

AGRIBUSINESS DEVELOPMENT CENTRE
UGANDA'S INVESTMENT IN DEVELOPING EXPORT
AGRICULTURE (IDEA) PROJECT

Plot 18 Prince Charles Drive, Kololo. P. O Box 7856 Kampala. Tel: 255482/3; Fax 250360

Final Report on:

THE IMPACT OF IDEA PROJECT
ON THE PRODUCTION AND MARKETING
OF FRESH PRODUCE IN UGANDA

Prepared by:
Eriab Kiiza and Callist Ngabirano
ClearConsult (U) Ltd
P. O. Box 4255, Kampala

27 April 1999

ClearConsult (U) Ltd

Plot 27 Nkrumah Road, Basajja Building - Nasser Road Tower, 3rd. Suite No. 3
P.O. Box 4255 Kampala, Uganda Fax: 250-041-341245

Our Ref: CCU/CSD/97/01

Your Ref:

Date: 23 April 1999.

Mr. Clive Drew
ADC Chief of Party
Plot 18 Prince Charles Drive Kololo
Kampala.

Dear Mr. Drew

Re: Final Report on the Commodity Study of Fresh Produce

We have the honour to present to you three copies of the final report on the evaluation of IDEA Project's impacts in promoting the production and marketing of fresh produce in Uganda. In addition to the hard copies, we are also presenting to you a disk copy.

Within the context of the terms of reference and ADC's comments on our draft report, this final report presents a quantitative assessment of:

- The adequacy, relevance and effectiveness of IDEA Project interventions under taken since 1995.
- Project activities that were of socio-economic benefit to growers, buyers and exporters of fresh produce.
- The views of growers, buyers, exporters and other stakeholders on future activities that will sustain the production and marketing of fresh produce.

We trust you will find this report acceptable and useful.

Looking forward to further cooperation, we remain

Yours sincerely

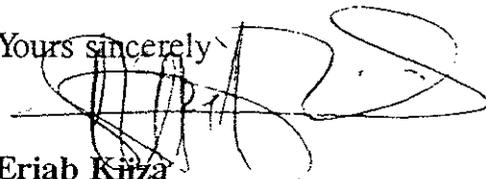

Eriab Kiiza
Managing Director/Team Leader.

TABLE OF CONTENTS

Abbreviations and Acronyms

Executive Summary

1.0	INTRODUCTION.....	1
1.1	Background and Purpose of the Study	1
1.2	Scope	1
1.3	Methodology	2
2.0	EXTENT OF ADC/IDEA PROJECT INVOLVEMENT	4
2.1	IDEA Project Environment.....	4
2.2	Project Goal, Objectives and Targets.....	4
2.3	Baseline Indicators.....	5
2.4	Summary of Interventions Undertaken.....	7
3.0	COMMODITY FINDINGS AND ANALYSES	9
3.1	Passion Fruit	9
3.2	Fresh Green Beans	20
3.3	Hot Pepper	23
3.4	Apple Banana	29
3.5	Promotion of Research at Kawanda Research Institute	31
3.6	Institutional Strengthening of HORTEXA	33
4.0	CONCLUSIONS AND RECOMMENDATIONS	35
4.1	Conclusions	35
4.2	Recommendations.....	37

LIST OF TABLES:

2.1	Contribution of Fresh Produce to Household Incomes.....	6
2.2	Selected Farm-level Indicators.....	7
2.3	Summary of Key Interventions Undertaken in Fresh Produce.....	8
3.1	Passion Fruit Production Statistics for Selected Districts (1998)	10
3.2	Selected Farm Level Indicators per Household	11
3.3	Basic Characteristics of a Passion Farm (1995-1998).....	11
3.4	Labour Utilisation by Gender for a Typical Passion Fruit Farm	13
3.5	Employment Creation in Passion Fruit Production	13
3.6	Passion Fruit Producers Prices (1995-1998).....	15
3.7	Sales for an Average Passion Fruit Farmer.....	16
3.8	Household Incomes for an Average Passion Fruit Producer	17
3.9	Social Indicators.....	18
3.10	Cost of Exporting a Box of Passion Fruit.....	19
3.11	Foreign Exchange Farming from Passion Fruit	20

3.12	Fresh Bears Exports and Employment at Mairye Estates	22
3.13	Area, Output and Sales of Hot Pepper.....	25
3.14	Cost of Production of Hot Pepper.....	26
3.15	Average Incomes and Contribution of Hot Pepper.....	27
3.16	Selected Socio-Economic Indicators for Hot Pepper Produces	28

LIST OF ANNEXES:

- I. TERMS OF REFERENCE
- II. LIST OF ADC FRESH PRODUCE CLIENTS
- III. STUDY INSTRUMENTS
- IV. LIST OF FRESH PRODUCE EXPORT CROPS AS AT DECEMBER 1998
- V. KEY INTERVENTIONS/ACTIVITIES OF THE IDEA PROJECT IN THE FRESH PRODUCE EXPORT SECTOR
- VI. DOCUMENTS CONSULTED

ABBREVIATIONS AND ACRONYMS

ADC	-	Agribusiness Development Centre
CAA	-	Civil Aviation Authority
C&F	-	Cost and Freight
COLEACP	-	Organisation for Promotion of European Imports of Fresh Fruits and Vegetables from Africa, Caribbean and Pacific Countries
EPADU	-	Export Policy Analysis and Development Unit
EU	-	European Union
FAO	-	Food and Agriculture Organisation
FPED	-	Ministry of Finance, Planning and Economic Development
FOB	-	Free on Board
HV	-	High Value
HORTEXA	-	Horticultural Exporters Association
IDEA	-	Uganda's Investment in Developing Export Agriculture
KARI	-	Kawanda Research Institute
kg	-	kilogram
LOP	-	Life of Project
MAAIF	-	Ministry of Agriculture, Animal Industry and Fisheries
mt	-	metric tonne
MTI	-	Ministry of Trade and Industry
MUK	-	Makerere University, Kampala
NARO	-	National Agricultural Research Organisation
NTAE	-	Non-Traditional Agricultural Exports
PAM	-	Plan for Modernizing Agriculture
shs	-	Uganda Shillings
TOR	-	Terms of Reference
UEPB	-	Uganda Export Promotion Board
ULA	-	Uganda Investment Authority
U.K	-	United Kingdom
USA	-	United States of America
USAID	-	United States Agency for International Development

EXECUTIVE SUMMARY

1.0 INTRODUCTION

1.1 Purpose of the Study

The purpose of this study was to measure the IDEA Project's progress towards achieving its goal of increasing rural men's and women's incomes. In particular, the study was meant to:

- i. Assess the adequacy, relevance and effectiveness of project interventions undertaken since 1995.
- ii. Identify IDEA Project activities that were of direct or indirect socioeconomic benefit to growers, buyers and exporters of fresh produce.
- iii. Seek the views of growers, buyers, exporters and other stakeholders to determine future project activities that could sustain the production and marketing of fresh produce.

1.2 Methodology Used

The study covered all buyers and exporters of fresh produce assisted by IDEA Project. On the production side, it concentrated on growers in Bushenyi, Kasese, Masaka, Mpigi and Mubende. These districts were selected because they were the main suppliers of the four fresh produce crops that IDEA Project was promoting. The main aspects assessed in the study include yield levels and outputs, national production levels, varieties grown and production technologies used, farm labour utilization by gender, average prices offered to producers, volumes and values of fresh produce exported and sold locally, household income levels and incomes attributed to fresh produce and social and nutritional status of growers, backward, forward linkages and multiplier effects associated with production and marketing of fresh produce, perceptions on contributions of IDEA Project and suggestions for future project interventions.

In assessing impacts, the study followed the intervention paths employed by IDEA Project in channelling assistance to its clients. In particular, the consultants made the first stop-over at IDEA Project offices. Here, the consultants obtained information on specific project interventions undertaken, details about beneficiaries as well as IDEA Project's self-assessment. The next stop-over was at Horticulture Exporters Association (HORTEXA). Thereafter, a census study of beneficiary exporters was undertaken. Finally, case studies were carried out on green beans, and hot pepper while sample surveys were conducted on passion fruit and apple banana.

Methods of data collection used included literature review, formal and informal interviews with growers, buyers and exporters. The data gathered were entered using Quattro-Pro and exported to SPSS for analysis.

2.0 COMMODITY FINDINGS

2.1 Summary of Interventions Undertaken.

Over the period 1995-1998, IDEA Project provided assistance to thirty one fresh produce clients. Two of the clients were umbrella organisations, fifteen were exporters, six were buyers while eight were producers. In terms of commodity coverage, the assistance focussed on apple banana, matooke banana, chilli, green beans, hot pepper, mushroom, okra and passion fruit. The

assistance, which was in the forms of grants and technical advise, covered feasibility studies, irrigation, marketing, research and training as well as strengthening institutional and farm infrastructures. Table i below provides the summary by activity type, amount of grants given and technical assistance offered.

