.

The section of the report on social influences was quite informative in that it dealt with such issues as jealousy and factionalism, the role of the chief, and the commercial orientation of farmers. The findings were that "small-scale vegetable growers have a semi-commercial orientation"--that is, they sell, but have no real marketing strategy. Individual farmers on SNL have had to cope with pressures of doing commercial farming on land they did not own, and that up until recently, was thought to be for subsistence farming. Interactions with the chief in terms of delays in planting dates, tribute labor requirements, close contacts to avoid banishment and the like, could influence success in commercialization.

Irrigation scheme associations were seen as possibly becoming "powerful positive forces for development" and an example of the one at Mpatseni was given (the current project does not use this scheme). It was suggested that this association was a model one and that CAPM should give training for the association members in terms of rules and strategies for conflict resolution, leadership skills, accounting, etc. Also noted was that CAPM should develop a Swazi Vegetable Association Grower's Association with area and nation-wide meetings and exchanges. The section on training presented suggestions for a leadership training course for representatives from the ten schemes.

C. Other Projects and Studies of Farmers with Irrigated Lands

The irrigated schemes have been the focus of a number of donors in addition to CAPM. Farmers have had about 20 years of continuous and multiple donor-funded projects as well as government extension in several of the schemes in which CAPM is working (IFAD 1993; Fritsch 1990). Comments on many of these irrigated schemes are given in Boyd-Clark et al. (1991) and Brosz and Grenoble (1991). However, discussions with the farmers revealed that with the exception of the "leaders," most scheme members could not accurately distinguish the various technical and financial services of each. Table 1 (all tables are located at the end of this Annex) compares farmers knowledge of development activities by a number of different categories of farmers. Farmers in irrigated schemes and those receiving credit from the Swaziland Development Savings Bank (SDSB) were most aware, but only of some development activities. Only about half of the male household heads were aware of any development activities at all, while only about a third of female household heads were aware of any of these activities. The table shows that even though there has been continual presence of donor and government financed assistance in some areas, only some farmers can specify what these are, and even they may only have a limited knowledge.

1. Chinese Agricultural Mission Projects

The Chinese Agricultural Mission (CAM) of the Republic of China first established a bilateral agreement with Swaziland in 1969 and has been working to raise productivity of SNL farmers through new varieties, production techniques trials, and demonstrations mostly in maize, but also in rice and vegetables. CAM has been working in 5 schemes in the north since 1972 with four being currently used by CAPM (Mkhovu, Mashobeni, Mavulandlela, and Mgbudla) and one scheme in the central area (Embekelweni), where CAPM has farmers.

Data on total hectarage and total tomatoes hectarage were obtained from the CAM technical assistance person who resides in the Hhohho area and are given here for four of the schemes involving CAPM farmers, along with CAPM data on hectarage cultivated. Table 2 shows that in every case farmers grow additional tomatoes outside of CAPM's purview. Also, if the lower figures for total hectares are used, some of the schemes have little unplanted land.

2. IFAD's Smallholder Credit and Marketing Project

IFAD's project, the Smallholder Credit and Marketing Project (SCMP) was approved in 1984 and completed in 1993. It rehabilitated 12 schemes covering 267 hectares for the production of rice and vegetables for 519 farmers. A continuation is currently being negotiated (IFAD 1993).

Currently, owners of irrigated plots grow a wide array of vegetables (see below for the types and percentages). Twelve of the schemes under SCMP (four of which are used by CAPM farmers) provided estimates of tomatoes that yielded 25 MT (actual 15 to 25 MT) with a total production of 2,505 tonnes on 99 hectares. Of production targets set by this project, only tomatoes achieved the target (in fact exceeded the target--105% if 25MT is used). The report noted that tomatoes are the favoured crop and "some flexibility in the cropping patterns will be necessary to provide for rotation to avoid build-up of disease..." (IFAD 1993 Working Paper No. V:38). Also noted is the competition for labour between commercial crops and subsistence maize, especially in the summer production season.

Scheme farmers prefer tractors for land preparation, although some use oxen and power tillers on irrigated, small plot. Timeliness in planting is important, but not all farmers can receive tractor or ox-plough services at "the right time," and of the 72% of farmers using tractors (IFAD 1993: Working Paper I:6), some have easier access than others. A recent analysis of maize yields, the staple, noted that characteristics of homesteads with poor yields included poor, shallow ploughing (presumably by oxen), male absenteeism, poor seedbed preparation, low plant populations, low and uneven fertilizer application, and poor pest control (IFAD 1993: Working Paper I:11).

Many of the same issues concerning the CAPM farmers have been studied in a survey of the SCMP schemes by the Monitoring and Evaluation Unit of the MOAC in 1992. The study addresses various constraints including labour, farmer's organizations, production, credit, marketing, and irrigation (MOAC 1992). Of the 300 homestead heads, 46 (15%) are female headed; 86% are employed, with 58% earning a living solely from farming. Although the bulk of the population is under 25 years of age, the majority of full-time farmers are over 50 years of age.

The data here are regrouped to give the four schemes that CAPM is working in (Mashobeni, Mkhovu, and Mgubudla in the north and Embekelweni in the central area), as well as the total for the 12 schemes. Table 3 shows that 60% of homesteads heads are available for full time farming, but this ranged from 57% in Embekelweni in central area to 81% to 85% in two schemes in the north. Table 4 shows that 60% of the full time and 47% of the part time labour is carried out by women; men do 40% of full time, but 53% of part time labour. Full-time female labour predominates (71%) in Embekelweni and Mashobeni. Women account for 17% of actual plot owners, although they often manage plots for husbands.

Most irrigation systems are surface (77%), while the remainder (21%) are pumped (furrow pipe or pumped surface). Water availability is a concern due to unlined canals, small reservoirs, inappropriate systems, poor water management by farmers, and pipe shortages. The average size area under production is 0.791 hectares per farmer. Interestingly, the report mentions the common problem of the difficulty in knowing how much land was really

planted or held as there are different units used including hectares, acres, steps, lines, and plots. (This is a problem for most CAPM farmers as well.)

The most popular vegetables grown are cabbages (79%), tomatoes (62%), beetroot (60%), green mealies (58%), and onions (53%). Also grown are spinach (43%) and carrots (42%). The report notes that green pepper (20%) and potatoes (17%) are not popular to grow, but pay the highest returns. Farmers prefer to grow vegetables in the winter season, because in summer (1) there are more diseases and pests; (2) there is competition for labour and land with maize and rice production; and (3) there is the problem of rotted product caused by water problems from excess rain. Because the farmers did not keep records, sold in small quantities, and used income in small daily increments, it was impossible to compute reliable returns.

The report noted that there was a greater demand for labour than could be obtained by the farmers, because of either scarcity or shortage of funds. About 60% employ labour, especially for ploughing, weeding, planting, and harvesting. Labourers are paid E3.20/day or E7.48/plot on average. Farmers mostly rent tractors for land preparation from the government hire pool and other farmers; oxen are used for discing and furrowing.

Some schemes are organized into cooperatives and associations with by-laws, memberships fees, securities, and shares. They have the power to discipline and expel members, but there are members who leave plots uncultivated, and the effectiveness of their discipline in these cases is unknown. Some schemes employ a night watchman, one is paying back a loan on a tractor, others have expenses for water pumps, contingency funds, and the chief's gift. Some rent power tillers to their members. A constraint is that tractors and power tillers are in short supply and late ploughing often results.

Farmers use a variety of input suppliers including the Central Co-operative Union (CCU), Farm Chemicals, supermarkets and general dealers; the preference is to buy from a supplier who delivers. Farmers use six types of fertilizers (2:3:2: (22), 2:3:2: (38), 2:3:4: (4), lime, urea and LAN and primarily 6 different insecticides (rogor, dithane, sevin, bravo, malathion, and copper oxychloride). Most farmers do not note the price of inputs or the quantity used. Sixty eight percent of farmers purchased inputs from the CCU shed (also see Table 6), but most of them (70%) mention availability problems and quality of the seeds (varieties out of stock or not available, poor germination, rotten seed). Difficulty in choosing the most appropriate seed is often experienced because of lack of technical advice and because the seller alleges that the seeds on hand are as good as the seeds the farmer wants.

There are a variety of credit sources available to the farmers including the SDSB, that accepts cattle as collateral, IFAD, European Development fund, People's Participation Fund, and the Women in Development Fund. The report noted that farmers complain about lack

of funds, but few want to borrow, and those who do usually ask for small sums (E100 to E500), which is below the ceiling set by the bank, to supplement what they have available at the time. Most of the funds are used for seasonal inputs (83%) and buying farm implements, although paying labour, school fees, building a house and buying cattle are other uses. Many farmers are against credit because "they are bitter about credit institutions" (especially the SDSB). Reasons given for not obtaining credit are the lack of collateral, lack of sufficient information about how to get loans, fear of indebtedness, and lack of marketing facilities. Repayment rates are high, however. "Most farmers borrow as individuals and only a few practice group lending. This is surprising because farmers in the schemes are organized into cooperatives and associations. Some farmers, however, are aware of the benefits of group lending "(MOAC 1992:vii).

The report notes that women farmers have particular problems of being discriminated against because of their legal status of minors. Generally, women lack knowledge of how to get credit, and both men and women in general have no idea as to whether or not women can obtain bank loans (65%); 14% say women have no access and only 14% comment that woman can borrow money from banks. Those who are knowledgeable tend to note that there is no discrimination by gender in terms of collateral and conditions. However, in fact, collateral is a problem for women, since traditionally, cattle are registered in the man's name and banks in fact have more stringent conditions for women in that "they need the husband's consent and if not married they need to be accompanied by an extension officer and/or a male member of the family" (MOAC 1992:20).

The SCMP provided packing sheds for each scheme, but the report noted that for them to operate efficiently, "there must be a well established marketing chain and necessary equipment and facilities such as packing material and cold storage" (MOAC 1992:25), but that these were lacking. The farmers prefer to sell product on the farm and more than 50% of farmers sell directly to buyers, however, the sheds are used for storing inputs and produce, holding meetings, and weighing rice. In some schemes, the sheds are not used at all; in Embekelweni it is because of the fear of theft. (Although not mentioned in the report, farmers in the current CAPM schemes who were interviewed note that all the sheds have been burgled and recently in Mavulandlela E11,257 was stolen from the safe.)

Farmers sell in bags, cases, tins, basins, and plastic bags, although some sell in bulk and have little idea of whether they are underestimating or overcharging. Fifty four percent sell to hawkers, 52% to neighbors, and 37% to Nokwane. The schemes near the Manzini/Mbabane/Mahlanya corridor sell to hotels, colleges, shops, and town markets. Many farmers (65%) express dissatisfaction with Nokwane market, and even those who were satisfied say it is the last resort, because of low financial returns. The study tabulates expected and received revenues; farmers receive 58% of their expectations! Farmers did not understand consignment and they thought they got cheated because of being charged

commissions, transport costs, and market fees.

The difficulty of increasing throughput is discussed as well as the high costs because farmers are expected to pay for transport services, packing, and marketing fees. Also, much of the product sent spoils. Thirty seven percent of farmers failed to sell all their product and reasons included glut, inferior quality, farmer location ("those at the bottom of the scheme do not get customers regularly"), and lack of transport (MOAC 1992:27).

Farmers report the following as marketing constraints: (1) that there is "no source of marketing information which will give them the best prices" (MOAC 1992:27), (2) there are delays in payments which cause late planting, and (3) there is the lack of collection, packing materials, and organized transport.

The MOAC survey evaluated the SCMP project, but also informed the farmers that the project would end. Eighty five percent of the farmers were not aware that the assistance provided by the project would end and only 10% "said they will be able to stand on their two feet," because they have associations (MOAC 1992:29). Farmers said the project should be extended "because the sheds do not have electricity, not all farmers have taken training, and the benefits of the Project have not yet been realized" (MOAC 1992:29).

Recommendations were made and some are repeated or paraphrased here as they are relevant to the CAPM project.

- "Associations and/or cooperatives need to be strengthened by soliciting the support of the chiefs" (MOAC 1992:x)
- Suppliers should provide transport.
- Associations and/or cooperatives need to buy their own tractors.
- A credit guarantee scheme by government could help solve the gender problem to facilitate loans for women.
- "Farmers must consider signing a legal agreement with certain buyers for a percentage of their produce so that they can be assured a market for some of their produce" (MOAC 1992:xi).
- Nokwane agents should pay cash, and "be obliged to buy the local produce first and only supplement with produce from neighboring countries" (MOAC 1992:xi).
- Training on record keeping is needed.
- "A common unit of measurement must be used for measuring...produce" (MOAC 1992:xi).

3. Government Extension

SNL farmers agricultural receive extension with a ratio of 1 extension worker to 260 homesteads with a total of 164 extension workers. The structure of the Service is based on the "T and V" system that began in 1983. A recent conclusion is that after the Rural Development Areas Programme was completed and the funding reduced, that extension services

"suffered from a severe lack of operating funds which affected morale and mobility. The problems encountered during the RDAP through lack of acceptable messages and advice to extend to the majority of the farmers still persist" (IFAD Working Paper No. 1: 27).

Currently the service focuses on the more privileged farmers who have good soils and technology supervised by the CAM. There are 6 horticultural specialists in CAPM areas who are currently being upgraded in their skills by the MOAC. CAPM scheme farmers favourably noted some assistance from these workers. However, there is little linkage to research endeavors or development of technologies to meet the needs of various categories of farmers. The IFAD project continuation proposes improvements in current training courses for extension workers that includes "irrigated horticultural crop agronomy." Additionally, the formation of farmer groups by the extension workers (for water delivery and extension services including credit) is planned.

D. Marketing Channels for Vegetables

The marketing of fresh produce is handled by specialized wholesalers, itinerant traders and retailers. It is estimated that there are 200 to 300 itinerant traders involved in fresh produce marketing. Most of them buy directly from the farmers, usually without prior arrangements. They also buy from farmers and markets in RSA. A survey collected by CAPM, and analyzed by this author, shows that these vendors and hawkers have little loyalty to growers, are not particularly focused on the Swazi producer, and will readily supply from RSA sources.

The sellers for their part try to maintain a number of outlets. (See the discussion under Section Annex D, III-B below on current CAPM farmers). A recent evaluation shows that credit clients and irrigation scheme farmers had four to six outlets, including NAMBoard and Nokwane markets (now also through CAPM), traders (both those who came to the farm and those where product was delivered), neighbors, and other markets (Doughty 1992). These are given in Table 5 specifically for vegetables. SDSB credit clients and irrigation scheme farmers both produce more product than the other categories, but also utilize a variety of markets other than local sales.

NAMBoard operates Nokwane Fresh Produce Market, where CAPM has worked with Philani. Floor trading involves the charging of a commission of 5% to 7.5% , and the agents pay a 5% fee of the value of the produce traded to use the facilities. The market has flourished and the throughput has increased from 7,400MT to 12,400 MT between 1988 and 1991 with an increase in value of E1.3 to E9.5 million in the same period. The major problem is that while being financially viable, the market has not yet truly fulfilled its mandate of marketing Swazi products, especially from smallholders. Major reasons include (1) preferences by the agents to buy from RSA because of ease of getting large consignments, rather than dealing with many small farmers; (2) agents lack marketing contracts with small farmers; (3) agents are exempted from import duties; (4) agents can pay cash, add their mark-up, and sell to Swazi consumers; and (5) Swazi smallholder produce, unlike that from RSA, has not been graded and packed (IFAD 1993: Working Paper III:13).

Smallholders and itinerant traders view Nokwane as the market outlet of last resort, and they dump product that cannot be sold elsewhere, which may rot, frustrate the agents, and irritate the farmers, who may not get paid or receive very low prices.

The Central Cooperative Union (CCU) facilities are currently serving both as places to secure inputs and CAPM is using its sheds as collection points in the southeast areas (Siphofaneni and Sithobela). Although previously financially insolvent, it has been rehabilitated, but problems persist. Among them are

...unorganized and scattered smallholders, which renders produce gathering expensive,...lack of Nokwane market--smallholder linkages,...and inability of smallholders to meet formal market standards of packing and presentation (IFAD 1992 Working paper III:21).

The MOAC survey described above noted farmers difficulties with CCU input supplies, especially poor seed quality and lack of preferred varieties. Table 6 gives the percentage of homesteads and where they obtained inputs in terms of the CCU sheds, private traders and other sources. The various categories of farmers are divided mostly into the CCU and private traders (Doughty 1992).

III. Findings About CAPM Farmers And CAPM Operations

A. Analysis of Current CAPM Farmers by Gender and Type

1. Participation

The project currently has a total of 138 farmers (based on lists generated at the beginning of the winter production season, March 1993). (It should be noted that during the season, farmers may have been added or dropped.) For this analysis the data are divided into scheme, individual non-scheme Swazi Nation Land (SNL), and title deed land (TDL) farmers. Table 7a shows that 27.5% of current total CAPM participants are women. Women constitute 29.9% of scheme farmers in the north and 66.6% in the central scheme area, whereas the individual SNL and TDL category has only 10% women in central and 0% in the southeast areas. (Previously, there were some women scheme farmers in the southeast, but the scheme was dropped from CAPM for this season.) Considering the data by scheme and non-scheme farmers, 33.9% of scheme farmers are women, but only 3.4% (1 TDL farmer) of non-scheme farmers is a woman.

Table 7b shows that CAPM farmers account for 109 of 193 farmers (56.5%) in the scheme areas where CAPM is working; 32.6% of them are women. Comparable figures for individual SNL and TDL farmers are not available. However, the Social Soundness Analysis for the PPA gives a figure of 877 households with irrigation (with women constituting at least half, if not more of farm workers) and MOAC reports 350 TDL farms in use; hence, the 29 CAPM farmers who make up both individual SNL and TDL CAPM farmers are but a small fraction (2.3%).

Table 7c disaggregates the number and percent of men and women in all the current schemes that CAPM is working. Women constitute an average of 32.6% of all scheme farmers with a high of 47.1% in Mavulandlela, one of the areas where the rapid rural appraisal was carried out (see below). Since CAPM will require greater volume of product, more scheme and non-scheme farmers will undoubtedly be brought into the project. Sensitivity to the issue of increasing the number of women in general (as well as in relation to their proportional numbers), and strategies for doing so should be addressed by the project. Additional investigations are necessary to determine the actual deterrents; the literature abounds with cultural constraints, yet women do constitute 32.6% of scheme participants. Also, actual deterrents need to be studied to ascertain if there are limitations for women to have further agricultural intensification in terms of obtaining credit, increasing hectarage, improving irrigation, and remedying labour shortages.

In order to participate in CAPM, farmers must have irrigation. Scheme farmers already have furrow irrigation (drip irrigation is currently being installed at Embekelweni scheme

in central area using Government of Swaziland funds). However, non-scheme SNL and TDL farmers have used CAPM to assist them in obtaining loans to increase the amount of their land under irrigation or to upgrade their systems. Excluding the current Embekelweni scheme upgrade, Table 8 shows that 10.9% of the total farmers in the CAPM project have added to or upgraded their systems. Non-scheme SNL and TDL farmers have taken advantage of CAPM to do so in central (50%) and southeast (47.4%) areas.

2. Labor hired

Calculated in Table 9 is the number and percentage of farmers who hired labour and obtained credit because of CAPM. CAPM data show that 23.2% of farmers hired labour, with the largest percentage being in the southeast (52.6%) and central areas among non-scheme SNL and TDL farmers. A total of 130 persons were hired by 32 CAPM farmers. Scheme farmers only hired 1 or 2 compared with individual SNL farmers who hired 2 to 5 and TDL farmers who hired 5 to 15 labourers.

3. Credit facilitated by CAPM

Table 10 shows that the farmers who obtained credit were almost exclusively in the southeast where 52.6% of the farmers obtained bank loans (this explains their irrigation additions and upgrades (individual SNL farmers mentioned this type of assistance from CAPM very positively during the rapid rural appraisal, while scheme farmers seemed less interested--see below).

4. Land under CAPM production

It should be noted, however, that farmers do not use all of their irrigated land for CAPM production either because they allow some to be in fallow, or because they are cultivating other non-CAPM crops. Data in Table 11 shows that scheme farmers in the north put 51% of their land in tomatoes while central area scheme farmers only put 24%. Some of the latter refused to plant because they had not been paid for previous production. Individual SNL farmers put 44% of their land in CAPM crops, while TDL farmers, who have large holdings, put only 7%. These figures differ significantly from those collected by CAM (Table 2), but CAM totals are for the entire year and include both summer and winter production seasons. Table 12 shows the differences between what CAPM has programmed and what farmers have actually planted. Farmers in the north planted 77% to 78% of what CAPM programmed them to plant, with women planting more than men of their total hectarage (63% compared to 49%). At the scheme in central area, men planted 63%, but women only 27%, as they were unhappy about non-payment for previous crops. Individual scheme farmers planted 62% of what was programmed for them. Male TDL farmers planted 53% and the one woman planted 83%.

5. Income from CAPM crops

An indication of income changes between the baseline and current situation was calculated for each crop based on estimated yields and prices given in the technical section for prices of CAPM crops. It should be noted that there is still one more planting expected for most farmers, and the final average incomes will be higher than those given in the tables. Table 13 provides the average incomes, yields, and hectares for scheme, non-scheme SNL and TDL farmers by gender for tomatoes from baseline through the three production seasons of CAPM. In the baseline, the yields of 12 MT for scheme farmers and 15 MT for non-scheme SNL and TDL farmers are used. These increase to 18 MT and 20 MT, respectively, as a result of CAPM. Incomes for male scheme farmers have not increased from the baseline, although the conditions of drought and hail for winter 1992 and summer 1992 undoubtedly contributed. As there is yet another planting in the programmed production for the winter 1993 season, the incomes will in fact show an increase over the E1,733 in the table. The women's income have increased more than the men's. It remains to be seen if this gender difference is real or an artifact of incomplete data. Individual SNL farmers' incomes have increased from E3,030 to E4,848, which will probably be higher and a significant difference. The data for the one male TDL farmer are interesting, as it is the same farmer in the baseline (.25 ha and E1,136) and currently (2 ha and E12,120). His hectareage increased eight-fold, while his income increased by 10 and a half fold.

The data for green peppers given in Table 14 show significant increases for all farmers in all categories and for both men and women. Table 15 gives the data for sweet corn, which with the exception of one scheme farmer, was not grown in the baseline nor in the previous two production seasons. Although total income appears good, there have been problems with disease and with marketing and lower prices, which have in fact lowered yields and income. Both these tables should be recalculated at the end of the current production season to give final figures for the winter 1993 production season. Additionally, total income from each farmers for all CAPM crops grown in each production season should be calculated, but this was not possible here.

B. A Focused Rapid Rural Assessment of CAPM Farmers

A rapid rural assessment (RRA) of a sample of farmers participating in CAPM was carried out specifically to assess the impact of the CAPM project on the farmers. The RRA was a brief, but focused exercise to both learn about the farmers' methods and needs and to allow them to assess the impact of CAPM on their farming systems.

The data were collected from the three areas that CAPM is currently working in, and recognition was given to crops grown, and type of farmers based on kind of land holding. Irrigated scheme farmers in the north and central areas were grouped together, as were

individual SNL farmers in central and southeast areas and TDL farmers in central and southeast areas.

1. The rapid rural appraisal sample

(a) Group irrigation scheme farmers growing fresh market and Nema-1400 tomatoes, sweet corn, and green peppers were interviewed in three of 9 schemes--in the north at Mkhovu and Mavulandlela and in the central area at Embekelweni (n=12, 5 male and 7 female; this is a sample of 11%). Scheme farmers have limited amounts of irrigated land and little room for expansion or rotation. Diseases/insects on tomatoes are limiting factors in production as a consequence. These farmers have small hectares, but are commercially oriented because of over 20 years of project enterprises and experiences--e.g., through IFAD projects and Republic of China extension assistance. Sales from primarily tomatoes and other vegetables provide the major income source for the farmers in the north, while off-farm/non-farm income sources are larger in the central area.

(b) Individual farmers who have irrigated their Swazi Nation land (SNL) (n=5, all male; this is a sample of 26.3%) grow tomatoes (fresh market and Nema 1400), sweet corn, and green peppers as a result of CAPM. These are located in Malkerns in the central area and in Siphofaneni in the southeast area (two of several areas where CAPM is working). All CAPM farmers in this category are men.

(c) Individual farmers who own irrigated title deed land (TDL) (n=4, 3 male, 1 female; this is a sample of 50%), grow tomatoes (fresh market and Nema 1400), sweet corn, and green peppers. They are located in the Malkerns and Sidvokodvo in the central area and in Siphofaneni in the southeast area. All are men except for one woman in Sidvokodvo.

2. Findings

(a) Reasons for joining CAPM

All farmers joined the project because of marketing considerations primarily. For scheme farmers technical assistance was a second priority, while non-scheme SNL farmers were also enticed by their loans being facilitated.

(b) Participation in CAPM services (i.e., training, credit, technical assistance)

Virtually all scheme farmers have taken all the courses given in their area (see Table 3), while only a fraction list another project service (credit--two farmers). There were no gender differences. All farmers were invited to training events and SNL and TDL farmers have had some training, although less than scheme farmers, but they also mention the receipt of seedlings and credit as services received. The woman TDL farmer is hoping that CAPM can facilitate a loan for her and she particularly appreciates the technical advice of the FA,

although at times she does not follow CAPM's technical recommendations.

(c) Other services wanted from CAPM

Both scheme and non-scheme SNL farmers want support for their farmers' associations; these were their first and second reasons respectively. The type of support they imagine relates to transportation to attend meetings, assistance with drafting the constitution, and facilitation of substantive matters such as marketing. SNL and TDL farmers' first response, however, was a request for more technical assistance (for diseases and pests, water management, production, and marketing).

(d) Changes in production as a result of CAPM

Scheme farmers mentioned more changes than non-scheme SNL farmers who have more changes than TDL farmers. Fifty percent or more of scheme farmers mention the programming of crops, changes in inputs, shift to new crops as the 1st, 2nd, and 3rd most important changes followed by changes in cultural practices (particularly plant spacing) and the receipt of higher yields. Non-scheme SNL farmers mention changes in grading practices, the shift to new crops, more inputs and cultivating larger areas in descending order. TDL farmers note only the shift to new crops and improved technical assistance.

(e) Changes in labour as a result of CAPM

Both the non-scheme SNL and TDL farmers have had to hire more labour, especially for harvesting and grading, as a result of CAPM, whereas the great majority of scheme farmers have had no increase (only two farmers increased their hired labour) and mostly use their own and some family labour. There is a particular system in Embekelweni of groups of four farmers planting and harvesting each person's field in turn.

Some farmers have definite preferences towards hiring men rather than women while for other farmers, it is the opposite in terms of permanent labourers. In general, most hire both sexes, but there is a tendency for women to be hired for harvesting. Scheme farmers tend to pay in kind (mostly produce not taken by marketers), while non-scheme SNL and TDL farmers mostly pay in cash.

(f) Programmed production

Scheme farmers appreciate the programmed production and see its results. However, they do not think they can do programmed production on their own and have doubts as to whether or not a farmers' association or organization could coordinate this aspect. They see any management by peers as problematic.

(g) Market channels and strategies

Scheme farmers have difficulty distinguishing NAMBoard and CAPM marketing services; some farmers are likewise confused about CAPM firms and FAs as market channels.

However, a single discussion with the farmer is not enough to elicit this information carefully enough. All farmers use a number of marketing channels (NAMBoard, CAPM and hawkers and vendors are used by all farmers). However, only scheme farmers also sell to Indian traders. Only some of the SNL, but all the TDL farmers have their own vans, while none of the scheme farmers do. A few scheme and TDL farmers also had contracts with supermarkets.

Farmers strategize to supply all sources with product. They balance off price, immediate versus delayed payments, and whether or not all or part of the product is taken. CAPM is presently the second choice with some scheme farmers, who prefer the Indian traders who take everything for a lower price, while other scheme farmers prefer hawkers who pay immediately and the farmer is able to set the price. In this case, the hawkers only take part of the product, and the farmer does not have to grade the product.

(h) Advantages of CAPM

Scheme farmers perceived marketing access and assistance as the overwhelming advantage of CAPM with production support and programmed production being mentioned to a much lesser degree. Credit was relatively unimportant with some farmers noting that they were happy that the project did not require them to take inputs on credit, so there were no inputs to repay. These farmers have long term experience on schemes to produce vegetables and other crops, however, many cannot distinguish between CAPM, and previous programs services of IFAD and Chinese funded projects. A number of farmers mentioned that it was too soon to tell and that CAPM was still on its best behavior (as reflected in the quote from the woman tomato farmer).

Drought and other weather conditions, have undermined some of CAPM's efficacy. It should be noted that those farmers who do understand all the services available, seem to obtain more services and have better results. No gender differences were observed, except that married women in the scheme in the central area are not interested in getting credit because their husbands' non-farm income is used to purchase inputs. This is not the case of scheme farmers in the north. Some women there appreciate getting credit in their own names (since at first credit was only given to the husband).

By contrast, the SNL farmers view both marketing and technical assistance as being important. They mention that CAPM knows more marketing channels, including South Africa, which they do not have access to. The seedlings, training and encouragement from CAPM are highly valued. For some, the assistance of CAPM in getting credit loans is the major advantage. Two farmers mentioned that the time to receive bank loans was greatly decreased because of CAPM's assistance compared to their previous experience. An added benefit is in terms of a new visibility of these farmers; it was noted that the MOAC now knows about these farmers because of CAPM ("the Minister himself has walked on these

lands").

TDL farmers also value the production assistance and assistance in obtaining seedlings given by CAPM, as they do not have extension agent advice. Two farmers have had loans facilitated by CAPM. For some, the vegetable crops are new and they are enjoying the regular field visits from CAPM's field assistants. Still others are skeptical and say it is too early to tell if CAPM will produce the results they expect.

(i) Constraints and problems with CAPM

All farmers see both marketing and production problems that may not be solved by CAPM. In terms of market problems and constraints, scheme and non-scheme SNL farmers are concerned about delayed payments, grading, and not understanding marketing firms. Scheme farmers are worried about not being able to market all of their product and receiving low returns, while non-scheme SNL farmers note the lack of competition for the crops produced under CAPM and that it is too soon to tell if there will be problems. This latter statement is echoed by the TDL farmers, who are also worried about market glut, price fluctuations, and delayed payments.

Farmers perceive production problems as secondary, although all farmers worried about diseases and pests. Scheme farmers have less land to rotate crops and to put in fallow, and diseases on tomatoes are increasing. Scheme farmers are particularly concerned about the costs of inputs and seeds, their lack of knowledge, access to inputs and crop rotation. SNL farmers are concerned about spacing and yields, with one remarking that he does not like programmed production as it is too restrictive. The only problem mentioned by a TDL farmer has to do with hopes that CAPM will assist with a loan. Scheme farmers also mention transport and credit as constraints, and non-scheme SNL farmers mention credit and CAPM staff turn over as being problems.

(j) Constraints external to CAPM

Both scheme and SNL farmers cite unreliable markets and vendors as marketing constraints for their non-CAPM crops. Scheme farmers are also constrained by lack of farm machinery (they have to hire tractor services and share machinery such as the rotovator that breaks down) while SNL and TDL farmers are more concerned about water and irrigation systems, but have their own farm machinery. In fact, the irrigation system in the schemes is communally worked on, upgraded by CAPM and other projects, while SNL and TDL farmers, who have a great deal more land than scheme farmers are always strategizing financially as to how to bring more land under irrigation, or to upgrade from furrow to sprinkler or drip systems. Both scheme and SNL farmers see diseases and pest as constraints, while TDL view transport for their non-CAPM crops as a constraint.

(k) Farmers' associations

Scheme farmers are accustomed to farmer associations, although there have been problems with management and handling of funds. Previously, credit was given to one scheme association and defaults resulted due to poor production by some members. As a consequence, the association owned vehicle and tractor were taken to repay the loan.

Scheme farmers in the north are enthusiastic about the packhouse and have great hopes that it will provide "complete" market facilities and additional marketing options. However, they have concerns about transport of product from the other schemes to Mkhovu where the packhouse is located. They also think that there must be extensive training and support to the management system to sustain the packhouse.

SNL farmers have less experience with associations and their organizations are more rudimentary and still developing. All remarked that few farmers attend meetings and that there is not much organization.

3. Summary

Scheme farmers see the advantages of CAPM in terms of helping them with marketing; production aspects are secondary, probably because they have received technical assistance from the previous projects and from government extension agents. All see problems with late payments and transport. There is the strong notion that all marketers should be supplied and multiple outlets may still be necessary for CAPM farmers, especially since they also market other crops as well.

Scheme farmers perceive themselves as doing commercial enterprises, but their production is circumscribed in terms of expansion by the size of the scheme (a few farmers did increase their land for CAPM crops by renting an additional plot from others). It is possible that continued cultivation without much rotation will cause declining yields. It should be determined as to whether or not more farmers could participate in producing CAPM crops and if there are additional crops to rotate with tomatoes (that are not in the same family group such as peppers).