Table i: Summary of Key Interventions Undertaken in Fresh Produce

Activity Type	Clients reached	Grant value (US\$)	TA (days)	ADC's expected Impact ¹
Research	6	152,000	215	Low to high
Feasibility study	1	Nil	5	High
Training and marketing	11	170,000	480	Low to high
Institutional strengthening	1	72,000	200	Medium
Irrigation	1	12,000	20	Medium
Strengthening farm infrastructure	2	16,000	45	Low to medium

* Source: IDEA Project internal records.

2.2 Passion Fruit

The main beneficiaries of IDEA Project in regard to passion fruit were HORTEXA, Free-Chem, Ageti Farm and Kingo Women's Association. Overall, the beneficiaries received US \$ 24,000 in grants and 80 person days in technical assistance.

Production of Passion Fruit: Passion fruit is a small holder crop. The average farm size ranges from 0.20 to 0.25 acres per farm. In Kasese, Kabarole, Bushenyi and Masaka, where IDEA Project has been actively involved in promoting passion fruit since 1996, outgrowers have increased area under the crop to an average of 1.15 acres. A typical outgrower obtains 958 kg per annum, giving a yield of 908 kg/acre. The main variety grown is the small local purple accounting for about 80% of national production, although the big purple variety (Kawanda Hybrid) is beginning to spread. The main producing districts are Kasese, Kabarole, Mbale, Masaka, Bushenyi, Nebbi, Mubende, Kisoro, Iganga, Kamuli and Bundibugyo. Estimates obtained during this study put national output of passion fruit at between 2,900 mt and 3,600 mt in 1998. The key production problems identified were; inadequate capital for expanding farms, scarce and expensive inputs, particularly chemicals and tools and limited technical know-how in production.

Passion Fruit Marketing: It is estimated that at least 80%-90% of producers effect all their sales of passion fruit in the rural market. Another 10%-15% may sometimes sell directly in urban

¹ "Low" means no tangible exports directly resulting from IDEA assistance; "medium" means less than US\$ 50,000 FOB worth in exports resulting from IDEA assistance; "High" refers to more than US\$ 50,000 worth of exports.

markets. Prices at the farm gate, rural and urban markets are determined through negotiation, depending on the forces of demand and supply. Overall, 86% of the respondents agreed that the volume of passion fruit they sell at the farm gate does not exceed 5% of total sales. The rural market is, therefore, the major market for passion fruit in Uganda.

Further assessment indicated that this rural market for passion fruit consists of two segments. In the first segment, there are export collection centres while in the second segment there is an open local market. Passion fruit prices generally vary as follows at successive marketing levels:

Farm gate:	Rural Market	Collection Center	Urban Market:
Ushs 350-600/=	Ushs 650-700	Ushs 750-850	Ushs 800-1,100

With an average sale of 577 kg in 1998, a typical farmer received Ushs 461,700 from sales of passion fruit. Household incomes, however, varied from one district to another.

Household Incomes for Passion Fruit Producers: Passion fruit accounts for a small proportion to household income, ranging from 5% in Bushenyi, 10% in Kasese to 15% in Masaka. The main reason why passion fruit contributes hardly 15% to household incomes in the three districts is that producers depend on other agricultural commodities for 40%-60% of their incomes.

Going by the income levels, passion fruit contributes 5%-15% to an average producer's total income. On this basis, it is logical to postulate that passion fruit production has contributed 5%-15% to household expenditure. This has, in effect, contributed to improvements in the social status of producers.

Passion Fruit Exports: The main exporter of passion fruits assisted by IDEA Project is Free-Chem. This firm started exporting passion fruits in July 1997, with 12 mt. In 1998 it exported about 6 mt. These volumes represent 32% and 20% of all the passion fruit exported from Uganda during 1997 and 1998 respectively. Other exporters included Suntrade Consulting Ltd and M/s J.Lutta. At national level, whereas the annual volumes of passion fruit exported during 1996-1998 were much higher than those exported from 1993 to 1995, a generally declining trend can be observed, dropping from 58 mt in 1996, 38 mt in 1997 to 30 mt in 1998. This declining trend can be attributed to several factors, including insurgency in Western Uganda and increasing competition on the European market.

Employment Generation: Passion fruit production in the districts studied is estimated to have created 571 jobs of which 178 (35%) are women. At the marketing/export level, jobs created by Free-Chem were 36, consisting of 15 women (40%) and 21 men. Therefore direct employment creation in passion fruit production and marketing is estimated at 607.

2.3 Fresh Green Beans

ADC's Involvement in Fresh Beans: In 1996, Fruit Pack Ltd received a grant for pioneering research on the production of green beans for export, from Kabale and Kasese districts with no practical results for project intervention. The second beneficiary was Mairye Estates Ltd. Over the period 1996-98, the firm received technical assistance worth 20 person days and grant of \$ 15,000 to carry out production trials. Arising from those trials, Paulista bobby beans were developed and are currently being grown commercially at Mairye Estates. IDEA Project offered a second grant of US\$ 10,000 and 40 person days of technical assistance in a range of training aspects.

Production and Export of Fresh Green Beans: As a result of IDEA Project assistance, Mairye Estate Ltd established a 37-acre farm of green beans in 1996, with a fixed investment of about US\$ 330,000. Export levels were 32.14 mt in 1997 and 101 mt in 1998, giving US \$ 28,930 and US \$ 116,150 in 1997 and 1998 respectively.

2.4 Hot pepper

ADC Interventions in Hot Pepper Production and Marketing: Since 1996, the ADC has promoted the growing of hot pepper at two main locations - Mubuku Irrigation Scheme in Kasese and Bujega in Mpigi district. The ADC assisted producers and promoters at Mubuku Irrigation Scheme and a private buyer, COSEDA Enterprises Ltd, in Mpigi. At Mubuku Irrigation Scheme, the ADC offered a grant amounting to US\$ 40,000. The grant was mainly utilised for the purchase of production inputs for trials, conducting training, in-country and overseas study tours and trial shipments.

The promotion of hot pepper in Mpigi district has, been undertaken through direct assistance to COSEDA Enterprises- a private buyer and exporter. In particular, the following assistance has been offered over the period 1996-1998:

- On-the-farm training in production and post harvest systems amounting to at least 50 person days of technical advice.
- A grant of US \$ 6,000 to facilitate establishment of a nursery, production trials and construction of a pack house. Trials started in September 1998 and were expected to be completed by June 1999.
- COSEDA was linked to several market contacts in Europe. Out of those contacts, an export contract was initiated with M/s Highlow B.V in the Netherlands.
- COSEDA Managing Director was sponsored to attend a COLEACP meeting on codes of practice and conduct. A draft code of practice for all horticultural exporters (fresh produce and flowers) was prepared by COLEACP members under cost-share funding from European Union (EU), private sector and IDEA Project. The code stipulates minimum social, environmental, food safety and quality standards that all export growers and exporters should meet to obtain certification.

Additional assistance for the promotion of hot pepper was channeled to M/s Mustak Enterprises, through HORTEXA, to establish a supplementary irrigation system. The assistance amounted to US\$ 12,000 and 20 person days of TA.

Hot Pepper Export: Hot pepper exports have been increasing to Europe over the last five years although the market is still small and mainly consists of consumers from "ethnic minorities". According to *The Background to the Budget* and ADC export statistics, Ugandan export volumes have increased from a low level of less than 8 mt per annum in 1995 to over 100 mt in 1997. It is estimated that the volume of hot pepper exported in 1998 was about 236 mt. Given a reported FOB price of US\$ 1.35 per kg, the national trends in the volume and value in exports of hot pepper are shown below:

Year	1995	1996	1997	1998
Exports (mt)	8	25	107	236
Foreign Earning(US\$)	10,800	33,750	144,450	318,600

Effect on Producers: The study further established that COSEDA works with at least 80 small outgrowers in Butambala and Gomba counties in Mpigi District. Of these 80, only 3 consistently supply about 30% of the hot pepper exported by COSEDA. In turn, they receive basic agronomic advice and supplies of seed from COSEDA. On the basis of data gathered from COSEDA and Mubuku Irrigation Scheme, the total number of households involved in hot pepper production for export in the two districts is estimated at 150, implying over 1,000 jobs.

The key production and marketing constraints include inadequate capital, poor methods of transporting the produce to the pack house, lack of proper pack houses, high labour requirements and associated costs, perishability of the produce and scarcity of packaging materials. The following considerations are paramount to the sustenance of hot pepper production: availability of seed, agro-chemicals and fertilizers, adequate packing boxes, grading facility, motorized transport to collect produce from different divisions to collecting centres, post-harvest handling of vegetable and prompt payments for farmers produce. There is also need for good market communication so that farmers are kept aware of what is happening.