Scheme and some individual SNL farmers have a limited range of understanding about the functions, methods and purpose of CAPM. Some think it is a marketing firm. Others think it is there to help with transport. Training on the nature, organization, and scope of activities (of projects, programmes, firms of CAPM) is necessary to clear up misconceptions.

Individual SNL and TDL farmers have a greater capacity than scheme farmers for increasing production by increasing their hectareage under irrigated cultivation. These farmers mostly are independent of each other, and not linked into any network or association. TDL farmers

could be linked up into a farmers' association. These farmers are attuned to the market, understand and feel market shifts and gluts, however, they do need technical production assistance. They are able to strategize to obtain better prices and do not have to sell at the farm gate. CAPM has less effect on them in terms of production advice and crops, because they are already cultivating many crops and large areas.

IV. Recommendations For Enhancing Project Success

A. Training

Scheme farmers confuse the project services offered by CAPM, government extension, and previous and on-going IFAD and Chinese-funded projects. They are therefore likely to confuse information about the packhouse and how it is linked to the farmers' organization and to the Management Firm. Therefore, training sessions are needed that carefully explain the types of projects and services that exist. Currently, the seven board members of the associations (representatives of the schemes in the north) have much greater knowledge of the types of project services than the other farmers. Training that explains the notions of "value-added" through grading and packing, selling on consignment, marketing fees, etc., needs to be developed, and attention paid to having all farmers, not just the leaders and male farmers, attend the sessions.

Farmers also need training sessions on (1) crop rotation and (2) record keeping and farm finances. The development of a simple system that farmers can use to keep track of inputs and outputs would be beneficial in general and in developing a commercial mentality.

B. Farmers' Organizations and Packhouses

The farmers' organizations to operate packhouses need careful structuring and nurturing. Detailed management training is required on how to organize and operate such an organization. Issues covered should include information on:

1. How to structure representation between the schemes in the north and between men and women on the board and in committees or governing bodies. Women should be represented, and unless there are strategies for including them, it is unlikely that many (or any) will be elected. (An organization in Embekelwni would undoubtedly contain women members as women members are the majority.)
2. How to operate a small business enterprise which would include keeping books and records of members' production and sales.

3. How to get value-added by correct grading, packing, and business practices.

Several issues will need special attention. In the north with scheme farmers, transportation between Mkhovu (where the packhouse is located) and other schemes in terms of meetings and product collections is likely to be a problem. To facilitate collections and payments, the possibility of having telephones should be explored. There is already one telephone at Mkhovu in the shed across from the packhouse. The project or GOS should consider expending some funds for communication networks to facilitate marketing activities in CAPM areas. Since roads are often poor and individual farmers and schemes scattered from the packhouse and markets. Therefore, collection and information for buyers must be facilitated by communication. By comparison, all large, commercial farmers have telephones that facilitate their contact with market agents, buyers, and input suppliers.

It should be determined as to how the Indian traders would use the packhouse to source. (Individual SNL and TDL farmers noted that when these traders were asked to make a contract commitment, they refused and did not return to the area.) In the northern area, would the trader who operates there still hire a scheme farmer as a sourcing agent, as he does at present, or would he go directly to the packhouse? Would the packhouse obtain the commission? Would there be some resentment from the farmer presently receiving this commission?

In the central (Embekelweni) area, the feasibility of having an on-site packhouse should be examined, however, the proximity to NAMBoard must be considered as well. A closed shed built by the IFAD project does exist there, but farmers note the burglary problems.

Scheme farmers both in the north and central areas have become dependent on donor-financed assistance and their ability and confidence to form independent organizations with business functions will have to be developed. They mostly come together for irrigation maintenance or farm machinery rentals. Another severe problem concerns those who have been hired through the SCMP as secretaries at the individual packing sheds. Accusations of mis-handling funds have occurred, and careful attention needs to be paid to persons hired by the farmers' organizations in any capacity.

Individual SNL farmers in both the central and southeast areas need extensive assistance in forming their farmers' organization in terms of its constitution and by-laws, as well as the practical operation of turning an organization into a business. These farmers are scattered, and only a few have transport. Whereas they can take a bus or other transport to attend a meeting, it is inconvenient and time-consuming, and it one of the reasons why the limited type of association they presently envision is not yet underway. Some attention needs to be given to ameliorating this constraint.

Farmers in central area are closer to markets (NAMBoard/Nokwane, the Marketing Firm, and entities such as Entikini and Philani). It may be difficult for a farmers' organization to be developed with the individual SNL farmers in the central area who are few, scattered, and close to a variety of markets.

Here again, one way to address the distance and bad roads problem is to have a communication system that links the farmers with the FAs, Management Firm, and with each other. The availability of telephones and or radio phones to do this is critical. The central collection zones (CCU sheds) could also be the locations for public telephones.

C. Marketing Issues

The MOAC report recommended that the Swazi produce industry would be enhanced if the Nokwane agents would pay cash, and "be obliged to buy the local produce first and only supplement with produce from neighboring countries" (MOAC 1992:xi). The Marketing Firm will have to deal with uneven supplies of product unless there is clear evidence of initial success and farmers flock to the packing houses and CAPM project for sales. Timeliness of payments, under the control of the Firm, is essential, and will go a long way with the farmers.

D. Specific Women in Development Issues

1. Production

Women scheme farmers generally have less land than men, and in the north they plant more of their holdings. CAPM can assist women scheme farmers in particular to obtain credit, get the right kind of seeds and other inputs, and provide technical assistance about crop protection. Special efforts should be made to schedule the timing of training so as to facilitate women's attendance. Along those lines, wives of CAPM male farmers should also be encouraged to attend training, as they often manage plots in their husbands' absence. Any additional trials or demonstrations in farmers' fields or with farmer management should assure that there are significant numbers of women participants.

2. Participation and representation

Women scheme farmers are participating in CAPM, and they are active participants. However, women farmers may need some encouragement to increase the amount they plant, obtain the necessary credit to purchase inputs, attend training, and keep records. Also, the inclusion of women farmers' schemes through the MOAC's Zenzele programme (Home Economics Branch n.d. 1990) should be considered, especially if they are located in the areas where CAPM is working and close to other farmers. (There are some of these in the

southeast area near individual SNL farmers.) Their hectarage may be smaller, but their participation in CAPM may be advantageous for the smallholder commercial sector.

Also, there undoubtedly are women farmers who manage or individually farm SNL and perhaps more than the one female participant who has a TDL farm. A strategy for including more of them is important and needs to be formulated and implemented.

What would a strategy that targets women farmers add to developing the small farmer commercial sector? The answers are multiple and include issues concerned with (a) distribution and equity; (b) production labour; and (c) welfare and nutrition.

First, it may be argued that it is easier to obtain product in greater volume from large farmers than from small farmers. Yet in order to develop the majority of the population, small farmers should not be bypassed, because it is more difficult to work with them or because questions of scale might predetermine lesser yields. It may be easier to deal with male farmers rather than with females, but again, the majority of the rural population would be discounted.

Second, it is necessary to add women farmers to commercial farming programs because women already are doing commercial production on schemes in their own right and as wives of scheme and non-scheme farmers; in general, there are more women doing agriculture than men. If women participants or wives of registrants are not fully trained and participating in production and marketing techniques, product production and quality are undermined (Armstrong and Russell 1985; Ginindza 1989; Sachs and Roach 1983; USAID 1991).

Third, from the point of view of the overall welfare of the country, a nutrition study carried out by the MOAC noted that children of SNL farmers had more stunting than those on individual tenure and that mother's education and income levels were correlated with children's nutrition (National Nutritional Council n.d.). Mothers with higher incomes had fewer malnourished children. Participation in commercial vegetable production impacts positively on women's incomes.

From the point of view of the commercial sector, the development of women's production skills and entrepreneurship is critical in terms of keeping production coming from the smallholder irrigated scheme sector. Women's conscientious work in farming has also been capitalized upon in terms of seed and seedling selection and production, packing and grading, and record keeping.

Finally, as noted above, there should be some attention to women's participation in the farmers' organizations both as board members and as general members. Currently, each of the seven schemes in the north is represented by a man, and the total structure is thus far all

male. Strategies for inviting women to participate should be devised by CAPM.

E. Monitoring and Evaluation

Although the project has grouped farmers by area (north, central and southeast) and size of holding, (less than 0.5 hectares, more than 2 hectares, and more than 10 hectares--Grenoble et al. 1993), it is better to use the designations of scheme, individual SNL and TDL farmers in terms of monitoring and evaluation. It is suggested that the summary tables presented here (Tables 7 to 15, which are based on CAPM data collected by the FAs and other technical assistance personnel) as well as the one on training (Table 3) in Interim Assessment (Ronco 1993) should be followed and updated at the beginning and end of each production season. Finally, the suggestions for monitoring and evaluating project activities given in Section IV of the main text should be followed.

Table 1: Knowledge of Development Activities by Various Farmer Categories

	Percent of Respondents having knowledge of activities					
	Activities aware	Number of activities specified				Number
		None	One	Two to Three	Four or more	
SDSB Credit Clients	64%	38%	31%	29%	2%	42
Irrigation Schemes	68%	32%	16%	45%	7%	31
Non-Scheme	41%	60%	18%	22%	0%	63
Survey Total	54%	48%	21%	29%	2%	136
Lowveld	27%	73%	18%	9%	0%	22
Middleveld	31%	69%	22%	6%	3%	32
Men Household Heads	49%	51%	23%	24%	2%	159
Women Household Heads	32%	68%	13%	10%	9%	31
Adapted from: Doughty (1992:53)						

Table 2 Hectarages For All Crops And For Tomatoes On Four Schemes Having Both CAM And CAPM Farmers

Scheme	Total Estimated Hectarge*	Hectarage All Crops 1992-93	Hectarage by CAM for all tomatoes	Hectarage CAPM for tomatoes
Mkhovo	34 to 50	27.3	6.0	3.1
Mavulandlela	12	26.5**	8.4	3.4
Mgubudla	24	26.1**	1.6	1.3
Mashobeni	24	20.7	6.3	5.5

*CAM and CAPM have different estimates of total hectarages. Also see Boyd-Clark (1991), Brosz (1990), and Brosz and Grenoble (1991).

**Includes two planting seasons

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Table 3: Labour Availability of Household Heads for 12 Irrigated Schemes, Including 4 CAPM Project Schemes

SCHEME	FULL-TIME		PART-TIME		NO LABOR AVAILABLE		TOTAL HOUSEHOLD HEADS	
	N	%	N	%	N	%	N	%
EMBEKELWENI	12	57	7	33	2	10	21	100
MASHOBENI	21	50	13	31	8	19	42	100
MKHOVU	22	82	3	11	2	7	27	100
MGUBUDLA	11	85	1	8	1	8	13	100
ALL 12 SCHEMES	175	60	77	26	42	14	294	100

Adapted from: Ministry of Agriculture and Cooperatives
1992: 62-63

Table 4: Family Members who are Available for Full-Time and Part-Time Farmwork for 12 Irrigated Schemes, Including 4 CAPM Schemes

SCHEMES	FULL-TIME						PART-TIME					
	M	%	W	%	TOTAL	%	M	%	W	%	TOTAL	%
EMBEKELWENI	7	29	17	71	24	100	34	57	26	43	60	100
MASHOBENI	28	29	53	71	75	100	91	54	77	46	168	100
MKHOVU	23	52	21	48	44	100	62	55	51	45	113	100
MGUBUDLA	11	55	9	45	20	100	21	38	35	63	56	100
ALL 12 Schemes	192	40	286	60	478	100	588	53	527	47	1115	100

Adapted from: Ministry of Agriculture and Cooperatives, 1992: 62-65

Table 5: Vegetable Marketing Outlets used by various homesteads selling vegetables

	Percent of Homesteads reporting sales usually to:						N
	NAMBoard/ Nokwane	Other Markets	Trader Visiting Farm	Delivered to Trader	Sold to Neigh bors	Other	
SDSB Credit Clients	88%	57%	41%	100%	29%	98%	42
Irrigation Schemes	81%	55%	39%	94%	39%	65%	31
Non-Scheme	0%	20%	0%	0%	100%	0%	5
Survey Total	35%	47%	45%	10%	76%	0%	49
Lowveld	0%	0%	0%	0%	0%	0%	1
Middleveld	0%	0%	0%	0%	0%	0%	0
Men Household Heads	34%	41%	48%	11%	75%	0%	44
Women Household Heads	33%	100%	17%	0%	83%	0%	6
Adapted from: Doughty (1992:52)							

Table 6: Source of Farming Inputs for Farmers of Various Categories

	Percent of Homesteads reporting inputs obtained from:					Number
	CCU Depot		Private Trader		Other Sources	
	Local	Elsewhere	Local	Elsewhere		
SDSB Credit Clients	62%	26%	21%	45%	5%	42
Irrigation Schemes	77%	6%	19%	32%	16%	31
Non-Scheme	51%	13%	22%	17%	3%	63
Survey Total	60%	15%	21%	29%	7%	136
Lowveld	91%	0%	50%	0%	5%	22
Middleveld	39%	0%	19%	81%	3%	31
Men Household Heads	60%	11%	26%	33%	7%	159
Women Household Heads	65%	13%	13%	39%	0%	30

Adapted from: Doughty (1992:53)

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**TABLE 7a Farmers Participating in CAPM by Area and Type of Farmer,
as of the start of the Winter Production Season, March 1993**

		Men		Women		Total	
		N	%	N	%	N	%
<u>Area</u>							
North	(7 schemes)	68	70.1	29	29.9	97	100
Central	(1 scheme)	4	33.3	8	66.6	12	100
	(individual SNL/TDL)	9	90	1	10	10	100
Southeast	(individual SNL/TDL)	19	100	0	0	19	100
<hr/>							
TOTAL		100	72.5	38	27.5	138	100
<hr/>							
8 Schemes		72	66.1	37	33.9	109	100
Individual SNL/TDL		28	96.6	1	3.4	29	100

**TABLE 7b Number and Percent of Scheme Farmers Participating in CAPM,
as of the start of the Winter Production Season, March 1993**

Total CAPM and non-CAPM Farmers for 8 Schemes	130	67.5	63	32.6	193	100
% of CAPM Farmers in 8 Schemes	72	55.4	37	58.7	109	56.5

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TABLE 7c Estimated Number and Percent of Total Scheme Farmers
(in areas where CAPM is working)
as of the start of the Winter Production Season, March 1993

	Men		Women		Total	
	N	%	N	%	N	%
<u>North (7 schemes)</u>						
Sikhumiweni	13	72.2	5	27.8	18	100
Mkhovo	20	66.7	10	33.3	30*	100
Mvembili	17	68.0	8	32.0	25	100
Mavulandlela	9	53.9	8	47.1	17	100
Mashobeni	34	65.4	18	34.6	52*	100
Mgubudla	12	75.0	4	25.0	16	100
Vusweni	13	92.9	1	7.1	14	100
<u>Central (1 scheme)</u>						
Embekelweni	12	57.1	9	42.9	21*	100
TOTAL (8 schemes)	130	67.5	63	32.6	193	100

*Estimates

Source: CAPM Fields Assistants, June 1993.

Table 8 Farmers Adding or Ungrading Irrigation Systems as a Result of CAPM by Area and Type of Farmer, as of the Start of the Winter Production Season, March 1993

		Men	Women	Total	
		N	N	N	% of total farmers in the category
<hr/>					
<u>Area</u>					
North	(non-scheme)	1		1	
Central	(individual SNL/TDL)	4	1	5	50.0 (5/10)
Southeast	(individual SNL/TDL)	9		9	47.4 (9/19)
<hr/>					
TOTAL		14	1	15	10.9 (15/29)
Northeast	(Vuvulane scheme in 1992)	1		1	??

**Table 9 Farmers Hiring Labour as of the Start of the Winter
Production Season, March 1993**

		Men	Women	Total	
		N	N	N	% of total farmers in the category
<hr/>					
<u>Area</u>					
North	(7 schemes)	14	2	16	16.5
Central	(1 scheme)	0	2	2	16.7
	(individual SNL/TDL)	3	1	4	40.0
Southeast	(individual SNL/TDL)	10	0	10	52.6
<hr/>					
TOTAL		27	5	32	23.2 (32/138)

**Table 10 Farmers Obtaining Credit as a Result of CAPM
as of the Start of the Winter Production Season, March 1993**

		Men	Women	Total	
		N	N	N	% of total farmers category
<hr/>					
<u>Area</u>					
Northeast	(Vuvulane scheme, 1992)	1		1	??
Southeast	(individual SNL/TDL)	10		10	52.6 (10/19)
<hr/>					
TOTAL		11		11	??