2.4 Apple Bananas

ADC Assistance: There are two main clients, who benefitted from IDEA Project assistance in promoting the production and exports of apple bananas. These clients are OSU Ltd, a private Company, and Kawanda Research Institute (KARI) of National Agricultural Research Organisation (NARO). OSU Ltd and Davula Farm are sister companies. Whereas OSU Ltd is an exporting company, Davula Farm is a producer. Both companies deal in apple bananas under the same promoter. Davula Farm is located in Ssekanyonyi sub-county, Mityana County in Mubende District. OSU Ltd, on the other hand, has a contact office in Kampala. During 1997, Davula Farm/OSU Ltd got a grant of US\$ 6,000 from ADC. The grant was disbursed in form of fertilizers, herbicides and materials for conducting production trials. Through 1998, Davula/OSU continued to receive technical advice on production and post harvest handling methods. In addition to the assistance extended directly to OSU Ltd, ADC undertook a study of the U.K apple banana market as a major step in promoting Ugandan exports. Trial shipments were made in 1997 and recommended commodity specifications were packaged to guide prospective exporters.

Production and Marketing of Apple Bananas: The growing of apple bananas on Davula Farm was initiated in 1996 with 50 acres under the crop. Acreage remained constant through 1998. Harvesting began in 1997, with about 104 mt. As more of the crop continued to mature, output increased to 208 mt in 1998.

Although the picture at production level was impressive, the marketing side was rather depressive. OSU Ltd indicates that IDEA Project could not connect it to a foreign buyer until early 1998. To this extent, apple bananas harvested from Davula Farm during 1997 ended on the local market at marginal prices. Even at these low prices, Davula sold only 20.8 mt out of 104 mt produced in 1997. The balance of 83.2 mt is said to have rotten in the garden.

Early 1998, with ADC assistance, a buyer was identified in Sweden. Following this outlet, OSU Ltd exported low quantities in 1998. However, in December that year, OSU Ltd suspended exports because export prices were relatively low while payments were often delayed. On a positive note, OSU Ltd, through ADC, secured an export outlet in January 1999, for 10 mt per week. Out of these 10 mt demanded, Davula Farm can produce up to 4 mt per week. The challenge facing OSU Ltd, therefore, is to raise the balance of 6 mt per week from other producers.

National Exports of Apple Bananas: Looking at ADC records on apple banana exports, a steady increase in volume is observed, rising from about 80 mt in 1995 to 123 mt in 1996 and 144 mt in 1997. A decline to 111 mt in 1998 then followed. It is believed that there are numerous free-lance agents in Uganda, who buy small quantities of apple bananas and despatch them to their contacts abroad, especially in the U.K.

Major Constraints: There is a general lack of data on how much apple banana is produced in Uganda. Besides, much of what is produced does not meet export standards. OSU Ltd, like most other fresh produce exporters, lacks a proper pack house. This manifestation is one characteristic of a general poor export infrastructure for upcoming fresh produce exporters.

2.5 Promotion of Research at Kawanda Research Institute

Kawanda Research Institute received a grant of US \$ 100,000 to characterise, demonstrate and transfer agronomic information regarding apple banana and passion fruit to farmers. Passion fruit germoplasma samples were collected from North Eastern Uganda. These were experimented for collar rot disease. 800 grafted seedlings were given out to farmers. A demonstration plot for apple banana was set up. Training and on-farm visits were also made out of which useful information regarding pre- and post-harvest handling of apple banana was given.

2.6 Institutional Strengthening of HORTEXA

The first major category of assistance given to HORTEXA was in marketing. A grant of US \$ 30,000 was utilised by members of the association over the period 1995-1996 to attend trade shows in Holland, Sharjah and South Africa. The overall purpose of attending the shows was to get exporters exposed to those markets. One achievement is that COSEDA now exports hot pepper to Holland. Similarly, Allumina Brothers made several shipments to South Africa but discontinued the business when payments could not be received on time from the importers.

In February 1998, IDEA Project disbursed US\$ 32,100 to HORTEXA for establishment of an office, upgrading farms of HORTEXA members, multiplying seeds, developing export markets, accessing technical supervision and undertakings an evaluation audit. The overall aim of the grant was to strengthen existing membership, attract new members, and enhance financial accountability through service delivery. Out of US \$ 32,100 HORTEXA utilised, US\$ 20,770 was utilised to set up simple pack houses (US\$ 7,460), acquire irrigation equipment (US\$ 10,290) and access technical advice (US\$ 1,499). Other areas on which the grant was spent include establishment of an Office and hiring an Office Administrator. As a result, paid up membership rose from 6 in February 1996 to 30 in February 1998, before dropping slightly to 28 by December 1998. Out of the 28 members, 13 were exporters, 13 others were farmers while two were farmer groups.

In rating the contribution of IDEA Project, HORTEXA Executive Committee indicated that the assistance was relevant to the association's needs but it was generally inadequate. While the total amount sought and approved by USAID was 72,000, only US\$39,000 had not been distributed by December 1998.

The impact of IDEA Project assistance on individual export firms was considered to be "medium" i.e. resulting into additional fresh produce exports worth about US\$ 50,000. HORTEXA indicated that institutional strengthening of the association was inadequate. From the time a diagnostic study was undertaken in 1996, in which problem areas were identified, very little had been done to improve its status. In particular:

- The association, on its own, tried to review its mission and to draft a new memorandum and articles of association. At the time of undertaking the study, new write-up was still awaiting expertise advice before it could be adopted by the association.
- Membership development was moving slowly, mainly because of not having a strategic membership development plan in place . Out of the 30 registered members, 20 were active.
- The management and information system was still weak due to lack of a proper filing system and the fact that the system was yet to be computerised.
- Systematic annual planning was still not being done basically because of lack of in-house expertise to guide the preparation of such plans.
- In terms of networking with Government departments, the current scenario reflects dependence on HORTEXA Chairman as an individual rather than as an office bearer.

3.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

Increase in Exports: On the basis of Statistics available from CAA, there were 81 exporters of fresh produce in Uganda as at December 1998. Eighteen of those 81 exporters, who constitute about 23% of the total number, handled approximately 90% of total fresh produce exports. Out of those 18 firms, 13 were IDEA project clients. These alone handled about 75% of the total fresh produce exports. These statistics indicate that IDEA project has been major player in the sector. As regards the volume of exports, there was a general increase since 1993. In all cases the rates of increase have been higher from 1996 -1998 as compared to the period 1993 - 1995 (Table ii).

Table ii : Annual Exports of Selected Fresh Produce : 1993 - 98
(export figures in tonnes)

Commodity	1993	1994	1995	1996	1997	1998
Matooke banana	375	462	420	465	451	451
Apple banana	56	87	79	123	144	111
Hot pepper	5	8	8	25	107	236
Chilli	108	96	87	100	92	170
Okra	19	18	16	35	52	110
Green beans	11	18	16	29	72	119
Passion fruit	5	5	5	58	38	30
Others	241	176	162	150	269	353
Total	820	870	793	985	1225	1580

Source : CAA

Stakeholder's Rating of ADC Support: Whereas there have been other factors contributing to increasing rate in the growth of fresh produce exports, IDEA project assistance was considered by the stakeholders to be a significant factor, especially for hot pepper, green beans and passion fruit (Table iii). Other factors cited were: positive government export policy and increase in air space.

Table iii : Stakeholder's Rating of IDEA Project to Exports of Fresh Produce

Commodity	Contribution of IDEA to Exports	Remarks
Matooke banana	less than 10%	Negligible
Apple banana	10 - 20%	Minimal
Hot pepper	over 75%	Effective
Chilli	25 - 50%	Little
Green beans	50 - 75%	Satisfactory
Passion Fruit	50 - 75%	Satisfactory
Overall Fresh Produce	40-75%	Satisfactory

Source : Exporters and HORTEXA

Reaching the Rural Producers: In terms of rural reach, over 500 rural producers are estimated to have been reached through the ADC interventions in fresh produce. This has created employment for probably over 2,000 people. Rural households have been able to increase their incomes through the sales of fresh produce. Incomes attributed to fresh produce ranged between shs 250,000 and shs 1,000,000 per annum. The incomes so realised have enabled the households improve their socio-economic status.

Meeting Project Goals: With respect to measuring IDEA Project interventions against its goal and objectives, the following conclusions can be drawn:

- There has been significant increases in incomes of rural men and women involved in producing fresh produce. In case of hot pepper, real incomes have increased by 33%, from a low base of Ushs 179,000 in 1997 to Ushs 290,000 in 1998 per producer. Passion fruit producers, on the other hand, have realised an 8% real increase in incomes from passion fruit, rising from Ushs 350,000 in 1996 to Ushs 461,700 in 1998.
- National exports of hot pepper grew by 120% while in the case of passion fruit, national exports declined by 21% annually from 1996 through 1998.
- The total value of fresh produce exports from Uganda was estimated at over US \$ 1.5 million in 1998. This estimate surpasses IDEA Project LOP target of US \$ 0.37 million worth of annual fresh produce exports.
- The gender distribution in the production and marketing of fresh produce indicates that 30% - 40% of producers in the sample districts are women. Similarly, approximately 37% of the hired labour force constitutes women. While this percent represents significant milestone towards the IDEA project target of 40%, they suggest that ADC should emphasize women involvement in its promotional activities.

3.2 Recommendations

With a view to consolidating the gains made and ensuring expansion and sustainability, the following areas are suggested for future project interventions:

- Strengthening and empowering associations.
- Monitoring use of research funds and outputs more closely.
- Selective promotion of progressive farmers and exporters. It is not very beneficial to scatter assistance. Grants to individual exporters have been inadequate. There is a need to increase level of assistance and also move producers from small to large scales.
- ADC should effectively participate in the on-going policy dialogue on agricultural modernisation, with a view to developing agricultural export zones.
- ADC should consider supporting construction of farm infrastructures especially basic pack houses and development of better packing materials.
- Diversification of the commodity base being handled by the ADC is essential if producers are to maximise profits. The ADC should consider diversifying both coverage and products.
- Continued training is necessary to ensure that the gains so far made on the technical front are sustained. ADC should therefore intensify training of producers and buyers
- Demonstration plots should be encouraged, particularly for passion fruit.
- With a view to increasing the level of women participation in fresh produce, the ADC should emphasize women involvement in its promotional activities.

1.0 INTRODUCTION

1.1 Background and Purpose of the Study

The Uganda's Investment in Developing Export Agriculture (IDEA) Project was initiated in March 1995 with the goal of increasing rural men's and women's incomes. The Agribusiness Development Centre (ADC) has over the last four years assisted agribusiness firms and associations expand production and marketing of selected non-traditional agricultural export (NTAE) crops and products. The ADC client portfolio as well as commodity mix has over the years increased in line with demand for its services. Fresh produce is one commodity mix where considerable amounts of resources (both human and financial) have been put in by the IDEA project by ways of technical assistance, financial intermediation, market linkages and research.

In order to measure the impacts associated with IDEA project interventions on fresh produce growers, traders, exporters and the Ugandan economy at large, the ADC commissioned an impact assessment study. The purpose of this study was to measure the IDEA Project's progress towards achieving its goal of increasing rural men's and women's incomes. In particular, the study was meant to:

- i. Assess the adequacy, relevance and effectiveness of project interventions undertaken since 1995.
- ii. Identify IDEA Project activities that were of direct or indirect socioeconomic benefit to growers, buyers and exporters of fresh produce.
- iii. Seek the views of growers, buyers, exporters and other stakeholders to determine future project activities that could sustain the production and marketing of fresh produce.

1.2 Scope

The scope of the study was defined under the Terms of Reference (TOR) contained in Annex I. In line with those TOR, the study covered all buyers and exporters of fresh produce assisted by IDEA Project. On the production side, it concentrated on growers in Bushenyi, Kasese, Masaka, Mpigi and Mubende. These districts were selected because they were the main suppliers of the four fresh produce crops that IDEA Project was promoting. The main aspects assessed in the study are summarized below:

Average yield levels and output of fresh produce.
Estimated national production levels.
Varieties grown and production technologies used.
Farm labour utilization by gender.

Average prices offered to producers.
Volumes and values of fresh produce exported and sold locally.
Household income levels and incomes attributed to fresh produce.
Decision making in the utilization of fresh produce incomes.
Social and nutritional status of growers.
Description of the market set up.
Employment by exporters and buyers, and wage bills by gender.
Backward, forward linkages and multiplier effects associated with production and marketing of fresh produce.
Perceptions on contributions of IDEA Project and where future project interventions should focus.

1.4 Methodology Used

1.4.1 Approach to the Study

The starting point was to take a macro-economic view of the fresh produce sub-sector. To obtain this view, time series data were gathered covering the period 1995-1998. Then, the assessment was extended to the micro level to arrive at firm-level and people-level impacts.

In assessing impacts, the study followed the intervention paths employed by IDEA Project in channelling assistance to its clients. In particular, the consultants made the first stop-over at IDEA Project offices. Here, the consultants obtained information on specific project interventions undertaken, details about beneficiaries as well as IDEA Project's self-assessment. The next stop-over was at Horticulture Exporters Association (HORTEXA). Thereafter, a census study of beneficiary exporters was undertaken. Finally, case studies were carried out on green beans, okra and hot pepper while sample surveys were conducted on passion fruit and apple banana.

Two approaches of comparative analysis were used. First, a trend analysis of the Project's impact was obtained by compiling data dating as far as 1995. The second approach - the counterfactual approach - helped to isolate unintended impacts from intended impacts.

1.4.2 Sampling Procedure

The study areas were demarcated in the TOR to include Bushenyi, Kampala, Kasese, Masaka, Mpigi and Mubende districts. From these districts, all fresh produce exporters assisted under IDEA Project were sampled. One case study of green beans was

undertaken at Mairye Estates¹ in Mpigi district. Another case study was undertaken for hot pepper and okra at Mubuku Irrigation Scheme in Kasese district. Three samples of ten passion fruit farms were selected in Bushenyi, Kasese and Masaka districts. In Mubende district, one apple banana farmer/exporter assisted by IDEA Project and one non-beneficiary were studied. Annex II provides the list of ADC fresh produce clients that provided a frame of respondents.

1.4.3 Data Collection Methods

Export data: Total volumes of fresh produce exports were obtained from internal records of IDEA Project. These total exports were broken down by crop rather than by exporter. The primary source of the data was reported to be Phytosanitary Department, Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) in Entebbe. The data were then cross-checked against secondary data published in the *Background to the Budget*. Additional data, showing aggregate fresh produce exports, by firm, were obtained from IDEA Project. Their primary source being CAA. These were cross-checked against responses from exporting firms. While MAAIF's Phytosanitary Department data showed a macroeconomic view of the fresh produce sub-sector, CAA data provided a basis for estimating the market share of IDEA Project clients. Export prices for each fresh produce crop were gathered from exporters and quoted at Cost and Freight (C&F).

Perceptions on interventions undertaken: From HORTEXA, a list of paid-up members was obtained. A focus group discussion was held with HORTEXA's executive committee to gather their perceptions on the adequacy, relevance and effectiveness of IDEA Project's assistance on one hand, and their needs for further assistance on the other hand. Views were also gathered from individual buyers, exporters and growers.

Production and internal marketing data: To estimate national production levels of the selected fresh produce, data were gathered through key informant interviews with exporters, District Production Officers and IDEA Project Field Coordinators in the sample districts. At the farm level, producers were interviewed for each target crop to provide information on farm output, production methods, yields, labour utilization, domestic prices, sales and socio-economic status. Up to 40% of the respondent farmers were females as required under the TOR.

¹ Mairye Estates is the single producer and exporter of fresh beans that received significant support from IDEA Project in business planning, research, training and marketing.

Data collection instruments: The checklists attached in Annex III (a), Annex III (b) and Annex III (c) were used to collect internal data from IDEA Project office, HORTEXA and fresh produce buyers/exporters, respectively. At the farm level, the questionnaire used is attached in Annex III (d).

1.4.4 Data Analysis and Reporting

The data gathered were entered in Quattro-Pro and exported to SPSS for analysis. In SPSS, descriptive statistics, including the mean, mode, range and frequency distribution were generated. Ordinal ranking was employed to prioritise qualitative aspects. In assessing the size and direction of IDEA Project's impacts, current findings were compared and contrasted with existing baseline information. Farm-level findings from different sample areas were also compared and contrasted. In addition, the study used the counter-factual approach to isolate unintended impacts from intended impacts. This was done by comparing IDEA Project's fresh produce objectives-matrix to the field results obtained from the study.

2.0 EXTENT OF ADC/IDEA PROJECT INVOLVEMENT

2.1 IDEA Project Environment

IDEA Project was initiated in March 1995. It is a five-year project funded by United States Agency for International Development (USAID), executed by Chemonics International Inc. based in United States of America (USA), and implemented by Agribusiness Development Centre (ADC) in Uganda. The Project works with four subcontractors from USA, two subcontractors from Uganda and Non-Traditional Agricultural Export (NTAE) stakeholders. These stakeholders include NTAE associations, Makerere University (MUK), National Agricultural Research Organisation (NARO), Uganda Export Promotion Board (UEPB), Uganda Investment Authority (UIA) and other line departments in the Ministries of Trade and Industry (MTI), Finance, Planning and Economic Development (FPED) and Agriculture, Animal Industry and Fisheries (MAAIF).

2.2 Project Goal, Objectives and Targets

2.2.1 Project Goal

The goal of IDEA Project is to contribute to USAID's strategic objective of increasing rural men's and women's incomes. That goal would be measured against:

Indicator 1: Increases in rural men's and women's household expenditures that match the growth rate in the value of agricultural production.

Indicator 2: Increases in rural incomes from production of NTAEs that match the growth rates in NTAE exports.

Indicator 3: At least 10% growth in the value of NTAEs per annum.

2.2.2 Project Objectives

The broad objective of IDEA Project is to increase production and marketing of selected NTAEs. In the case of fresh produce, that increase would be achieved through:

Indicator 1: Fresh produce exporters initiating and expanding activities.

Indicator 2: Increase in export values of fresh produce to at least US \$ 0.37 million FOB per annum.

Indicator 3: At least 50% of those engaged in fresh produce being women.

2.2.3 Fresh produce output targets

Fresh produce falls in the High Value (HV) component² of IDEA Project. Other crops in this component are flowers, oils and spices. The three main HV output targets which were planned for the Life of Project (LOP) may be summarised as follows:

Output 1: HV crop research contracts and trials completed within LOP=15 contracts.