Table 11: Total Available Irrigated Land Vs. Area Programmed and Area Planted - Winter 1993

Location	TOTAL Available Irrigated Land	TOMATO				PEPPER				SWEETCORN				Actual % of Total Ha		
		Prog. Ha		Actual Ha		Prog. Ha		Actual Ha		Prog. Ha		Actual Ha		M	W	T
North (7 schemes) data	Men = 46 Women = 18	M	W	M	W	NOT GROWN				NOT GROWN				49 63 51		
	43.2 ha 5.7 ha	27.2	4.6	21.2	3.6											
	23 missing 11 missing															
Central (1 scheme) data	Men = 2 Women = 6	NOT GROWN				M	W	M	W	M	W	M	W	31 22 24		
	0.8 ha 2.8 ha					0.4	1.3	0.25	0.11	0	1.0	0	0.5			
	2 missing 2 missing															
Individual SNL data	Men = 12 Women = 0	M	W	M	W	M	W	M	W	NOT GROWN				44 0 44		
	48 ha	22.6	0	12.4	0	11.2	0	8.7	0							
	9 missing															
TDL data	Men = 4 Women = 1	M	W	M	W	M	W	M	W	M	W	M	W	9 4 7		
	86 ha 35 ha	3	0	2.5	0	5.0	0.8	3.1	1.1	6.2	0.9	1.9	0.3			
	2 missing															

Table 12: Total Available Irrigated Land Vs. Area Programmed and Area Planted - Winter 1993

Location	TOTAL Available Irrigated Land	ALL CAPM CROPS									
		PROGRAMMED				ACTUAL PLANTINGS					
		Prog. Ha	% of Total	Prog. Ha	% of Total	Actual Ha	% of Prog.	% of Total	Actual Ha	% of Prog.	% of Total
North (7 schemes) data	Men = 46 Women = 18	Men		Women		Men			Women		
	43.2 ha 5.7 ha	27.2	63	4.6	63	21.2	78	49	3.6	78	63
	23 missing 11 missing										
Central (1 scheme) data	Men = 2 Women = 6	Men		Women		Men			Women		
	0.8 ha 2.8 ha	0.4	50	2.3	82	.25	63	31	.61	27*	22*
	2 missing 2 missing										
Individual SNL data	Men = 12 Women = 0	Men		Women		Men			Women		
	48 ha	33.8	70	0	0	21.1	62	44	0	0	0
	9 missing										
TDL data	Men = 4 Women = 1	Men		Women		Men			Women		
	86 ha 35 ha	14.2	16.5	1.7	5	7.5	53	9	1.4	83	4
	2 missing										

Table 13 : Baseline and Current Hectarage, Yields and Income for Fresh Market and Nema 1400 Tomatoes by Type of Farmer

	BASELINE		WINTER '92		SUMMER '92		WINTER '93*	
	Scheme: Fresh Market Men = 28 Women = 15		Scheme: Fresh Market Men = 48 Women = 12		Scheme: Fresh Market Men = 9 Women = 0		Scheme: Fresh Market Men = 79* Women = 32*	
Total Ha	13.7	2.8	17.2	4.2	2.81	25.1	5.1	
Est. Yield/ Ha	12 MT	12 MT	12 MT	12 MT	14 MT	18 MT	18 MT	
Total Yield	164.4 MT	33.5 MT	206.4 MT	50.4 MT	39.3 MT	451.8 MT	91.8 MT	
Total Income	E 49,813	E 10,144	E 62,539	E 15,271	E 11,908	E 136,895	E 27,815	
Average Income	E 1,780	E 676	E 1,303	E 1,273	E 1,323	E 1,733	E 869	
	Non-Scheme: Fresh Market Men = 3 Women = 0		Non-Scheme: Fresh Market Men = 9 Women = 0		Non-Scheme: Fresh Market Men = 9 Women = 0		Non-Scheme: Nema 1400 Men = 20* Women = 0	
Total Ha	2.0		11.9		7.8	16.5		
Est. Yield/ Ha	15 MT		15 MT		15 MT	20 MT		
Total Yield	30.0 MT		178.5 MT		117 MT	320.0 MT		
Total Income	E 9,090		E 54,085		E 35,451	E 96,960		
Average Income	E 3,030		E 6,009		E 3,939	E 4,848		
	TDL: Fresh Market Men = 1 Women = 1		TDL: Fresh Market Men = 3 Women = 0		TDL: Fresh Market Men = 1 Women = 1		TDL: Nema 1400 Men = 1* Women = 1	
Total Ha	0.25	0.8	4.4		0.1	2.0	Not	
Est. Yield/ Ha	15 MT	15 MT	13 MT		13 MT	20 MT	Growing	
Total Yield	3.8 MT	12.0 MT	57.3 MT		1.3 MT	40.0 MT	Tomatoes	
Total Income	E 1,136	E 3,636	E 17,362		E 394	E 12,120		
Average Income	E 1,136	E 3,636	E 5,787		E 394	E 12,120		

* There is yet another planting for most of these farmers

Table 14 : Hectarage, Yields and Income for GreenPeppers: Winter '92, Summer '92 and Winter '93

	WINTER '92		SUMMER '92		WINTER '93*	
	Scheme Men = 13	Women = 7	Scheme Men = 0	Women = 0	Scheme Men = 5 *	Women = 2 *
Total Ha	2.72	0.64			1.4	0.21
Est. Yield / Ha	8 MT	8 MT			12 MT	12 MT
Total Yield	21.8 MT	5.1 MT			16.8 MT	2.5 MT
Total Income	E 17,745	E 4,151			E 13,675.2	E 2,035
Average Income	E 1,365	E 593			E 2,735	E 1,017
	Non-Scheme Men = 10	Women = 0	Non-Scheme Men = 9	Women = 0	Non-Scheme Men = 15 *	Women = 0
Total Ha	6.68		3.18		11.55	
Est. Yield / Ha	10 MT		12 MT		12 MT	
Total Yield	66.8 MT		38.2 MT		138.6 MT	
Total Income	E 54,375		E 31,094		E 112,820	
Average Income	E 5,437		E 3,455		E 7,521	
	TDL Men = 2	Women = 0	TDL Men = 0	Women = 1	TDL Men = 5 *	Women = 1 *
Total Ha	1.2			0.16	7.2	1
Est. Yield / Ha	10 MT			10 MT	12 MT	12 MT
Total Yield	12 MT			1.6 MT	86.4 MT	12 MT
Total Income	E 9,768			E 1,302	E 70,329	E 9,768
Average Income	E 4,884			E 1,302	E 14,065	E 9,768

*There is another planting for most of these farmers.

Table 15 : Hectarage, Yields and Income for Sweetcorn: Baseline, Winter '92, Summer '92 and Winter '93

	BASELINE		WINTER '92/SUMMER '92		WINTER '93*	
	Scheme Men = 0 Women = 1		Scheme		Scheme* Men = 2 Women = 4	
Total Ha	0.06		NO SWEETCORN GROWN		0.3	0.5
Est. Yield/Ha	2.6 MT				3.6 MT	3.6 MT
Total Yield	0.16 MT				1.1 MT	1.8 MT
Total Income	E 461				E 3,170	E 5,188
Average Income	E 461				E 1,585	E 1,297
	Non-Scheme Men = 0 Women = 0		Non-Scheme		Non-Scheme	
Total Ha			NO SWEETCORN GROWN		NO SWEETCORN GROWN	
Est. Yield/Ha						
Total Yield						
Total Income						
Average Income						
	TDL Men = 0 Women = 0		TDL		TDL* Men = 3 Women = 1	
Total Ha			NO SWEETCORN GROWN		3.6	0.3
Est. Yield/Ha					3.6 MT	3.6 MT
Total Yield					13 MT	1.1 MT
Total Income					E 37,466	E 3,170
Average Income					E 12,489	E 3,170

*There is another planting for most of these farmers.

UPDATED ECONOMIC ANALYSIS

I. Introduction

An economic analysis was conducted to assess the costs (total outlays) and benefits (value of output) for the economy of Swaziland from the CAPM project from March 1, 1994 to September 30, 1996. The value of output and the outlays were projected for a twelve-year period. The basic assumptions for the economic analysis are consistent with findings in the technical, financial, and social analyses.

Crop budgets for the four winter crops and four potential summer crops formed the basis for calculating total production and outlays by participating farmers (Appendix Tables FA-1 to FA-8). With the assistance of the technical assistance contractor team for the CAPM project, projections of the number of participating farmers, the total area planted, costs of production, yields per hectare, and prices for the produce were made for the twelve-year period for each of the crops (Appendix Tables EA-1 to EA-8).

The four winter crops of concentration under CAPM are fresh table tomatoes, sweet peppers, sweet corn, and Nema 1400 (processing) tomatoes. The four summer crops described in the technical analysis as being potentially profitable for production by small farmers are green beans, potatoes, onions, and cabbage.

The total area planted to the four winter crops by participating farmers was assumed to achieve a maximum of 200 hectares by the year 2002 (Table E-1). That is approximately 70 percent of the actively irrigated hectareage of irrigation schemes that meet project criteria, and 47 percent of the potentially irrigated areas of irrigation schemes. Since disease and insect hazards make the production of summer vegetables more difficult, and since many small farmers prefer to grow the more traditional crops such as maize during the summer, it was projected that a maximum of 130 hectares of summer vegetables would be grown by participating farmers.

Table E-1
Projected Area Planted to CAPM Crops

Year	<u>Winter Crops</u>	<u>Summer Crops</u>
	-----hectares-----	
1994	110	45
1995	140	85
1996	163	105
2002	200	130
	1	

Total Outlays

Table E-2

Fiscal Year	USAID	GOS	Firms	Postharvest Costs	Farm Prod'n	Mktg Fees	Total
-----thousand emalangeni-----							
1994		51	115	627	355	266	1415
1995		88	275	1056	609	445	2474
1996		88	275	1400	818	591	3172
1997			275	1673	987	697	3633
1998			275	1788	1052	749	3863
1999			275	1808	1064	759	3906
2000			275	1828	1075	769	3948
2001			275	1849	1087	779	3990
2002			275	1861	1094	786	4016
2003			275	1861	1094	786	4016
2004			275	1861	1094	786	4016
2005			275	1861	1094	786	4016

thousand US dollars

1994	903	17	38	209	118	89	1375
1995	1355	29	92	352	203	148	2180
1996	1004	29	92	467	273	197	2061
1997		0	92	558	329	232	1211
1998		0	92	596	351	250	1288
1999		0	92	603	355	253	1302
2000		0	92	609	358	256	1316
2001		0	92	616	362	260	1330
2002		0	92	620	365	262	1339
2003		0	92	620	365	262	1339
2004		0	92	620	365	262	1339
2005		0	92	620	365	262	1339

Exchange rate assumed: 3.00 emalangeni = US\$1.00

Value of Output

Local Sales	Regional Exports		Total	Total	Value Added	Net Benefit		
	Local %	Export %						
-----thousand emalangeni-----								
-----thousand dollars---								
1994	532	0.2	2129	0.8	2,661	887	697	-678
1995	890	0.2	3559	0.8	4,449	1,483	1,166	-1014
1996	1183	0.2	4730	0.8	5,913	1,971	1,549	-512
1997	1395	0.2	5579	0.8	6,974	2,325	1,827	616
1998	1497	0.2	5989	0.8	7,487	2,496	1,962	674
1999	1518	0.2	6071	0.8	7,588	2,529	1,988	686
2000	1538	0.2	6152	0.8	7,690	2,563	2,015	699
2001	1558	0.2	6233	0.8	7,791	2,597	2,041	711
2002	1571	0.2	6286	0.8	7,857	2,619	2,059	720
2003	1571	0.2	6286	0.8	7,857	2,619	2,059	720
2004	1571	0.2	6286	0.8	7,857	2,619	2,059	720
2005	1571	0.2	6286	0.8	7,857	2,619	2,059	720

II. Benefits

The calculated gross revenues for each of the four winter crops and two potential summer crops were added to obtain the total value of output shown in Table E-2, in emalangeni. It was projected that 20 percent of the output would be sold locally and 80 percent would be exported regionally. The total value of output was converted from emalangeni to U.S. dollars using an exchange rate of E3.00 to \$1.00. The total value of output in dollars was discounted to obtain the "value added" as a result of the project by using the same factor that was used in the 1991 PPA Economic Analysis, 78.6%. Thus, value added represents the gross benefit of the project.

III. Outlays

Outlays were then subtracted from value added to obtain the net benefit stream on which to calculate the internal rate of return for the project. Total outlays for the project include the USAID allocation for the technical assistance, Government of Swaziland expenditures on agricultural extension related to the project, estimated investments by the agribusiness firms closely related to CAPM, and the investments and expenditures by participating farmers, including production costs, postharvest costs, and marketing fees.

IV. Internal Rate of Return

The internal rate of return (IRR), using the "most likely scenario," or the expected costs and benefits, is 20%. While this is substantially lower than the 50% IRR estimated at the time the project was redirected and the 1991 PPA was written, it is an acceptable rate for a technical assistance project. Furthermore, it is based on the experience of the past year and a half, which provides a much better basis for making projections.

V. Sensitivity Analyses

Sensitivity analyses were carried out to determine the effects of alternative sets of yields, costs, and prices of product. The rate of return is quite sensitive to changes in prices of product; it is less sensitive to costs of production and yields. Table E-3 summarizes the rates of return for alternative sets of yields, costs, and prices.

Table E-3.
Internal Rates of Return Under Alternative
Sets of Yields, Costs, and Prices of Product

	<u>IRR</u>
10% increase in yields	24%
10% decrease in yields	16%
20% decrease in yields	12%
20% lower prices	2%
10% lower prices	11%
10% higher prices	29%
10% higher production costs	18%
10% lower production costs	22%

Crop: Sweet Pepper

Table EA-1

Fiscal Year	Total Projected			Price (E)	Gross Revenue (E)
	Area (hectares)	Yield (MT/ha)	Production (MT)		
1994	45	12	540	1818	981720
1995	60	14	840	1818	1527120
1996	70	15	1050	1818	1908900
1997	75	15	1125	1818	2045250
1998	80	15	1200	1818	2181600
1999	80	15	1200	1818	2181600
2000	80	15	1200	1818	2181600
2001	80	15	1200	1818	2181600
2002	80	15	1200	1818	2181600
2003	80	15	1200	1818	2181600
2004	80	15	1200	1818	2181600
2005	80	15	1200	1818	2181600

Crop: Sweet Corn

Table EA-2

Fiscal Year	Total Projected			Price (E)	Gross Revenue (E)
	Area (hectares)	Yield (MT/ha)	Production (MT)		
1994	5	5	25	4440	111000
1995	8	6	48	4440	213120
1996	9	7	63	4440	279720
1997	10	7	70	4440	310800
1998	11	7	77	4440	341880
1999	12	7	84	4440	372960
2000	13	7	91	4440	404040
2001	14	7	98	4440	435120
2002	15	7	105	4440	466200
2003	15	7	105	4440	466200
2004	15	7	105	4440	466200
2005	15	7	105	4440	466200

Crop: Tomatoes

Table EA-3

Fiscal Year	Total Projected			Price (E)	Gross Revenue (E)
	Area (hectares)	Yield (MT/ha)	Production (MT)		
1994	30	14	420	1166	489720
1995	40	17	680	1166	792880
1996	50	20	1000	1166	1166000
1997	55	20	1100	1166	1282600
1998	60	20	1200	1166	1399200
1999	60	20	1200	1166	1399200
2000	60	20	1200	1166	1399200
2001	60	20	1200	1166	1399200
2002	60	20	1200	1166	1399200
2003	60	20	1200	1166	1399200
2004	60	20	1200	1166	1399200
2005	60	20	1200	1166	1399200

Crop: Nema 1400 Tomatoes

Table EA-4

Fiscal Year	Total Projected			Price (E)	Gross Revenue (E)
	Area (hectares)	Yield (MT/ha)	Production (MT)		
1994	30	20	600	880	528000
1995	32	25	800	880	704000
1996	34	30	1020	880	897600
1997	36	35	1260	880	1108800
1998	38	40	1520	880	1337600
1999	40	40	1600	880	1408000
2000	42	40	1680	880	1478400
2001	44	40	1760	880	1548800
2002	45	40	1800	880	1584000
2003	45	40	1800	880	1584000
2004	45	40	1800	880	1584000
2005	45	40	1800	880	1584000