Output 2: Firms receiving specialized technical assistance, adopt improved practices and increase value of production by 10% = 7 firms.

Output 3: A commodity information system established by ADC and being utilised by export firms.

2.3 Baseline Indicators on Fresh Produce

The concept of fresh produce in horticulture refers to a wide range of fruits and vegetables. Whereas the range of these crops grown in Uganda is estimated at thirty, twenty six are considered to be of commercial importance (*Food and Agriculture Organization of the United Nations, 1995*). Additional statistics from Civil Aviation Authority (CAA) indicate that, out of these twenty six commercial crops, twenty two are the major ones exported (Annex IV). For the purpose of this study four crops were studied in detail, viz., apple banana, passion fruit, green beans and hot pepper.

² IDEA Project consists of two commodity components and five support components. The two commodity components cover high and low value crops. Support components, on the other hand, include: i) creation of business and financial linkages, ii) strengthening associations, iii) education and training, iv) monitoring and evaluation and v) project management.

The baseline indicators used were obtained from three consultancy reports conducted under IDEA Project by Vinlaw Associates Ltd (1996, 1997) and ClearConsult (U) Ltd. Additional indicators were obtained from a diagnostic report on HORTEXA conducted by Agribusiness Development Centre (1996) and from internal records at ADC.

Internal records at ADC indicate that export values of fresh produce exports were generally declining when IDEA Project was initiated in 1995. From a level of only US \$ 0.63 million in 1995, the export value of fresh produce has since sharply increased reaching a level of US \$ 2.30 million in 1998.

According to CAA statistics, the number of fresh produce exporters was twenty five as at end of 1996. A consultancy report by ClearConsult (U) Ltd (1997) indicates that, of those twenty five exporters, IDEA Project was providing assistance mainly to four firms, namely: Fruit Pack Ltd, Coseda Ltd, Jaco Commercials and Free-Chem Suppliers Ltd. Out of 985 mt of fresh produce exported from Uganda in 1996, these four IDEA Project beneficiaries exported about 262 mt, representing 26% of the total.

At the farm level, the total number of fresh produce out-growers reached by IDEA Project was 105 by 1996. For a typical out grower, the percentage contribution of passion fruit to total household income was estimated at 10% in 1996. For other fresh produce crops, average percentage contributions were as summarized in Table 2.1 below:

Table 2.1: Contribution of Fresh Produce to Household Income

Incomes (Ushs)	1994	1995	1996
Annual average household income	1,540,000	1,850,000	2,350,000
Annual income attributed to fresh produce	320,000	500,000	1,150,000
Contribution of fresh produce	21%	27%	49%

* Source: ClearConsult (U) Ltd (1997), Assessment of ADC/IDEA Project's Impacts in Promoting Fresh Produce in Uganda, Table 4.6.

Other baseline indicators, particularly regarding average farm size, output, yields and farm gate prices are summarized in table 2.2 below. From the table, it can be seen that:

- i. Farmers were expanding acreage of fresh produce over the period 1994-1996. Similarly farm output was increasing.
- ii. Farm yields were generally constant for passion fruit, hot pepper and okra but declining in the case of apple banana.

- iii. Nominal producer prices were rising steadily, especially for passion fruit and apple bananas. Even when those nominal prices are deflated using the composite consumer price index, the resulting real producer prices still depict an increasing trend.

Table 2.2: Selected Farm-Level baseline Indicators

Baseline Indicator	Passion Fruit		Hot Pepper		Okra			Apple Banana		
	1995	1996	1995	1996	1994	1995	1996	1994	1995	1996
Ave output (kg/farm)	1,503	1,950	40,000	91,600	38,800	38,880	65,000	400	400	750
Ave farm size (acres)	1.5	1.8	1.5	3.5	1.5	1.5	2.5	0.5	0.6	1.5
Ave yields (kg/acre)	1,002	1,083	26,667	26,667	25,866	25,866	26,000	800	667	500
Npp (shs/kg)	250	600	n.a	600	350	400	550	n.a	286	417
Composite CPI	106.6	114.2	106.6	114.2	100	106.6	114.2	100	106.6	114.2
Rpp (shs/kg)	235	526	n.a	526	350	375	482	n.a	268	365

Note : Npc = Nominal producer prices; Rpp = Real producer prices; n.a = not available.

A last baseline indicator concerns the institutional set-up. According to a diagnostic study conducted by ADC in February 1996, HORTEXA was experiencing serious institutional problems at that time. The study, which rated HORTEXA's performance against ten areas of association management, indicated that HORTEXA was experiencing "serious problems" in seven areas³ and prone to "potential problems" in two other areas⁴.

2.3 Summary of Interventions Undertaken.

Over the period 1995-1998, IDEA Project provided assistance to thirty one fresh produce clients. Two of the clients were umbrella organisations, fifteen were exporters, six were buyers while eight were producers. A list of these clients can be referred to in Annex II. Out of the

³ The seven areas were: Statement of purpose and goals, membership development, organisational structure/documentation, programs and services, information management, handling of government affairs, and communications.

⁴ The other two areas were: Role of governing body/officers/directors, and financial management/control.

thirty one clients, fifteen⁵ received significant⁶ direct assistance. In terms of commodity coverage, the assistance focussed on apple banana, matooke banana, chilli, green beans, hot pepper, mushroom, okra and passion fruit. The assistance, which was in the forms of grants and technical advise, covered feasibility studies, irrigation, marketing, research and training as well as strengthening institutional and farm infrastructures. In Annex V, key interventions undertaken are elaborated. Table 2.3 below provides the summary by activity type, amount of grants given and technical assistance offered.

Table 2.3: Summary of Key Interventions Undertaken in Fresh Produce

Activity Type	Clients reached	Grant value (US\$)	TA (days)	ADC's expected Impact ⁷
Research	6	152,000	215	Low to high
Feasibility study	1	Nil	5	High
Training and marketing	11	170,000	480	Low to high
Institutional strengthening	1	72,000	200	Medium
Irrigation	1	12,000	20	Medium
Strengthening farm infrastructure	2	16,000	45	Low to medium

* Source: IDEA Project internal records.

⁵ Most clients received more than one category of assistance.

⁶ Direct assistance is said to be significant if it amounts to at least US\$ 5,000 in form of a grant or 50 person days of technical advice.

⁷ "Low" means no tangible exports directly resulting from IDEA assistance; "medium" means less than US\$ 50,000 FOB worth in exports resulting from IDEA assistance; "High" refers to more than US\$ 50,000 worth of exports.

3.0 COMMODITY FINDINGS AND ANALYSES

This chapter presents and analyses findings of the study on individual crops studied and on HORTEXA as a fresh produce association. Each section is introduced with a statement of IDEA Project assistance to form the basis for analysing findings. Perceptions of respondents are then discussed with a view to determining future project activities that could sustain the production and marketing of fresh produce.

3.1 Passion Fruit

3.1.1 Assistance Provided

In 1995, IDEA Project provided a grant of US\$ 10,000 to HORTEXA to undertake research on how to promote the production of exportable passion fruit in Kasese district. According to HORTEXA Executive Committee, the research on passion fruit identified farmers in Ibanda, Kilembe and Kitchwamba sub-counties, organized them into a producers' association, trained them on how to harvest, handle and grade passion fruit for export, and introduced to them a private buyer/exporter- Free-Chem General Suppliers Ltd. IDEA Project further put in 30 days of technical advice during the research exercise.

With a view to strengthening the role of private buyers/exporters in the marketing of passion fruit, IDEA Project extended further assistance to Free-Chem General Supplies Ltd over the period 1996-1998. It provided training in post harvest handling methods to Free-Chem Managing Director. IDEA also linked Free-Chem to three importers, one in Holland (1997), the second in U. K (1997) and the third in Germany (1998). In addition, IDEA subsidized Free-Chem's trial shipments to these three export destinations. For the various types of assistance, the grant utilized by Free-Chem amounted to US\$ 5,000.

Other beneficiaries of IDEA Project's assistance in production systems and marketing during 1997 to 1998 were: Ageti Farmers and Kingo Women's Association. Ageti Farmers received 20 person days of TA while Kingo Women's Association got a grant of US\$ 9,000 followed by 30 person days of TA. On a regular basis, IDEA has continued to monitor the quality, quantity and prices in the export market and to disseminate this information to Ugandan exporters through weekly market bulletins.

3.1.2 Production of Passion Fruit

There are hardly any national production data from MAAIF's Statistics Department that are dis-aggregated for each fresh produce crop. However, responses from Free-Chem, which is a leading passion fruit exporter, suggest that the following districts are

the major producers of passion fruit: Kasese, Kabarole, Mbale, Masaka, Bushenyi, Nebbi, Mubende, Kisoro, Iganga, Kamuli and Bundibugyo.