Crop: Green Beans

Table EA-5

Fiscal Year	Total Projected			Price (E)	Gross Revenue (E)
	Area (hectares)	Yield (MT/ha)	Production (MT)		
1994	10	4	40	2360	94400
1995	20	5	100	2360	236000
1996	25	6	150	2360	354000
1997	30	6	180	2360	424800
1998	30	6	180	2360	424800
1999	30	6	180	2360	424800
2000	30	6	180	2360	424800
2001	30	6	180	2360	424800
2002	30	6	180	2360	424800
2003	30	6	180	2360	424800
2004	30	6	180	2360	424800
2005	30	6	180	2360	424800

Crop: Potatoes

Table EA-6

Fiscal Year	Total Projected			Price (E)	Gross Revenue (E)
	Area (hectares)	Yield (MT/ha)	Production (MT)		
1994	15	20	300	880	264000
1995	25	24	600	880	528000
1996	30	26	780	880	686400
1997	40	28	1120	880	985600
1998	40	28	1120	880	985600
1999	40	28	1120	880	985600
2000	40	28	1120	880	985600
2001	40	28	1120	880	985600
2002	40	28	1120	880	985600
2003	40	28	1120	880	985600
2004	40	28	1120	880	985600
2005	40	28	1120	880	985600

Crop: Cabbage

Table EA-7

Fiscal Year	Total Projected			Price (E)	Gross Revenue (E)
	Area (hectares)	Yield (MT/ha)	Production (MT)		
1994	10	20	200	320	64000
1995	20	25	500	320	160000
1996	25	30	750	320	240000
1997	30	35	1050	320	336000
1998	30	35	1050	320	336000
1999	30	35	1050	320	336000
2000	30	35	1050	320	336000
2001	30	35	1050	320	336000
2002	30	35	1050	320	336000
2003	30	35	1050	320	336000
2004	30	35	1050	320	336000
2005	30	35	1050	320	336000

Crop: Onions

Table EA-8

Fiscal Year	Total Projected			Price (E)	Gross Revenue (E)
	Area (hectares)	Yield (MT/ha)	Production (MT)		
1994	10	16	160	800	128000
1995	20	18	360	800	288000
1996	25	19	475	800	380000
1997	30	20	600	800	480000
1998	30	20	600	800	480000
1999	30	20	600	800	480000
2000	30	20	600	800	480000
2001	30	20	600	800	480000
2002	30	20	600	800	480000
2003	30	20	600	800	480000
2004	30	20	600	800	480000
2005	30	20	600	800	480000

UPDATED FINANCIAL ANALYSIS

The financial analysis consists of two parts: (a) analysis of costs and returns to farmers from the crops on which the project is focused, and (b) analysis of the financial feasibility of the proposed Marketing Firm, viewed from the standpoint of both the firm and small farmers and their organizations.

I. Costs and Returns to Farmers from Selected Crops

The technical analysis identifies the following crops as appearing to merit the focused attention of CAPM:

<u>Winter Crops</u>	<u>Summer Crops</u>
Tomatoes	Potatoes
Sweet Pepper	Onions
Sweet Corn	Cabbage
Nema 1400 (process) Tomatoes	Green Beans
	Squash, Butternut

Insufficient data were available on which to analyze butternut squash. Following is a summary of the estimated costs and returns to farmers from production of the other eight crops.

Table F-1
Estimated Returns to Farmers From Selected Crops

Crop	Estimated Yield (MT/Ha)	Farmer Price (E/MT)	Gross Returns (E/Ha)	Farmer's Production & Postharvest Cost (E/Ha)	Net Returns (E/Ha)
Winter					
Tomatoes	20	550	11,000	3,388	7,612
Sweet Pepper	15	800	12,000	3,131	8,869
Sweet Corn	7	1,800	12,600	2,533	10,067
Nema Tomatoes	30	560	16,800	3,532	13,268
Summer					
Potatoes	35	460	16,100	5,514	10,586
Onions	20	450	9,000	2,528	6,472
Cabbage	35	150	5,250	3,446	1,804
Green Beans	6	600	3,600	1,802	1,798

Data for Table F-1 were abstracted from Appendix Tables FA-1 to FA-8. Data for Appendix Tables FA-1 to FA-8 were taken from CAPM work sheets for each crop, which are based on project experience, plus discussions with CAPM team members who are knowledgeable about costs and returns for various crops. The CAPM work sheets are attached as Appendix Tables FA-9 to FA-15.

While costs are reasonably stable, prices for the produce fluctuate during the season. The prices are believed to be close to the average prices experienced by farmers.

II. Feasibility of the Proposed Marketing Firm

A. Estimated Benefits to the Marketing Firm's Services

An analysis was carried out for each of the crops to estimate the financial benefits to small farmers and the Marketing Firm from the services provided by the Marketing Firm to farmers and their organizations. Table F-2 provides a summary of the analysis.

Table F-2
Estimated Benefits to Marketing Firm's Services

Crop	Traders' Gross Margins (E/MT)	1996 Projected Production (MT)	Total Benefit (E)
Winter			
Tomatoes	367	1,000	367,000
Sweet Pepper	313	1,050	328,650
Sweet Corn	1,526	63	96,138
Nema Tomatoes	110	1,020	112,200
Summer			
Potatoes	133	780	103,740
Onions	110	475	52,250
Cabbage	19	750	14,250
Green Beans	894	150	134,100
Total Benefit			1,208,328

Appendix Tables FA-1 through FA-8 provide as the bottom line for each of the crops, under the system of marketing that currently exists, the estimated "Gross Margin to Traders," such as hawkers, vendors, Indian traders, and firms trading on the NAMBoard market. The figure, Gross Margin to Traders, was arrived at by starting with the estimated gross price received by the traders at wholesale

and subtracting out: (a) the costs of postharvest transport, handling, and packaging that are normally paid by the traders, (b) the fees and commissions paid by traders, and (c) the amount paid to farmers by the traders. The resulting Gross Margin to Traders represents a profit for which few, if any, services were provided directly to the producers.

The Gross Margin to Traders was taken from Tables FA-1 to FA-8 and entered in the first column of Table F-2 for each of the crops of focus for CAPM. Data for the second column in Table F-2, 1996 Projected Production, were taken from Tables EA-1 to EA-8 for each of the crops. The year 1996 was used because that is the year the CAPM project is anticipated to end. The year 1996 was used, to be conservative, even though production after 1996 is projected to continue to increase for at least some time.

The final column in Table F-2 is the result of multiplying the first two columns to obtain for each crop the estimated benefits that would accrue from services provided by the proposed Marketing Firm. The total of the last column, E1,208,328, is the amount that would be available to cover the Marketing Firm's operating costs and to share between the Firm and its small farmer clientele.

B. Estimated Operating Costs for the Marketing Firm

A 36-month cash flow calculated for the Marketing Firm indicates that the Firm's operating costs will be approximately \$10,000 per month, which translates to E33,000 per month or E396,000 per year.

C. Estimated Benefits to Be Shared

The mutual benefits to the Firm and the small farmer clients would be E812,328, or slightly more than \$240,000:

Total benefits	E1,208,328
Less operating costs of Firm	396,000
	<hr/>
Benefits to be shared	E 812,328

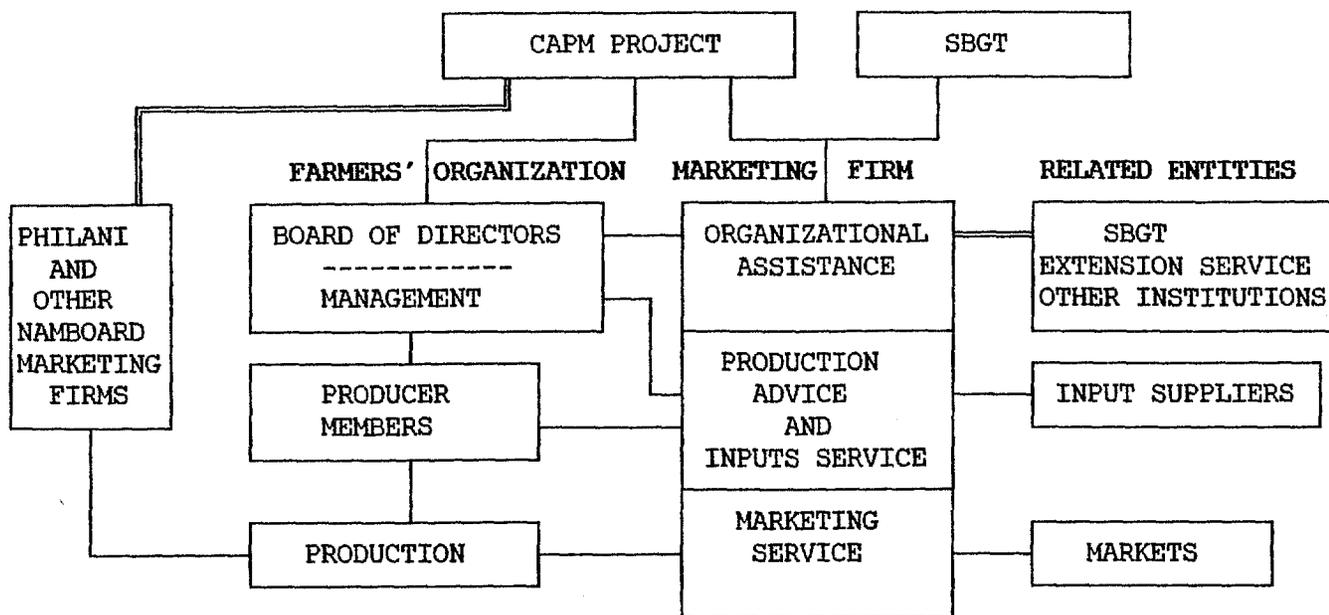
In calculating the cash flow, it was assumed that one small farmers' organization would be formed at the beginning of each year during the initial three years. To be conservative, it was assumed that the Marketing Firm would only market for and share benefits with farmers who were organized. Thus, it would be month 25, during the final year of the CAPM project, before the full amount of benefits would be realized. Further, it was assumed that only two-thirds of the benefits indicated in Table F-2 would be realized by the Marketing Firm and the small farmer clients.

In round numbers, the calculation is as shown in Table F-3.

Table F-3
Illustrative Sharing of the Benefits

	Year 1	Year 2	Year 3
	-----thousand dollars-----		
Benefits (at 2/3 of total projected):			
Organization # 1	80	80	80
Organization # 2		80	80
Organization # 3			80
Total	80	160	240
=====			
To Firm for Operating Costs:			
Organization # 1	40	40	40
Organization # 2		40	40
Organization # 3			40
Total	40	80	120
=====			
Amount to be shared:			
Organization # 1	40	40	40
Organization # 2		40	40
Organization # 3			40
Total	40	80	120
=====			
Total Income to the Firm:			
Organization # 1	60	60	60
Organization # 2		60	60
Organization # 3			60
Total	60	120	180
=====			
Total Benefits to Farmers			
Organization # 1	20	20	20
Organization # 2		20	20
Organization # 3			20
Total	20	40	60

ANNEX OA-2
GENERAL RELATIONSHIP OF PARTICIPANTS IN PROJECT ACTIVITIES



————— Direct influence
 = = = = = Advisory or service activity

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The way in which the benefits would be shared between the Marketing Firm and its small farmer clients would have to be negotiated. For purposes of this analysis, it was assumed that the Firm and the farmers would share equally after the Firm's operating costs were covered. It was further assumed that one-third of the Firm's operating costs would be covered during the first year, when the Firm was working with one organization, two-thirds would be covered the second year, in working with two organizations, and the full cost of operating the Firm would be covered the third year prior to sharing the remaining benefits.

These projections indicate that small farmers' incomes can be enhanced if farmers' organizations, on behalf of their members, contract with such a Marketing Firm to manage the marketing of their products. At the same time, the Marketing Firm should make good returns for their efforts beginning the third year.

D. Financial Implications for Start-up of the Firm

The cash flow indicates that it would take about \$75,000 to get the Firm launched -- say, \$50,000 equity and \$25,000 debt. By the end of the third year, the debt would be paid off and the Firm would have accumulated about \$30,000 in cash reserves.

Crop: Tomato

Table FA-1

Farmers' Costs of Production/HA		
Seed/Seedlings		490
Fertilizer		714
Chemicals		1,248
Labor		661
Labor, Production		
Labor, Harvesting		
Mechanical Operations		252
Sub-total		3,365
Farmers' Postharvest Costs/Ha		
Transport to Collection Point		23
Other Transport		
Sorting/Packing		
Sub-total		23
Yields (MT/Ha)		20
Farmers' Production Cost/MT		168
Farmers' Postharvest Cost/MT		1
Price Farmers Receive from Traders (MT)		550
Gross Returns to Farmers/Ha		11,000
Net Returns to Farmers/Ha		7,612
Traders' Postharvest Costs/MT		
Transport		
Collection from Farmgate		
Local Transport		0
Regional Transport		220
Packing		0
Box or Lug		0
Grading		
Overhead		0
Sub-total		220
Price Received by Traders @ Wholesale (MT)		1,166
Gross Receipts for 20 MT		23,320
Less NAMBoard Commission @	2.50 %	583
Less Regional Mkt Commission @	0.00 %	0
Less Amount Paid to Farmers		11,000
Gross Margin to Traders (per Ha)		7,337
Gross Margin to Traders (per MT)		367

Crop: Sweet Peppers

Table FA-2

Farmers' Costs of Production/HA		
Seed/Seedlings		889
Fertilizer		714
Chemicals		659
Labor		470
Labor, Production		
Labor, Harvesting		
Mechanical Operations		252
Sub-total		2,984
Farmers' Postharvest Costs/Ha		
Transport to Collection Point		36
Other Transport		
Sorting/Packing		111
Sub-total		147
Yields (MT/Ha)		15
Farmers' Production Cost/MT		199
Farmers' Postharvest Cost/MT		10
Price Farmers Receive from Traders (MT)		800
Gross Returns to Farmers/Ha		12,000
Net Returns to Farmers/Ha		8,869
Traders' Postharvest Costs/MT		
Transport		
Collection from Farmgate		
Local Transport		
Regional Transport		200
Packing		242
Box or Lug		
Grading		
Overhead		
Sub-total		442
Price Received by Traders @ Wholesale (MT)		1,818
Gross Receipts for 15 MT		27,270
Less NAMBoard Commission @ 2.50 %		682
Less Regional Mkt Commission @ 12.00 %		3,272
Less Amount Paid to Farmers		12,000
Gross Margin to Traders (per Ha)		4,691
Gross Margin to Traders (per MT)		313

Crop: Sweet Corn

Table FA-3

Farmers' Costs of Production/HA		
Seed/Seedlings		800
Fertilizer		714
Chemicals		449
Labor		370
Labor, Production		
Labor, Harvesting		
Mechanical Operations		0
Sub-total		2,333
Farmers' Postharvest Costs/Ha		
Transport to Collection Point		200
Other Transport		
Sorting/Packing		
Sub-total		200
Yields (MT/Ha)		7
Farmers' Production Cost/MT		333
Farmers' Postharvest Cost/MT		29
Price Farmers Receive from Traders (MT)		1,800
Gross Returns to Farmers/Ha		12,600
Net Returns to Farmers/Ha		10,067
Traders' Postharvest Costs/MT		
Transport		
Collection from Farmgate		
Local Transport		240
Regional Transport		
Packing		0
Box or Lug		180
Grading		
Overhead		50
Sub-total		470
Price Received by Traders @ Wholesale (MT)		4,440
Gross Receipts for 7 MT		31,080
Less NAMBoard Commission @ 2.50 %		777
Less Regional Mkt Commission @ 12.00 %		3,730
Less Amount Paid to Farmers		12,600
Gross Margin to Traders (per Ha)		10,683
Gross Margin to Traders (per MT)		1,526

Crop: Nema 1400 Tomato

Table FA-4

Farmers' Costs of Production/HA		
Seed/Seedlings		773
Fertilizer		714
Chemicals		1,248
Labor		545
Labor, Production		
Labor, Harvesting		
Mechanical Operations		252
Sub-total		3,532
Farmers' Postharvest Costs/Ha		
Transport to Collection Point		
Other Transport		
Sorting/Packing		
Sub-total		0
Yields (MT/Ha)		30
Farmers' Production Cost/MT		118
Farmers' Postharvest Cost/MT		0
Price Farmers Receive from Traders (MT)		560
Gross Returns to Farmers/Ha		16,800
Net Returns to Farmers/Ha		13,268
Traders' Postharvest Costs/MT		
Transport		
Collection from Farmgate		
Local Transport		0
Regional Transport		200
Packing		11
Box or Lug		
Grading		
Overhead		
Sub-total		211
Price Received by Traders @ Wholesale (MT)		880
Gross Receipts for 30 MT		26,400
Less NAMBoard Commission @ 0.00 %		0
Less Regional Mkt Commission @ 0.00 %		0
Less Amount Paid to Farmers		16,800
Gross Margin to Traders (per Ha)		3,285
Gross Margin to Traders (per MT)		110