The main variety grown is the small local purple (*Passiflora Spp*) although the big purple variety (*Kawanda Hybrid*) is beginning to spread. Estimates obtained during this study from District Agricultural Officers in Kasese, Mbale, Masaka and Bushenyi show production figures for 1998 as indicated in Table 3.1 below:

Table 3.1: Passion Fruit Production Statistics for Selected Districts (1998)

District	Estimated no of farms	Total area (acres)	Estimated output (mt)
Kasese	6,000	1,486	169 ⁸
Kabarole ⁹	Not known		250
Mbale	3,800	1,110	570
Masaka	3,200	580	430
Bushenyi	3,000	370	375

* Source: Survey responses.

The District Agricultural Officers interviewed estimated that the five districts listed in table 3.2 contribute between fifty and sixty percent of the passion fruit produced in Uganda. Similarly, key informants in MAAIF's Statistics Department estimated that these districts produce at least 50% of the national passion fruit output. On the basis of these estimates, the national production of passion fruit for 1998 could have been between 2,900 mt and 3,600 mt. Passion fruit is a small holder crop. The average farm size ranges from 0.20 to 0.25 acres per farm. In Kasese, Kabarole, Bushenyi and Masaka, where IDEA Project has been actively involved in promoting passion fruit since 1996, outgrowers have increased area under the crop to an average of 1.15 acres. A typical outgrower obtains 958 kg per annum, giving a yield of 908 kg/acre¹⁰.

⁸ The low production figure for Kasese is attributed to the insurgency that continued to prevail through the year 1998.

⁹ This production estimate for Kabarole was based on interview responses from Free-Chem.

¹⁰ These figures represent overall averages for Masaka and Bushenyi. Data for Kasese district for the years 1997 and 1998 have not been included in the computations because the insurgency that was prevailing makes such data biased.

Table 3.2: Selected Farm Level Indicators (per household)

Particulars per farm	1995	1996	1997	1998
Area (acres)	0.8	0.8	0.75	1.15
Output (kg)	510	624	573	958
Yield (kg/acre)	882	912	893	908
Quantity marketed (kg)	434	537	493	824
%of output marketed	85 %	86 %	86 %	86 %

* Source: Baseline Study and current survey findings.

According to the findings presented in Table 3.2 above, there was a general decline in acreage, farm output, yield and marketed output in 1997 as compared to 1996. This was because some outgrowers in Kasese district started abandoning their farms due to insurgency. In effect, exporters switched to Masaka and Bushenyi districts for sourcing supplies of fresh passion fruits. However, Masaka and Bushenyi being new source areas, it turned out that their acreage and output were generally lower. When current findings are compared to baseline indicators, it is noted that acreage for typical outgrowers in Masaka and Bushenyi districts are approximately equal to a half of those recorded in Kasese during 1995 and 1996. The corresponding proportion for output per farm is about one third. However, as Free-Chem continued to procure passion fruits from these new source areas, outgrowers gained confidence and started increasing acreage and output. This is the major reason why the picture in 1998 represents a major improvement over 1997. Table 3.3 provides details about basic characteristics of passion fruit farms in Bushenyi, Masaka and Kasese.

Table 3.3: Basic Characteristics of a Passion Fruit Farm (1995-1998)

Particular	Masaka				Kasese				Bushenyi			
	'95	'96	'97	'98	'95	'96	'97	'98	'95	'96	97	98
Area (acres)	1.4	1.3	1.1	1.9	1.4	1.3	1.1	0.9	0.2	0.2	0.3	0.4
Output (kg)	814	104	838	1507	1020	960	363	102	205	205	307	409
Yield (kg/acre)	740	802	762	793	728	738	330	114	1023	1022	1024	1023

From the above table, two issues pertinent to promoting the production of passion fruit in the new areas arise. The first issue concerns the farm size. There are many small-holder producers in Bushenyi district, with average farm sizes ranging from 0.2 acres

to 0.4 acres. On the other hand, there are a few producers in Masaka, with large farms of 1.4-2.0 acres but realizing low yields. These findings suggests that ADC's future efforts should focus on identifying progressive farmers to be promoted in both districts beyond the small holder status.

The second issue concerns yields. In Bushenyi, the 1998 average yield recorded for a typical outgrower is 1,023 kg/acre (or 2,530 kg/ha). This compares favourably to the baseline yield recorded in Kasese in 1996 at 2,400 kg/ha. In Masaka, the 1998 yield is approximately 793 kg per acre (or 1,960 kg/ha). The range in yields between Bushenyi and Masaka is 570 kg/ha. Given that the optimum yield for the Ugandan local purple passion fruit should be 2,700 kg/ha, it becomes clear that ADC should put a lot of emphasis on increasing productivity of passion fruit, particularly in Masaka.

In pursuing improvement in yields, ADC will need to appreciate the current agronomic practices, climate as well as soil conditions in the producing areas. Farmers interviewed during the study indicated that the key production inputs are seedlings, staking material, poles and chemicals. These inputs are, however, difficult to come by as there is no formal input delivery mechanism in place.

Most of the farmers (85%) had not been exposed to any training in passion fruit production. Only 10% acknowledged receiving extension support. Therefore, the key production problems identified are:

- i. Inadequate capital for expanding farms.
- ii. Scarce and expensive inputs, particularly chemicals and tools.
- iii. Limited technical know-how in production.

3.1.3 Labour Utilization

Survey findings indicate that there are generally more males than females employed in producing passion fruit. The levels of employment for both males and females are highest in Masaka, followed by Bushenyi and then Kasese. Those levels are directly related to acreage due to the fact that passion fruit production is essentially labour-intensive. In Table 3.4 below, one can see that the average number of family members engaged in producing passion fruit ranges from one to two while the number of hired employees ranges from one to three. In Masaka, the percentage of farmers employing hired labour is approximately 60%. Corresponding percentages for Bushenyi and Kasese are 50% and 30%, respectively.

Table 3.4: Labour Utilisation by Gender for a Typical Passion Fruit Farm

District	Family Labour		Hired Labour		% of farms employing hired labour
	M	F	M	F	
Bushenyi	2	2	1	1	50 %
Kasese	1	1	3	1	30 %
Masaka	2	1	3	2	60 %

* Source: Survey data from sample producers.

Basing on the employment figures in above, and the numbers of outgrowers in each district (see section 3.1.4), current aggregate employment created by the 245 passion fruit farms can be estimated at 571 jobs. Out of these jobs, 333 are household members engaged on their own farms while 238 are hired labourers.

Table 3.5: Employment Creation in Passion Fruit Production

District	Registered Outgrowers		Estd Family Labour		Estd Hired Labour		Total Labour
	M	F	M	F	M	F	
Kasese	39	26	39	26	35	8	108
Bushenyi	12	8	24	16	6	4	50
Masaka	40	28	80	28	72	34	214
Kabarole	72	48	72	48	65	14	199
Total	151	94	215	118	178	60	571

* Source: Survey data from sample producers and Free-Chem.

The employment generation by passion fruit exporters in this study was limited to Free-Chem, being the firm that has received significant support from ADC. Free-Chem reported employing a total of 36 employees at various levels as follows:

Staffing Level	Number of Staff
Managing Director	1
Export Assistant	1
Field Coordinators	
- Kabarole	15
- Masaka	16
- Mityana	3
Total	36

3.1.4 Passion Fruit Marketing

The main market outlets for passion fruit have been private buyers from urban areas such as Kampala and institutions. The main marketing mechanism has been the rural market. According to information gathered from key informants in urban and rural markets in Kasese, Masaka and Bushenyi, it is estimated that at least 80%-90% of producers effect all their sales of passion fruit in the rural market. Another 10%-15% may sometimes sell directly in urban markets. Prices at the farm gate, rural and urban markets are determined through negotiation, depending on the forces of demand and supply. Overall, 86% of the respondents agreed that the volume of passion fruit they sell at the farm gate does not exceed 5% of total sales. The rural market is, therefore, the major market for passion fruit in Uganda.

Further assessment indicated that this rural market for passion fruit consists of two segments. In the first segment, there are export collection centres while in the second segment there is an open local market¹¹. The export collection centre typically has an exporter, who procures passion fruit from a group of outgrowers. Marketing in this center is controlled by the farmers' group. Masaka, Kabarole, Kasese and Bushenyi districts, for instance, have ten such collection centres for Free-Chem. The number of export collection centers and registered members in each district are as follows:

District	No of Centers	Total Suppliers Registered	Number of Men	Number of Women	% of Women
Kasese	3	65	39	26	40%
Bushenyi	1	20	12	8	40%
Masaka	1	40	28	12	30%
Kabarole	5	120	72	48	40%
Total	10	245	151	94	38%

Passion fruit farmers have been trained in quality assurance and post-harvest handling. This has proved useful as it has helped farmers maintain quality. The numbers of farmers trained in grading and packaging for export were as follows:

District	Place	Number Trained	Out of	% Trained
Kabarole	Rubona	7	120	6%
Kasese	Ibanda	31		
	Kyondo	11	65	65%
Bushenyi	Buhweju	15	20	75%

¹¹ In the open local market, on the other hand, there are many individual sellers and many individual buyers with free entry and free exit.

Passion fruit prices differ from place to place, from one season to another and from market to market. In the districts of Kasese, Masaka, Bushenyi and Mbale, passion fruit prices generally vary as follows at successive marketing levels:

Farm gate:	Rural Market:	Collection Center ¹²	Urban Market:
Ushs 350-600/=	Ushs 650-700	Ushs 750-850	Ushs 800-1,100

When 1997-1998 producer prices are compared to the baseline position, an increase both in nominal and real terms is observed.

Table 3.6: Passion Fruit Producer Prices (1995-1998)

Year	1995	1996	1997-1998
Nominal producer price (shs/kg)	250	600	800
Composite CPI	106.6	114.2	130.0
Real producer price (shs/kg)	235	526	615
Percentage change	-	124 %	17 %

* Source: Vinlaw Associates Ltd (1997) and Free-Chem General Suppliers Ltd.

The current study further established that the rural open market segment is the price setter while the export collection center is a follower. Under this price setting mechanism, the maximum price offered in the local open market is ideally the minimum procurement price in the export collection center. However, for the exporter to profitably procure passion fruit for shipment to overseas markets, this rural convergence price must be sufficiently low to be accommodated within a given export price and shipment costs.

According to Free-Chem, when the convergence price rises to Ushs 2,500/= per kilogram, the company suspends exports¹³. This means that, during periods of scarcity, demand in the local open market has to be satisfied before the export collection center is supplied. For this reason, passion fruit exporters believe that, for Uganda to promote

¹² The prices quoted are for a kilogram of *Passiflora* Spp. Corresponding prices for the Kawanda Hybrid range from Ushs 500/= to 600/=. The differences between the price at the collection centre and that in the open rural market represents a premium for better quality.

¹³ This decision rule is based on a case study of Free-Chem. It assumes that the C&F price for passion fruit is UK Pounds 1.75 per kg.

exports, there is a need to increase local production to such an extent that the resulting excess supply can maintain prices in the rural open market below export parity.

With an average sale of 577 kg in 1998, a typical farmer received Ushs 461,700 from sales of passion fruit. Household incomes, however, varied from one district to another. Trends in quantities sold and incomes earned are presented in Table 3.7.

Table 3.7: Sales for an Average Passion Fruit Farmer

Particular	Masaka				Kasese				Bushenyi			
	'95	'96	'97	'98	'95	'96	'97	'98	'95	'96	'97	'98
Sales(kg)	692	897	721	1292	867	826	312	88	174	176	264	352
Income realised (shs'000)	173	538	576	1033	216	4956	249	70	44	106	211	282

It may be noted from the above table that the quantities sold in Masaka and Bushenyi have increased from 1995 to 1998 while those sold in Kasese have declined. However, marketed output as a percentage of total output remained relatively the same i.e. 85% in 1995 to 86% in 1998. The increases in prices from Ushs 250/= per kg in 1995 to Ushs 600/= per kg in 1996 and to Ushs 800/= per kg in 1997-1998 have also contributed to the marked increase in sales income.

3.1.5: Household Incomes for Passion Fruit Producers

Farmers were asked to identify their income sources in 1998. Table 3.8 gives average income levels for farmers in the three districts studied.

It is clear from the above table that passion fruit accounts for a small proportion to household income, ranging from 5% in Bushenyi, 10% in Kasese to 15% in Masaka. When compared to the baseline indicators taken from Kasese in 1996, it becomes clear that Passion fruit still contributes the same percentage to household incomes in Kasese. Farmers in Masaka earn a higher proportion of income from passion fruit (15%) compared to farmers in Bushenyi (5%).

Findings further show that passion fruit generated about three times more income in Masaka in 1998 than it did in the baseline period of 1996 in Kasese. In Bushenyi, the income earned from passionfruit is relatively lower because acreage is small. The main reason why passion fruit contributes hardly 15% to household incomes in the three districts is that producers depend on other agricultural commodities for 40%-60% of

their incomes. In Bushenyi and Masaka, the predominant agricultural activities are tea, coffee, banana growing as well as cattle keeping. In Kasese the other main agricultural commodities are coffee, maize, beans and vegetables.

Table 3.8: Household Incomes for an Average Passion Fruit Producer

Income Source	Baseline (1996)	Masaka (1998)		Kasese (1998)		Bushenyi (1998)	
	Amount (Ushs)	Amount (Ushs)	% of total	Amount (Ushs)	% of total	Amount (Ushs)	% of total
Passion fruit	350,000	1,033,600	15%	70,400	10%	281,600	5%
Other fresh produce		206,718	3%	35,200	2%	337,020	6%
Other Agric. commodities	300,000	2,756,240	40%	387,200	55%	3,379,200	60%
Other sources	520,000	2,201,550	32%	211,200	30%	1,633,280	29%
Total	1,170,000	6,201,550	100%	704,000	100%	5,632,000	100%

3.1.6 Social Status of Passion Fruit Producers

It was not possible to obtain reliable estimates of the expenditure patterns of passion fruit producers. This inability meant that the income and expenditure sheets could not be reconciled. However, going by the income levels, passion fruit contributes 5%-15% to an average producer's total income. On this basis, it is logical to postulate that passion fruit production has contributed 5%-15% to household expenditure. This has, in effect, contributed¹⁴ to improvements in the social status of producers as represented in Table 3.9.

¹⁴ Although it was beyond the scope of this study to establish the actual percentage contribution of passion fruit to the standards of living of producers, it can be argued that the maximum contribution of passion fruit could not have exceeded 5% in the case of Bushenyi, 10% in Kasese and 15% in Masaka. These percentages represent the contribution of passion fruit to total household incomes.

Table 3.9: Social Indicators

Indicator	Baseline (1995)	1996/97	1997/98
Ability to send children to school (%)	40	85	90
Living conditions (% Good)	30	50	70
Lack of treatment (%)	8	0	0

* Source: Baseline Study and survey results

Note: Increase in percentage of school age children in school is also attributed to the Universal Primary Education (UPE) program.

3.1.7 Passion Fruit Exports

Passion fruit shipments promoted by IDEA Project started in June 1996. Initial volumes were very low since farmers were just learning quality requirements. Since it was the beginning of the harvesting season, availability of fruits was also poor. As farmers became more sensitized on quality and as the season picked up, there was an increase in the volumes of passion fruit marketed. The main exporter of passion fruits assisted directly by IDEA Project is Free-Chem, although other exporters also benefited through the activities of the ADC in training, research and market development. This firm started exporting passion fruits in July 1997 with two partners. One of the two partners had been a researcher at Kawanda Research Institute (KARI). During 1997, Free-Chem exported 12 mt of passion fruit while in 1998 it exported about 6 mt. These volumes represent 32 % and 20% of all the passion fruit exported from Uganda during 1997 and 1998, respectively.

Whereas the annual volumes of passion fruit exported during 1996-1998 were much higher than those exported from 1993 to 1995, a generally declining trend can be observed, dropping from 58 mt in 1996, 38 mt in 1997 to 30 mt in 1998. This declining trend can be attributed to several factors, the main ones being:

- i. The insurgency in Western Uganda has undermined production of passion fruit in Kasese district, particularly during 1997 and 1998.
- ii. There has been increasing competition on the European export market, arising from increased supply of fresh produce. In the United Kingdom super markets, the main competitors to Uganda are Zimbabwe and Kenya. According to Free-Chem, handling and shipment costs in Uganda are relatively higher than those prevailing in Kenya and Zimbabwe. Therefore, export of passion fruit from Uganda is mainly profitable during bumper seasons, when procurement prices are relatively lower.

The cost of exporting a kg of passion fruit from a supply source (Masaka) through the export point (Entebbe) works out as follows (Table 3.10):

Table 3.10: Cost of Exporting a Box of Passion Fruit

Item	Minimum Unit Cost (Ushs/Box)	Maximum Unit Cost (Ushs/Box)
Handling and sorting at the collection centre	50	60
Transport from collection center to pack house	500	700
Packaging materials	500	631
Transport from pack house to Airport	500	700
Clearing & handling charges	85	100
Air freight	1,820	2,230
Others	235	280
Total Cost Per Box	3,190	4,701

Exchange Rate; 1 British Pound : 2,270 U Shs; 1 US\$: 1, 350 U Shs

Export Price; British Pounds 3.50 - 4.50 per kg.

Weight per box is 2 kg.

It can be seen from Table 3.10 above that it costs Free Chem between Ushs 3, 190 and Ushs 4,701 to move a box of passion fruit from the export collection centre to the U.K market. At this rate, the cost of exporting a kilogram of the local purple passion fruit falls between Ushs 1,595 and 2,350.

For the Kawanda Hybrid, the corresponding costs are Ushs 1,065 and Ushs 1,570. Given export prices of U.K Pound Sterling 4.50 for a box of the local purple variety (or Ushs 5,107.50 per kg) and Pounds 3.50 for a box of the Kawanda Hybrid (or Ushs 2,650 per kg), a trading profit ranging from Ushs 1,080 to Ushs 2,750 per kilogram exported can be realized.