Crop: Potato

Table FA-5

Farmers' Costs of Production/HA		
Seed/Seedlings		2,574
Fertilizer		834
Chemicals		1,409
Labor		345
Labor, Production		
Labor, Harvesting		
Mechanical Operations		252
Sub-total		5,414
Farmers' Postharvest Costs/Ha		
Transport to Collection Point		100
Other Transport		
Sorting/Packing		
Sub-total		100
Yields (MT/Ha)		35
Farmers' Production Cost/MT		155
Farmers' Postharvest Cost/MT		3
Price Farmers Receive from Traders (MT)		460
Gross Returns to Farmers/Ha		16,100
Net Returns to Farmers/Ha		10,586
Traders' Postharvest Costs/MT		
Transport		243
Collection from Farmgate		
Local Transport		0
Regional Transport		0
Packing		0
Box or Lug		
Grading		
Overhead		0
Sub-total		243
Price Received by Traders @ Wholesale (MT)		880
Gross Receipts for 35 MT		30,800
Less NAMBoard Commission @ 5.00 %		1,540
Less Regional Mkt Commission @ 0.00 %		0
Less Amount Paid to Farmers		16,100
Gross Margin to Traders (per Ha)		4,655
Gross Margin to Traders (per MT)		133

Crop: Onion

Table FA-6

Farmers' Costs of Production/HA		
Seed/Seedlings		350
Fertilizer		714
Chemicals		522
Labor		690
Labor, Production		
Labor, Harvesting		
Mechanical Operations		252
Sub-total		2,528
Farmers' Postharvest Costs/Ha		
Transport to Collection Point		
Other Transport		
Sorting/Packing		
Sub-total		0
Yields (MT/Ha)		20
Farmers' Production Cost/MT		126
Farmers' Postharvest Cost/MT		0
Price Farmers Receive from Traders (MT)		450
Gross Returns to Farmers/Ha		9,000
Net Returns to Farmers/Ha		6,472
Traders' Postharvest Costs/MT		
Transport		
Collection from Farmgate		
Local Transport		100
Regional Transport		0
Packing		70
Box or Lug		
Grading		
Overhead		30
Sub-total		200
Price Received by Traders @ Wholesale (MT)		800
Gross Receipts for 20 MT		16,000
Less NAMBoard Commission @ 5.00 %		800
Less Regional Mkt Commission @ 0.00 %		0
Less Amount Paid to Farmers		9,000
Gross Margin to Traders (per Ha)		2,200
Gross Margin to Traders (per MT)		110

Crop: Cabbage

Table FA-7

Farmers' Costs of Production/HA		
Seed/Seedlings		1,332
Fertilizer		834
Chemicals		638
Labor		390
Labor, Production		
Labor, Harvesting		
Mechanical Operations		252
Sub-total		3,446
Farmers' Postharvest Costs/Ha		
Transport to Collection Point		
Other Transport		
Sorting/Packing		
Sub-total		0
Yields (MT/Ha)		35
Farmers' Production Cost/MT		98
Farmers' Postharvest Cost/MT		0
Price Farmers Receive from Traders (MT)		150
Gross Returns to Farmers/Ha		5,250
Net Returns to Farmers/Ha		1,804
Traders' Postharvest Costs/MT		
Transport		
Collection from Farmgate		
Local Transport		100
Regional Transport		0
Packing		30
Box or Lug		
Grading		
Overhead		5
Sub-total		135
Price Received by Traders @ Wholesale (MT)		320
Gross Receipts for 35 MT		11,200
Less NAMBoard Commission @ 5.00 %		560
Less Regional Mkt Commission @ 0.00 %		0
Less Amount Paid to Farmers		5,250
Gross Margin to Traders (per Ha)		665
Gross Margin to Traders (per MT)		19

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Crop: Green Beans

Table FA-8

Farmers' Costs of Production/HA		
Seed/Seedlings		180
Fertilizer		439
Chemicals		420
Labor		451
Labor, Production		
Labor, Harvesting		
Mechanical Operations		312
Sub-total		1,802
Farmers' Postharvest Costs/Ha		
Transport to Collection Point		
Other Transport		
Sorting/Packing		
Sub-total		0
Yields (MT/Ha)		6
Farmers' Production Cost/MT		300
Farmers' Postharvest Cost/MT		0
Price Farmers Receive from Traders (MT)		600
Gross Returns to Farmers/Ha		3,600
Net Returns to Farmers/Ha		1,798
Traders' Postharvest Costs/MT		
Transport		
Collection from Farmgate		
Local Transport		5
Regional Transport		220
Packing		240
Box or Lug		
Grading		
Overhead		
Sub-total		465
Price Received by Traders @ Wholesale (MT)		2,360
Gross Receipts for 6 MT		14,160
Less NAMBoard Commission @ 5.00 %		708
Less Regional Mkt Commission @ 12.00 %		1,699
Less Amount Paid to Farmers		3,600
Gross Margin to Traders (per Ha)		5,363
Gross Margin to Traders (per MT)		894

TOMATO (PER HECTARE)

NAME:

SEASON: Winter AREA: 1 ha
 CULTIVAR (Name): Floradade SEEDLING SOURCE ("Buy" or "Seedbed") Buy
 WATER(Elec, Diel, or None): None IRRIGATION(Furrow or Drip): Furrow
 SYSTEM (Trellis or Ground): Trellis WEED CONTROL ("Hand" or 'Sencor' or 'Lasso'): sencor
 YIELD POT. (Hi, Ave): Ave MARKET (CAPM, NAMB, OTHER): CAPM

E/MONTH

INPUTS/ha	UNIT	AMT.	E/UNIT	TOTAL (E)	E/MONTH			
					1	2	3	4
Tractor hire (land prep.)	hrs	5.6	45.00	252	252			
Seedlings	1000	13.4	36	482	482			
(Seed cost)	1000	14.7	0.53	8				
Fertiliser								
2-3-2(22)	kg	952	0.75	714	714			
LAN	kg	71	0.60	43		43		
Labour	p-da	3		0				
Planting (labour)	p-da	15		0				
Weed control								
Chemical	p-da	8		0				
Sencor		4	75	300	300			
Disease and Insect Control								
Bravo (2)	lt	16	28.00	448	90	134	134	90
Dithane M45 (3)	kg	0	16.00	0	0	0	0	0
copper oxychloride (5)	kg	5	14.90	75		22	22	22
Malathion 25 wp(2.5)	kg	0	9.35	0	0	0	0	0
Curacron (1.5)	lt	6	37	222		111	111	
Talstar (.4)	lt	0.8	200.00	160	32	64	64	
Labour	p-da	12		0				
Irrigation				0	0			
Water/pumping	hrs	180	0	0	0	0	0	0
Labour	p-da	15		0	0			
Optional								
Trellis poles	ea	2084	0.80	1667		1667		
Trellis string	roll	10	60.00	600		600		
Trellis labour	p-da	12		0		0		
Harvesting (labour)	p-da	67		0				
Total labour	p-da	132.2	5.00	661	165	145	165	178
TOTAL PRODUCTION COSTS				5632	2035	2787	497	290
Packaging	ea	1200		0				
Transport	t km	100	0.10	240			72	168
Commission (12.5%)			0.000	0			0	0
MARKETING COSTS				240	2035	2787	569	458
TOTAL COSTS				5872				
Yield/gross returns	tonne	24	550.00	13200			4620	8580
NET RETURNS/ha				7328				

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BELL PEPPER (PER HECTARE)

NAME:

SEASON: Winter

AREA:

CULTIVAR (Hybrid or OP): OP

SEEDLING SOURCE ("Buy" or "Seedbed") Buy

WATER(Elec, Diel or None): None

IRRIGATION(Furrow or Drip): Furrow

SYSTEM(Bare,Plastic,Grass): Bare

WEED CONTROL (Hand or if Chem-'Sencor' or 'Lasso'): Hand

YIELD POT. (Hi, Ave): Ave

INPUTS/ha	UNIT	AMT.	E/UNIT	TOTAL (E)	E/MONTH			
					1	2	3	4
Tractor hire (land prep.)	hrs	5.6	45.00	252	252			
Seedlings (Seed)	1000 kg	24.7 0.25	36.00 220.00	889	889			
Fertiliser								
2-3-2(22)	kg	952	0.75	714	714			
LAN	kg	71	0.60	43		43		
Labour	p-da	3		0				
Planting (labour)	p-da	15		0				
Weed control								
Hand	p-da	28		0				
-		0	0	0	0			
Disease and Insect Control								
Ridomil MZ (1)	kg	6	70.00	420	84	126	126	84
copper oxychloride (5)	kg	10	14.90	149		45	45	45
mercaptotion 25 wp(2.5)	kg	5	9.35	47	12	12	12	12
Kelthane 18.5wp (2)	kg	0	26.35	0		0	0	
Labour	p-da	12		0				
Irrigation				0	0			
Water/pumping	hrs	180	0	0	0	0	0	0
Labour	p-da	15		0	0			
Optional								
Plastic mulch	m	8333	0	0	0			
- Labour	p-da	0		0				
Harvesting (labour)	p-da	21		0				
Total labour	p-da	94	5.00	470	160	94	141	75
Total Prod. Costs				2984	2111	319	323	216
Packaging		2500	1.45	3625				
Transport	t km	100		0			0	0
Commission (12.5%)							0	0
Marketing Costs				3625				
Yield/gross returns	tonne	15	750.00	11250		6750	4500	
NET RETURNS/ha				4641				

TOMATO (PER HECTARE)

NAME:

SEASON: Winter

AREA:

1 ha

CULTIVAR (Name): Floradade

SEEDLING SOURCE ("Buy" or "Seedbed") Buy

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SWEET CORN (PER HECTARE)

SEASON: Summer AREA: 1 ha
 CULTIVAR (Name): Snowbelle IRRIGATION(Furrow or Drip): Furrow
 WATER(Elec, Diel, or None): None WEED CONTROL ("Hand" or 'Gesaprim' or 'Lasso'): Hand
 SYSTEM (): MARKET (CAPM, NAMB, OTHER): CAPM
 YIELD POT. (Hi, Ave): Ave

INPUTS/ha	UNIT	AMT.	E/UNIT	TOTAL (E)	E/MONTH			
					1	2	3	4
Tractor hire (land prep.)	hrs	5.6	0.00	0	0			
Seedlings (Seed)	kg	10	80.00	800				
Fertiliser								
2-3-2(22)	kg	952	0.75	714	714			
LAN	kg	71	0.60	43		43		
Labour	p-da	3	5.00	15				
Planting (labour)	p-da	6	5.00	30				
Weed control								
Hand	p-da	28	5.00	140				
-		0	0	0	0			
Disease and Insect Control								
carbofuran - 1X	kg	11	12.50	138				
Orthene 75wp - 1X	kg	2	65.00	130		130		
cypermethrin 20ec - 6X	lt	0.9	100.00	90		18	72	
cypermethrin-hi cis-6X	lt	0.25	150.00	38		38		
cypermethrin 20ec - 6X	lt	0.1	100.00	10	10			
Labour	p-da	12	5.00	60		12	48	
Irrigation								
Water/pumping	hrs	72	0	0	0	0	0	
Labour	p-da	15	5.00	75	26.25	22.5	26.25	
Optional								
Harvesting (labour)	p-da	10	5.00	50				
Total labour	p-da	74	0.00	0	0	0	0	0
TOT. PROD. COSTS				2332	750	263	146	0
Packaging	ea			0				
Transport	t km	100	0.00	0			0	
Commission (12.5%)			0.000	0			0	0
TOT. MARKETING COSTS				0	750	263	146	0
Yield/gross returns	cobs	28000	0.35	9800			9800	
NET RETURNS/ha				7468				

TABLE FA-12

TOMATO (PER HECTARE)

NAME:

SEASON: Winter AREA: 1 ha
 CULTIVAR (Name): Nema SEEDLING SOURCE ("Buy" or "Seedbed") Buy
 WATER(Elec, Diel, or None): None IRRIGATION(Furrow or Drip): Furrow
 SYSTEM (Trellis or Ground): Ground WEED CONTROL ("Hand" or 'Sencor' or 'Lasso'): sencor
 YIELD POT. (Hi, Ave): Ave MARKET (CAPM, NAMB, OTHER): CAPM

INPUTS/ha	UNIT	AMT.	E/UNIT	TOTAL (E)	E/MONTH			
					1	2	3	4
Tractor hire (land prep.)	hrs	5.6	45.00	252	252			
Seedlings	1000	13.4	36	482	482			
(Seed cost)	1000	14.7	19.75	291	291			
Fertiliser								
2-3-2(22)	kg	952	0.75	714	714			
LAN	kg	71	0.60	43		43		
Labour	p-da	3		0				
Planting (labour)	p-da	15		0				
Weed control								
Chemical	p-da	8		0				
Sencor		4	75	300	300			
Disease and Insect Control								
Bravo (2)	lt	16	28.00	448	90	134	134	90
Dithane M45 (3)	kg	0	16.00	0	0	0	0	0
copper oxychloride (5)	kg	5	14.90	75		22	26	26
Malathion 25 wp(2.5)	kg	0	9.35	0	0	0	0	0
Curacron (1.5)	lt	6	37	222		111	111	
Talstar (.4)	lt	0.8	200.00	160	32	64	64	
Labour	p-da	12		0				
Irrigation				0	0			
Water/pumping	hrs	180	0	0	0	0	0	0
Labour	p-da	15		0				
Optional								
Trellis poles	ea	0	0.80	0		0		
Trellis string	roll	0	60.00	0		0		
Trellis labour	p-da	0		0		0		
Harvesting (labour)	p-da	56		0				
Total labour	p-da	109	5.00	545	136	120	136	153
TOTAL PRODUCTION COSTS				3532	2297	494	472	268
Packaging	ea	1000		0				
Transport	t km	100	0.00	0			0	0
Commission (12.5%)			0.000	0			0	0
MARKETING COSTS				0	0	0	0	0
TOTAL COSTS				3532	2297	494	472	268
Yield/gross returns	tonne	20	600.00	12000			4200	7800
NET RETURNS/ha				8468	-2297	-2792	937	8468

1497

POTATO (PER HECTARE)

NAME:

SEASON: Summer

AREA: 1 ha

WATER(Elec, Diel, or None): None

IRRIGATION(Furrow or Drip): Furrow

SYSTEM (Trellis or Ground):

WEED CONTROL (Hand or if Chem-'Sencor' or 'Lasso'): Sencor

YIELD POT. (Hi, Ave): Hi

INPUTS/ha	UNIT	AMT.	E/UNIT	TOTAL (E)	E/MONTH			
					1	2	3	4
Tractor hire (land prep.)	hrs	5.6	45.00	252	252			
Seed tubers	bags	66	39.00	2574	2574			
Fertiliser								
2-3-2(22)	kg	1112	0.75	834	834			
LAN	kg	105	0.60	63		63		
Labour	p-da	3		0				
Planting (labour)	p-da	15		0				
Weed control								
Chemical	p-da	8		0				
Sencor		4	75	300	300			
Hilling	p-da	45						
Disease and Insect Control								
Bravo (2)	lt	12	28.00	336	67	101	101	67
Dithane M45 (3)	kg	18	16.00	288	58	86	86	58
Orthene (.5)	kg	2	14.90	30		9	9	9
mercaptotion 25 wp(2.5)	kg	5	9.35	47	12	12	12	12
Kelthane 18.5wp (2)	kg	4	26.35	105		53	53	
Talstar (.3)	lt	1.2	200.00	240	48	96	96	
Labour	p-da	28		0				
Irrigation				0	0			
Water/pumping	hrs	72	0	0	0	0	0	0
Labour	p-da	15			0			
Optional						0		
						0		
Harvesting (labour)	p-da	62		0				
Total labour	p-da	131	5.00	655	164	131	131	229
TOTAL PRODUCTION COSTS				5724	4308	551	488	375
Packaging		3E+05		0				
Transport	t km	100	0.10	343				343.28
Commission (12.5%)				2444				2444
TOTAL MARKETING COSTS				2787	4308	551	488	2818
Yield/gross returns	15 kg	2300	8.50	19550			6843	12708
NET RETURNS/ha				11039	-4308	-550.5	1496.2	11385

ONION GROSS MARGIN BUDGET- SUMMER

INPUTS/ha	UNITS	AMOUNT	UNIT COST (E)	VALUE (E)
Tractor hire (land prep. & plant)	hrs.	5.6	45.00	252.00
Seed, hybrid	kg	1	350.00	350.00
Seedling production	man-days	5		
Fertiliser				
2-3-2(22)	kg	952	0.75	714.00
LAN	kg	72	0.60	43.20
Labour	man-days	3		0.00
Planting (labour)	man-days	25		0.00
Weed control				
1. Hand	man-days	35		0.00
2. Chemical/ hand	kg			0.00
Labour	man-days			
Disease and Insect Control				
diazinon 27.5ec - 2X	l	2.4		0.00
mercaptotion 25wp - 10X	kg	20	9.35	187.00
mancozeb 80wp - 10X	kg	20	14.60	292.00
Labour	man-days	18		0.00
Irrigation (labour)	man-days	12.5		0.00
Harvesting (labour)	man-days	38		0.00
Total labour	man-days	136.5	7.00	955.50
SUBTOTAL				2793.70
Packaging	bag	2000	0.50	1000.00
Transport	t km	100	0.10	200.00
Commission (12.5%)				1875.00
TOTALS				5868.70
RETURNS				
Yield/gross returns	tonne	20	750.00	15000.00
NET RETURNS/ha				9131.30

TABLE FA-15

CABBAGE (PER HECTARE)							
NAME:							
SEASON: Summer				AREA: 1 ha			
CULTIVAR (Name): Hercules				SEEDLING SOURCE ("Buy" or "Seedbed"): Buy			
WATER (Elec, Diel, or None): None				IRRIGATION (Furrow or Drip):		Furrow	
SYSTEM ():				WEED CONTROL (Hand or if Chem-'Sencor' or 'Lasso'): Hand			
YIELD POT. (Hi, Ave): Hi							
				E/MONTH			
INPUTS/ha	UNIT	AMT.	E/UNIT	TOTAL (E)	1	2	3
Tractor hire (land prep.)	hrs	5.6	45.00	252	252		
Seedlings	1000	33.3	40.00	1332	1332		
(Seed)	kg	0.3	140.00				
Fertiliser							
2-3-2(22)	kg	1112	0.75	834	834		
LAN	kg	105	0.60	63		63	
Labour	p-da	3		0			
Planting (labour)	p-da	15		0			
Weed control							
Hand	p-da	28		0			
-		0	0	0	0		
Disease and Insect Control							
Bravo (2)	lt	0	28.00	0	0	0	0
Dithane M45 (3)	kg	12	16.00	192	48	86	58
copper oxychloride (5)	kg	20	14.90	298	75	134	89
mercaptotion 25 wp(2.5) kg		0	9.35	0	0	0	0
Diazinon	lt	0.24	45	11	5	5	
Curacron	lt	2	37.00	74		37	37
Labour	p-da	18		0			
Irrigation				0	0		
Water/pumping	hrs	72	0	0	0	0	0
Labour	p-da	14			0		
Optional							
			0.80	0		0	
			60.00	0		0	
Harvesting (labour)	p-da	10		0			
Total labour	p-da	88	5.00	440	176	110	154
SUBTOTAL				3496	2722	436	338
Packaging		4375		0			
Transport	t km	100	0.10	350			350
Commission (12.5%)				1750			1750
TOTAL COSTS				5596	2722	436	2438
Yield/gross returns	tonne	35	400.00	14000		14000	
NET RETURNS/ha				8404			

7/18/93

Table FA-16

Projected Cash Flow
 May 1, 1994 to April 30, 1997
 U.S. Dollars

Marketing Firm
 Swaziland

	Start-up	Month				
		1	2	3	4	5
Equity (cash)	\$50,000		\$0			
Long-Term Debt	\$0					
Total	\$50,000					
Cash on Hand		\$50,000	\$30,161	\$25,322	\$20,483	\$15,644
Cash In		\$0	\$5,000	\$5,000	\$5,000	\$5,000
Commissions		\$0	\$5,000	\$5,000	\$5,000	\$5,000
Organization # 1			\$5,000	\$5,000	\$5,000	\$5,000
Organization # 2					\$0	
Organization # 3		0			\$0	\$0
		\$0				
Cash Available		\$50,000	\$35,161	\$30,322	\$25,483	\$20,644
Cash Out		\$19,839	\$9,839	\$9,839	\$9,839	\$9,839
Capital Expenditure		\$10,000				
Operating Expenses						
Managers' Salaries		\$4,000	\$4,000	\$4,000	\$4,000	\$4,000
Admin Ass't/Accountant		\$667	\$667	\$667	\$667	\$667
Field Assistants (2)		\$1,212	\$1,212	\$1,212	\$1,212	\$1,212
Office Rent*		\$303	\$303	\$303	\$303	\$303
Utilities		\$212	\$212	\$212	\$212	\$212
Vehicle Rent & Fuel**		\$2,900	\$2,900	\$2,900	\$2,900	\$2,900
Secretary		545	\$545	\$545	\$545	\$545
Int (l-t) @ 0.10			\$0	\$0	\$0	\$0
Int (s-t) @ 0.18			\$0	\$0	\$0	\$0
Total Op Expenses		\$9,839	\$9,839	\$9,839	\$9,839	\$9,839
Amortization LT Debt						\$0
Cash Flow This Month		(\$19,839)	(\$4,839)	(\$4,839)	(\$4,839)	(\$4,839)
Cumulative Cash Flow		(\$19,839)	(\$24,678)	(\$29,517)	(\$34,356)	(\$39,196)
Cash Position Before STF		\$30,161	\$25,322	\$20,483	\$15,644	\$10,804
Short-Term Borrowing		\$0	\$0	\$0		
Short-Term Repayment		\$0			\$0	\$0
Outstanding ST Debt		\$0	\$0	\$0	\$0	\$0
Cash Position		\$30,161	\$25,322	\$20,483	\$15,644	\$10,804
Outstanding LT Debt		\$0	\$0	\$0	\$0	\$0

* Space in a town other than Mbabane or Manzini for 2 Managers, 1 administrative assistant/accountant, 1 secretary, plus a small conference room.

** Assumes a car for each of the Managers, at \$1,200 each per month, and a motorcycle for each of the two Field Assistants, at \$250 each per month

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6	7	8	9	10	11	12	13
\$0		\$0	\$0			\$0	\$0
		\$0	\$10,000	\$10,000	\$0	\$5,000	\$0
\$10,804	\$5,965	\$1,126	\$6,287	\$11,448	\$6,525	\$6,520	\$1,514
\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$10,000
\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$10,000
\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
							\$5,000
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
					\$0		\$0
\$15,804	\$10,965	\$6,126	\$11,287	\$16,448	\$11,525	\$11,520	\$11,514
\$9,839	\$9,839	\$9,839	\$9,839	\$9,922	\$10,006	\$10,006	\$10,047
\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000
\$667	\$667	\$667	\$667	\$667	\$667	\$667	\$667
\$1,212	\$1,212	\$1,212	\$1,212	\$1,212	\$1,212	\$1,212	\$1,212
\$303	\$303	\$303	\$303	\$303	\$303	\$303	\$303
\$212	\$212	\$212	\$212	\$212	\$212	\$212	\$212
\$2,900	\$2,900	\$2,900	\$2,900	\$2,900	\$2,900	\$2,900	\$2,900
\$545	\$545	\$545	\$545	\$545	\$545	\$545	\$545
\$0	\$0	\$0	\$0	\$83	\$167	\$167	\$208
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$9,839	\$9,839	\$9,839	\$9,839	\$9,922	\$10,006	\$10,006	\$10,047
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(\$4,839)	(\$4,839)	(\$4,839)	(\$4,839)	(\$4,922)	(\$5,006)	(\$5,006)	(\$47)
(\$44,035)	(\$48,874)	(\$53,713)	(58,552)	(63,475)	(68,480)	(73,486)	(73,534)
\$5,965	\$1,126	(\$3,713)	\$1,448	\$6,525	\$1,520	\$1,514	\$1,466
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$5,965	\$1,126	(\$3,713)	\$1,448	\$6,525	\$1,520	\$1,514	\$1,466
\$0	\$0	\$0	\$10,000	\$20,000	\$20,000	\$25,000	\$25,000

14	15	16	17	18	19	20	21
	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$1,466	\$1,419	\$1,372	\$1,324	\$1,277	\$1,229	\$1,182	\$1,134
\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	\$0						
\$11,466	\$11,419	\$11,372	\$11,324	\$11,277	\$11,229	\$11,182	\$11,134
\$10,047	\$10,047	\$10,047	\$10,047	\$10,047	\$10,047	\$10,047	\$10,047
\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000
\$667	\$667	\$667	\$667	\$667	\$667	\$667	\$667
\$1,212	\$1,212	\$1,212	\$1,212	\$1,212	\$1,212	\$1,212	\$1,212
\$303	\$303	\$303	\$303	\$303	\$303	\$303	\$303
\$212	\$212	\$212	\$212	\$212	\$212	\$212	\$212
\$2,900	\$2,900	\$2,900	\$2,900	\$2,900	\$2,900	\$2,900	\$2,900
\$545	\$545	\$545	\$545	\$545	\$545	\$545	\$545
\$208	\$208	\$208	\$208	\$208	\$208	\$208	\$208
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$10,047	\$10,047	\$10,047	\$10,047	\$10,047	\$10,047	\$10,047	\$10,047
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(\$47)	(\$47)	(\$47)	(\$47)	(\$47)	(\$47)	(\$47)	(\$47)
(73,581)	(73,628)	(73,676)	(73,723)	(73,771)	(73,818)	(73,866)	(73,913)
\$1,419	\$1,372	\$1,324	\$1,277	\$1,229	\$1,182	\$1,134	\$1,087
\$0	\$0	\$0	\$0			\$0	\$0
\$0							
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$1,419	\$1,372	\$1,324	\$1,277	\$1,229	\$1,182	\$1,134	\$1,087
\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000

	22	23	24	25	26	27	28	29
		\$0	\$0					
	\$1,087	\$1,039	\$992	\$944	\$5,897	\$10,850	\$15,802	\$20,755
	\$10,000	\$10,000	\$10,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
	\$10,000	\$10,000	\$10,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
	\$0	\$0	\$0	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
	\$11,087	\$11,039	\$10,992	\$15,944	\$20,897	\$25,850	\$30,802	\$35,755
	\$10,047	\$10,047	\$10,047	\$10,047	\$10,047	\$10,047	\$10,047	\$10,047
	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000
	\$667	\$667	\$667	\$667	\$667	\$667	\$667	\$667
	\$1,212	\$1,212	\$1,212	\$1,212	\$1,212	\$1,212	\$1,212	\$1,212
	\$303	\$303	\$303	\$303	\$303	\$303	\$303	\$303
	\$212	\$212	\$212	\$212	\$212	\$212	\$212	\$212
	\$2,900	\$2,900	\$2,900	\$2,900	\$2,900	\$2,900	\$2,900	\$2,900
	\$545	\$545	\$545	\$545	\$545	\$545	\$545	\$545
	\$208	\$208	\$208	\$208	\$208	\$208	\$208	\$208
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	\$10,047	\$10,047	\$10,047	\$10,047	\$10,047	\$10,047	\$10,047	\$10,047
	\$0	\$0	\$0					\$5,000
	(\$47)	(\$47)	(\$47)	\$4,953	\$4,953	\$4,953	\$4,953	\$4,953
	(73,961)	(74,008)	(74,056)	(69,103)	(64,150)	(59,198)	(54,245)	(49,293)
	\$1,039	\$992	\$944	\$5,897	\$10,850	\$15,802	\$20,755	\$20,707
	\$0	\$0	\$0					
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	\$1,039	\$992	\$944	\$5,897	\$10,850	\$15,802	\$20,755	\$20,707
	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$20,000

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30	31	32	33	34	35	36
\$20,707	\$20,701	\$20,737	\$20,815	\$20,934	\$26,095	\$31,256
\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
\$35,707	\$35,701	\$35,737	\$35,815	\$35,934	\$41,095	\$46,256
\$10,006	\$9,964	\$9,922	\$9,881	\$9,839	\$9,839	\$9,839
\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000
\$667	\$667	\$667	\$667	\$667	\$667	\$667
\$1,212	\$1,212	\$1,212	\$1,212	\$1,212	\$1,212	\$1,212
\$303	\$303	\$303	\$303	\$303	\$303	\$303
\$212	\$212	\$212	\$212	\$212	\$212	\$212
\$2,900	\$2,900	\$2,900	\$2,900	\$2,900	\$2,900	\$2,900
\$545	\$545	\$545	\$545	\$545	\$545	\$545
\$167	\$125	\$83	\$42	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$10,006	\$9,964	\$9,922	\$9,881	\$9,839	\$9,839	\$9,839
\$5,000	\$5,000	\$5,000	\$5,000			
\$4,994	\$5,036	\$5,078	\$5,119	\$5,161	\$5,161	\$5,161
(44,299)	(39,263)	(34,185)	(29,066)	(23,905)	(18,744)	(13,583)
\$20,701	\$20,737	\$20,815	\$20,934	\$26,095	\$31,256	\$36,417
\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$20,701	\$20,737	\$20,815	\$20,934	\$26,095	\$31,256	\$36,417
\$15,000	\$10,000	\$5,000	\$0	\$0	\$0	\$0

REVISED CAPM TA SPECIALISTS' SCOPES OF WORK

TECHNICAL ASSISTANCE FIELD TEAM

The long-term specialist field team, both local and expatriate, provided by the contractor, is identified in the scopes of work that follow. Both general and specific tasks to be carried out are noted.

Assignments:

Each long-term specialist will undertake the following specific assignments in their respective areas of expertise.

- o Provide on-the-job training to small-scale farmers, extension personnel, and produce marketing company personnel.
- o Prepare plans of work for organizational activities and production/marketing programs.
- o Prepare scope of work for short-term technical assistance.
- o Arrange for and conduct workshops and field days as well as observation tours through out the region for small-scale farmers and produce marketing company personnel, relevant to their needs.
- o Participate in the CAPM Management Information and Monitoring Program.

Each long-term specialist will also carry out additional assignments as detailed in the individual scopes of work.

Long-Term Expatriate Positions**1. Chief of Party**

General assignment and Lines of Authority: The Chief of Party will provide technical leadership to the CAPM Project TA team on behalf of the Contractor as defined in the contract. He will have full field authority on behalf of the Contractor to manage and control TA Specialists, long- and short-term, and all other CAPM activities carried out by the Contractor or its subcontractors in Swaziland.

Within the Contractor organization, the COP will report directly to a senior level home office CAPM project manager.

Within the GOS, the COP will report to the Director of Agriculture and Extension; through the Director, he will liaise with the Principal Secretary (PS) of MOAC as necessary to achieve the objectives on the Project. Working closely with these and all other officials and project managers, the COP will ensure that the project is coordinated and complimentary to other GOS/MOAC projects which are already in

operation. Within USAID/Swaziland, the COP will coordinate with and report to the Mission CAPM Senior Project Manager (SPM) and the PDO office. He will facilitate access of USAID management to project team members in the office and field, aid in developing intervention improvement strategies and assure timely access to management information. Specific duties include, but are no limited to, the following:

- o Supervision of the Support Office Staff (Project Administrator, Office Manager, and Administrative Assistant), and delegation of the following responsibilities, as appropriate.
- o In-country control of resources (financial and procured).
- o Management of long- and short-term CAPM TA specialists' activities.
- o General oversight of actions and activities of the CAPM TA specialists, for both local and expatriate.
- o Coordination of activities with SBGT which relate to the project and marketing firm.
- o Responsibilities for obtaining USAID/Swaziland and GOS approval, as necessary, for specific activities to be carried out by CAPM TA specialists or funded by the CAPM TA project.
- o Administrative management, with the support of the Contractor's home office, of CAPM TA specialists.
- o Coordination of the preparation of the Interim and Life-of-Project Workplans. Quarterly progress reports and rolling work plans, as well as all other technical reports developed through the project.
- o Assist in developing and managing the projects relationship with the Project Steering Committee and the public/private Project Technical Advisory Working Group. This includes assisting with the preparation of agendas and generally keeping the bodies informed as to the progress of the project.
- o Organization of CAPM project reports, experiences and other outputs in a manner to be of maximum usefulness to projects participants, local horticulture marketing companies, USAID/Swaziland the GOS, and in particular the MOAC, and others interested in project results.
- o Supervise the project's Monitoring and Evaluation system.

- o Evaluation of the performance of the long- and short-term, local and expatriate TA specialists in carrying out their assignments.

N.B.: For purposes of this document the Agribusiness/Organizational Development Specialist is designated Chief of Party (COP). It is recommended that this be optional, leaving it open for the Market Development Specialist to be designated COP.

1. Agribusiness/Organizational Development Specialist/COP

Duration of Assignment: _____ months

Geographic location: Central office and throughout country and region as necessary

Job Description:

In addition to his role as Chief of Party, the specialist will take an activist role through the project to bring about the establishment of functional small farmers' organizations and assist in development of the marketing firm. The specialist will have primary responsibility for the legal formation of the farmers' organizations, the training of the members and officers in their roles, and development of an action and financial plan. The specialist will assist other technical advisors in the same activities for the marketing firm.

The specialist will work closely with the marketing and horticultural specialists in development of crop feasibility studies for new crops. S/he will also be responsible for coordinating activities with the other LTTA to ensure a coordination of activities related to production and marketing.

Specific Responsibilities:

- o Manage the formation of farmers' organizations and the development of relevant action and financial plans. Assist in the formation of the organizations as legal entities.
- o Assist in the organization of the marketing firm as a legal entity. Prepare a business and financial plan for the firm.
- o Train management, staff and membership of the organizations and firms in duties and responsibilities.
- o Liaise with the Small Business Growth Trust and lending institutions within Swaziland and internationally to

obtain funding for the participating organizations and firm.

- o Assist in identifying and analyzing additional agribusiness opportunities (e.g. supply of inputs) and help the firm to develop these into their business plan.
- o Assist in the development of a record keeping program for small farmers.
- o Assist in identifying constraints to the further development of the commercial horticulture industry in Swaziland with respect to small farmers and formulate appropriate solutions to alleviate these constraints.
- o Recommend local and regional training courses for project clientele.
- o Collaborate with the SGBT Agribusiness Advisor to ensure his/her professional development in agribusiness.

2. Horticultural Specialist

Duration of Assignment: ____ months

Geographic Location: Central office and throughout country
and region as necessary.

Job Description:

The specialist will take an activist role within the framework of the project organization to help promote expansion of commercial horticultural crop production in Swaziland. Emphasis will be on providing production advise/consultation to private companies and individual farmers (primarily SNL, but also including TDL) engaged in commercial production of fruits and vegetables. In fulfilling this role the specialist will: advise on production schedules to meet market demands; recommend crop husbandry practices; identify constraints to production; conduct trials/demonstrators; develop appropriate production methods for "new" crops identified as have marketing potential; conduct training events for farmers extension personnel, etc; develop written materials on production related topic for use by farmers and extension personnel; assist in securing germ plasm and/or developing techniques for propagation of crop species/cultivars not locally available; and supervise the CAPM long-term production and marketing advisor as well as the field assistants in production related matters.

The specialist will collaborate with counterparts within the MOAC including officers from the research and extensions and especially with production adviser within the company or companies. It will be the specialist's duty to ensure improvement of a field program that is responsive to the needs of a horticultural production industry. The specialist will also maintain contacts with NAMBOARD, the Horticultural Campaign Committee and credit suppliers. The specialist will interact with farmers regularly and assist, as feasible, in the development of a network with regional research programs and related private agribusiness.

Specific Responsibilities:

- o Assist in identifying key production constraints to overall expansion of commercial production of fruits and vegetables including selection of crops and cultivars, planting schedules, population densities, fertilizer practices, pest control methods, irrigation management, and handling procedures. Develop along with other CAPM TA specialists, including long-term and short-term, and counterparts, a program to overcome these constraints and convey information to producers.
- o Conduct a research/demonstration field program addressing constraints to identify improved production methods and extend these to horticultural farmers. These will be primarily conducted at on-farm sites but may occasionally involve other sites. Coordinate this work with GOS counterpart and other related projects or agencies as appropriate.
- o Assist in planning and conducting field days, workshops, and other training events to transfer production information to farmers, extension workers, company field personnel, and other appropriate individuals. Coordinate with other CAPM TA specialists, MOAC counterparts, and local agribusiness representatives.
- o Assist in the development of appropriate material to use in extending production information to farmers and for use in training events.
- o Frequently visit production sites to observe crops, assist in the early identification of potential production problems and make recommendations as required to improve production efficiency. Assist in identifying causes of production related problems as required. Coordinate closely with Field Assistant, Production/Marketing Advisors and provide support for the carrying out of their responsibilities.

- o Collaborate with other team specialists in the development of feasibility studies for crops aimed at diversified production, summer markets and "market windows." Manage trials for production of "new" crops for market development. Train counterpart in all production activities.
- o Communicate and interact with organizations, institutes, and private business to obtain updated information and materials to assist in supporting commercial production of horticultural crops.
- o Provide on-the-job training to assigned counterparts especially the production advisor, field assistants and company personnel in crop production practices and on-farm demonstration methodology and extension techniques.

Participate in the CAPM Management Information and Monitoring Program. Assure correct, timely, and responsible data collection, analyze collected information and data, and provide summarized results with recommendation for perceived constraints.

3. Market Development Specialist

Duration of Assignment: _____ months

Geographic Location: CAPM central office, with travel throughout the country and region.

Job Description:

This specialist will be responsible for all postharvest and marketing activities in general. He/she will be required to assume an advisory role with the activities of the Swazi NAMBoard firms and the project marketing firm. He/she will also develop a program to provide market information to small farmers' organizations and train them in market functions in general.

The specialist will liaise closely with the CAPM team, MOAC personnel, NAMBoard, and private enterprises in the agribusiness sector. He/she will be the coordinator of a program of crop diversification for small farmers. He/she will ensure that all project personnel and other participants in the agribusiness sector benefit from his/her expertise to ensure the continued growth of all local agribusinesses and the agricultural sector in general.

Specific responsibilities:

- o Assist in identifying those domestic and regional marketing opportunities likely to be met by production from small-scale farmers.
- o Assist the marketing firm in development of a business/marketing plan. Assist the marketing firm and other marketers in management techniques and relationships with other buyers and sellers of fresh produce.
- o Collaborate with CAPM team members in scheduling production and marketing activities, including the development of a quality assurance program.
- o Develop an effective method of disseminating appropriate and timely production and marketing information to the marketing firm, farmers and other agribusinesses, as required.
- o Identify needs for postharvest/marketing infrastructure and assist in development of plans and programs to meet these needs.
- o Train the marketing manager through active participation in all activities of marketing. Develop a training program for the marketing manager and other agribusiness management, including small farmer organization managers, in skills required for successful participation in the marketing system.
- o Coordinate feasibility studies for crop diversification through new crops or marketing at different seasons.
- o Collaborate with the SBGT Agribusiness Advisor to ensure his/her professional development in agribusiness.

Long-term Local Positions

1. Project Coordinator

Duration of Assignment: ____ months

Geographic Location: Central office, and throughout the country and region as required.

Job Description:

The specialist will serve as the overall coordinator of the production and marketing activities which take place under the project. The specialist will ensure that a production program

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is put in place which corresponds to the market's demand. The specialist will play a key role in liaising with all parties concerned with the project including: chiefs, regional development authorities, extension personnel, NAMBOARD, MOAC administrators and specialists, as well as farmers organizations, the firm and companies associated with the project. The specialist will see to it the production and marketing targets set as outputs for the project are met or exceeded.

Specific Responsibilities:

- o Coordinate the overall production and marketing program between the CAPM technical people and the small scale farmers and the marketing firm. This would include production and marketing targets and the implementation of a program to reach these targets.
- o Liaise with community leaders, ministry personnel, as well as other similar project managers to ensure close cooperation and coordination between CAPM'S efforts and other GOS/MOAC initiatives.
- o Work daily with the Chief of Party in ensuring the overall smooth operation of the project as it relates to accomplishing the projects goal and objective. Part of this effort would include keeping the Director of Agriculture and Cooperatives and through him the Principal Secretary of the MOAC informed of the project's activities. Participation on the PSC as well as the yet to be formed private/public sector Project Working Committee, would be an important activity.
- o Identify constraints and find solution for obstacles and bottlenecks which inhibit the development of horticultural production by small scale farmers in Swaziland.
- o Assist the Chief of Party with reporting and CAPM Management Information and Marketing Program requirements as set out in the contract.

2. Production Manager

Duration of Assignment: ____ months

Geographic Location: Marketing Firm office, and throughout the country and region as required.

Job Description:

The Production Manager will not be under the direct supervision of the CAPM project, but will be responsible to it for all project-related activities. The responsibilities and job description include those activities of the project and the marketing firm.

During the life of the project, the Production Manager will fill the roll of production manager and owner of the marketing firm and will be trained and gain experience in his/her position as Production Manager of the marketing firm.

The Production Manager will be the key person to liaise with the field assistants and the expatriate Horticultural and Marketing Specialists on production matters. S/he will be responsible for overseeing, backstopping, and implementing the production program to enable the marketing firm to meet the needs of its customers. He must establish and maintain good industrial and business relations with small farmers, field assistants, production marketing specialists, marketing company personnel, and extension personnel as well as other project management.

Specific Responsibilities:

- o Implement an annual production program as outlined by the project coordinator and Horticulturist and Marketing Specialists.
- o Prepare a monthly activity plan base on the production/marketing program. This should give dates of seed-bed preparation, seeding, transplanting, slashing, weeding etc.
- o Maintain a daily operation review record book. The Production Advisor should keep a daily activity book that will be used as guide when reviewing the success or failure of the project. Information to be kept will include participant information and records provided by field assistants and small-scale farmers.
- o Assisted by the CAPM team and with the Marketing Manager, negotiate contracts between the firm and the farmers' organizations.
- o Stay in daily contact and communication with field assistants and the Horticulturist and Marketing Specialist to keep everyone abreast of changes or problems in the production/marketing system.
- o Advise participating farmers on appropriate production practices as outlined by the Horticulture and Marketing

Specialist.

- o Assist field agents in scouting for pests and disease and other problems that may arise.
- o Coordinate all activities, on a daily basis, with the local marketing personnel.
- o Produce monthly reports. These reports should give information which is basically a summary of the daily operations review records.

3. Marketing Manager

Duration of Assignment: _____ months

Geographic Location: Marketing Firm office and throughout the country and region as required.

Job Description:

The Marketing Manager will not be under the direct supervision of the CAPM project, but will be responsible to it for all project-related activities. The responsibilities and job description include those activities of the project and the marketing firm.

During the life of the project, the Marketing Manager will fill the role of marketing manager and owner of the marketing firm and will be trained and gain experience in this position.

The Marketing Manager will be the key local person to liaise with the field assistants and the expatriate Market Development Specialist on marketing related matters. He will be responsible for overseeing, backstopping, and implementing the marketing program to enable the production program to meet the needs of its customers. He must establish and maintain good industrial and business relations with small-scale farmers' organizations, field assistants, extension marketing specialists, marketing company personnel, extension personnel as well as other project management personnel.

Specific Responsibilities:

- o Assist in implementing an annual marketing program, as outlined by the Project Coordinator and Marketing Specialist.
- o Prepare a monthly activity plan based on the production/marketing program. This report should include dates of planting, expected harvest times, expected quantities to be harvested, and other relevant

and timely information.

- o The Marketing Manager should keep a daily activity book. Information to be kept will include participating farmer information and records provided by field assistants and small-scale farmers relating to amounts and types of products sold, market percentage of various grades, etc.
- o Assist CAPM production personnel in the programming of production of target crops. Develop, with the assistance of the Market Development Specialist, quality specifications and a program of quality control and train farmers and packing shed management in the program.
- o Stay in constant communication with field assistants, the Horticulturist and Market Development Specialist to keep everyone informed of changes or problems in the production/marketing system.
- o Assist the Production Manager and other CAPM team members in programs designed to develop an understanding of marketing among the managers and members of the farmers' organizations.
- o In cooperation with the Market Development Specialist and others, train packing shed and other postharvest personnel in management and produce handling. Assist the specialist in design and costing of postharvest infrastructure as required.
- o Assist field assistant with maintaining comprehensive records on individual operations such as: Sales volumes, quality levels, products sold, dollars per sale, sales outlets, etc.
- o Assist field agents anticipate problems which could effect the quality and quantity of product needed for the market.
- o Coordinate all activities on a daily basis, with the local production advisor.

4. Field Assistants Assigned to Firm (2 Persons)

Duration of Assignment: ____ months

Geographic Location: Specific production areas to be determined

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Job Description:

The field assistants will be employees of the marketing firm relating directly to participating small-scale farmers on a daily basis. Virtually all the activities related to the job are to take place in the field with these small-scale farmers. The field assistant job will entail setting up and implementing a production and marketing program in close cooperation and coordination with the Horticultural and Market Development Specialists, the Production and Marketing Managers of the marketing firm and the farmers' organizations.

Specific Responsibilities under the Direction of the Marketing Firm Management:

- o Work with individual farmers and their organizations over the period of the project to increase their ability to efficiently produce a quality product for the target markets at a profit. This will include a broad range of initiatives including group workshops and field trips which will expose the small-scale farmers of Swaziland to modern and efficient production and marketing techniques.
- o Set up a specific production and marketing program with farmers' organizations. With backup support from the entire CAPM team, develop a program that results in the production of targeted amounts of specific products for specified markets.
- o Work with local Production and Marketing Managers and the Horticulture Production and Market Development Specialists in solving problems, and identifying problems faced by participant farmers. All the assistant's efforts on behalf of the small-scale farmers will be directed toward farmers' ability to procure market information, credit and inputs through their own means in the future.
- o Assist the farmers' organizations in activities required to function as a private enterprise. Actively seek new membership for the organization.
- o Coordinate all activities with other GOS/MOAC sponsored projects, as well as work closely with local extension personnel.
- o Under a program of quality control developed by the Market Development Specialist and the Marketing Manager, a designated field assistant will manage the quality program and assist other field assistants in its implementation.

5. Field Assistants (3 persons)

Duration of Assignment: ____ months

Geographic Location: CAPM central office and throughout the country and region as necessary

Job Description:

The field assistants assigned to the project will work with the long-term TA in implementation of the project's production, marketing and monitoring activities. They will work closely with the Marketing Firm to ensure that production, postharvest and farmers' organization activities are carried out. They will assist the NAMBoard firms under the guidance of the long-term TA. Virtually all project activities of the project will take place in the field and these assistants will be the daily representatives to small farmers for the CAPM project.

Specific Responsibilities:

- o Work with farmers in the field and through their organizations to increase their ability to produce efficiently and improve their incomes through profits obtained from marketing their produce. This will include work in the fields, the organizations, and the packing facilities.
- o With the assistance of the long-term TA and in cooperation with the Marketing Firm, set up programmed production and postharvest marketing activities for target markets.
- o Set up and monitor production trials with the assistance of the Marketing Firm production manager and the CAPM horticultural specialist.
- o Assist CAPM and Marketing Firm staff identify constraints to organization, production and marketing; participate in programs or activities to overcome these constraints.
- o Assist the farmers' organizations in developing sound business practices and relationships with others in the agribusiness sector.
- o Coordinate all activities with other GOS/MOAC sponsored projects, as well as working closely with MOAC extension personnel.
- o Carry out other activities as required by the CAPM long-term technical assistance.

SHORT-TERM CONSULTANCIES

This section contains a brief description of some of the short-term consultancies which the project may require during the life of the project. These consultancies are expected to be filled by local or regional consultants whenever possible. The list is not extensive in order to allow flexibility in meeting project needs.

A. Short-Term Intermittent Legal Assistance to Prepare Farmers' Organizations and Marketing Firms' Articles of Association

Contract Period: Approximately 2 months over the life of the project.

Specific Tasks: Provide legal assistance to CAPM-supported organizations for their organization. Provide legal assistance on producer-marketer relationships.

This person will be recruited locally if a qualified candidate is available.

B. Quality Control Specialist

Contract Period: One month

Specific Tasks: Develop specifications for marketed produce. Design quality control program and train CAPM team and farmers in its implementation.

C. Postharvest Specialist

Contract Period: One month

Specific Tasks: Design appropriate facilities and handling technology for produce marketed under the CAPM project. Conduct seminars in postharvest handling of fruits and vegetables.

D. Pest Management/IPM Specialist

Contract Period: One month

Specific Tasks: Develop and implement a pest/pesticide management program for small farmers using applicable IPM techniques. Review available pesticides and prepare a report recommending their use.

E. A total of 8 person/months of short-term technical assistance is considered minimum to cover project needs.

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