According to Free-Chem the local purple represents about 80% of the total passion fruit exports. Therefore, by applying a weight of 0.8 to the local purple variety and 0.2 to the Kawanda hybrid, foreign exchange earnings can be derived as shown in Table 3.11 below:

Table 3.11: Foreign Exchange Earnings From Passion Fruit

Year	Total Exports (mt)	Total Exports (mt) by Variety		Foreign Exchange Earnings (U.K Pounds Sterling)			Earnings by Free-Chem
		Local purple	Kawanda Hybrid	Local purple	Kawanda hybrid	Total	
1993	5	5	-	10,550	-	10,550	-
1994	5	5	-	10,550	-	10,550	-
1995	5	5	-	10,550	-	10,550	-
1996	58	46.4	11.6	84,354	13,550	97,904	-
1997	38	30.4	7.6	68,400	8,865	77,265	24,275
1998	30	240	6.0	54,000	7,000	61,000	12,200

* Source: IDEA Project internal records and interview responses from Free-Chem.

From Table 3.11 above, it can be seen that IDEA Project assistance has generated medium impact, ranging from U.K Pounds 12,000 to U.K Pounds 24,725 (ie from US \$ 20,514 to US \$ 42,575). In rating ADC's contribution to these earnings, Free-Chem gave it the top rank among others factors, including availability of quality passion fruit from out growers, entrepreneurship and working capital. Added to this is the comparative impact of IDEA's market development work for other exporters of passion fruit.

3.2 Fresh Green Beans

3.2.1 Assistance Provided to Fruit Pack Ltd

In 1996, Fruit Pack Ltd received a grant for pioneering research on the production of green beans for export, from Kabale and Kasese districts. Research activities carried out included identifying potential farmers, giving them inputs (seeds and chemicals) and training them on how to grow, harvest and handle the crop for export.

The results were that, in Kabale, fresh beans did very well. The quality was good; the percentage of streamlined pods being above 80. The maturation period was slow and long due to the cool weather. This gave longer periods of harvesting. However, Kabale had the disadvantage of inadequate land. The land available was swampy, and this was associated with problems of balancing the water level and correcting the acidic soils. In Kasese, although the maturation period was short, there were three main advantages favouring the production of fresh green beans for export. Land was less fragmented, water was available for irrigation at Mubuku and farmers could easily be mobilized into

a producers' association. One bottleneck, however, still remains: the lack of conditioned transportation facilities. The need for such facilities is derived from the facts that Kasese is a distant location from Entebbe airport while fresh green beans are easily perishable. As such, no significant quantities of fresh green beans have been supplied from Kasese to the export market.

3.2.2. Assistance Provided to Mairye Estates Ltd

Mairye Estates Ltd is located in Ntinda village, Busukuma sub-county, Kyadondo county in Mpigi District. The idea to export fresh green beans was conceived by the promoters of Mairye Estates in 1994, following reports of the export potential of these beans. The reports had been published by the then Export Policy Analysis and Development Unit (EPADU).

Over the period 1996-1998, Mairye Estate Ltd benefited from three major type of assistance. In 1996, IDEA Project provided a technical advisor for five person days to study the technical feasibility of growing the crop. During the same year, IDEA Project extended a grant of US \$ 15,000 and 20 person days of technical advice to carry out trials at Mairye Estates on a range of green beans varieties.

Arising from those trials, Paulista bobby beans¹⁵ were developed and are currently being grown commercially at Mairye Estates. IDEA Project offered a second grant of US\$ 10,000; being part payment for the cost of training a farm supervisor, overseas, in technical aspect of growing bobby beans. Additional local training in production and post harvest handling has been provided by IDEA technical advisors for about 40 person days.

3.2.3 Production and Export of Fresh Green Beans

As a result of IDEA Project assistance, Mairye Estate Ltd established a 37-acre farm of green beans in 1996, with a fixed investment of about US\$ 330,000. The yield levels, volumes of export, export earnings and employment generated are presented in Table 3.12. From the table it may be observed that over the two year period, yields have increased by 75%, export volume by 214%, earnings by 301% and employment by 65%.

¹⁵ ADC Commercialisation Bulletin No. 5 indicates that trials on Naitex, Endurance and Celtic varieties of the bobby beans generated only are successful variety, Naitex. Endurance possessed too many curved pods while the yields for Celtec were quite low.

Tale 3.12 : Fresh Beans Export and Employment by Mairye Estates

Variable	1997	1998
Marketable yields (mt/ha)	4.0	7.0
FOB prices (US \$/mt)	0.90	1.15
Export volumes (mt)	32.14	101.00
Export earnings (US \$)	28,930	116,150
Employment	200	330

3.2.4 Other Activities

Mairye is also engaged in exporting flowers. During 1998, the total turnover from flowers amounted to US\$ 528,440. Therefore, exports from fresh green beans contributed about 15% to the firm's total income.

3.2.5 Future Plans

The farm has identified two potential outgrowers within Mpigi District. It is expected that, through Mairye Estates, these outgrowers will be provided with training and technical advice by ADC to enter into production of Paulista bobby beans. The indicative farm gate price fixed by Mairye is US\$ 70 cents per kg (or Ushs 945 at US \$ 1: Ushs 1,350).

3.2.6 Perceptions About IDEA Assistance

The green beans case study is one successful commodity, where IDEA Project has attained significant impact. According to Management of Mairye Estates, IDEA Project assistance has taken Mairye through technical design, production and marketing of the commodity. In rating the factors responsible for the success of the farm, the Management of Mairye gave the following ratings:

Factor:	Ranking (in descending order):	Remarks:
ADC assistance	1	Very Good
Availability of export market	2	Very Good
Availability of water	3	Acceptable
Airport infrastructure	4	Possible problem
Electricity	5	Serious problem

3.3 Hot pepper

Hot pepper is a tropical vegetable, which is adaptable to a range of temperatures and rainfall amounts. The crop is usually a rain-fed crop, but is best grown under irrigation for export. Ideal conditions for pepper growing are deep, well drained, medium textured soils with plenty of organic matter and high fertility (i.e. sandy loam soil is preferable). There are many varieties of hot pepper, each with its own shape, size and colour (red, orange and yellow), taste and pungency. The most common variety in Uganda is derived from *Scotch Bonnet*, often referred to as the "Caribbean" type. The crop takes about 4 months from planting to harvesting.

Production of hot pepper in Uganda dates as far back as 1991. However, market opportunities for hot pepper were not realized fully until 1996. Uganda now exports *Scotch Bonnet* pepper mostly to the United Kingdom and Holland. Imports from Uganda are highest during the winter season because hot pepper is produced in Dutch Greenhouses and, to a lesser extent, in Mediterranean countries during the summer months.

3.3.1 ADC Interventions in Hot Pepper Production and Marketing

Since 1996, the ADC has promoted the growing of hot pepper at two main locations - Mubuku Irrigation Scheme in Kasese and Bujege in Mpigi district. The purpose of promoting hot pepper has been to:

- encourage the production of the crop, which has target markets abroad;
- increase household incomes through the sales of the produce, thereby increasing the economic and social well being of the rural population; and
- introduce this crop farmers can handle - i.e not technically complex and does not require opening large acreage.

In pursuance of the above objectives, the ADC assisted producers and promoters at Mubuku Irrigation Scheme and a private buyer, COSEDA Enterprises Ltd, in Mpigi. At Mubuku Irrigation Scheme, the ADC offered a grant amounting to US\$ 40,000 to facilitate the following assistance:

Provision of 750 kg of NPK fertilizer, 300 kg of DAP fertilizer, 250 kg of UREA fertilizer, 100 kg of Folar fertilizer, 20 kg of Antracol fungicide, 52.5 litres of Dimethoate and 20 kg of Rodomill.

Organising and conducting two seminars/workshops in production and post-harvest handling.

Providing short term technical assistance.

Soliciting/identifying markets and attaching an exporter to the outgrowers.

Providing funds for nursery management.
Financing study tours to Mpigi district.
Organizing trial shipments with a local exporter.
Providing a small grant to assist Mubuku growers to grow and market the crop.
Assisting producers to form an association through which their produce could be marketed.

The promotion of hot pepper in Mpigi district has, on the other hand, been undertaken through direct assistance to COSEDA Enterprises- a private buyer and exporter. In particular, the following assistance has been offered over the period 1996-1998.

On-the-farm training in production and post harvest systems amounting to at least 50 person days of technical advice.

A grant of US \$ 6,000 to facilitate establishment of a nursery, production trials and construction of a pack house. Trials started in September 1998 and were expected to be completed by June 1999.

COSEDA was linked to several market contacts in Europe. Out of those contacts, an export contract was initiated with M/s Highlow B.V in the Netherlands.

COSEDA Managing Director was sponsored to attend a COLEACP¹⁶ meeting on codes of practice and conduct. A draft code of practice for all horticultural exporters (fresh produce and flowers) was prepared by COLEACP members under cost-share funding from European Union (EU), private sector and IDEA Project. The code stipulates minimum social, environmental, food safety and quality standards that all export growers and exporters should meet to obtain certification.

Additional assistance for the promotion of hot pepper was channeled to M/s Mustak Enterprises, through HORTEXA, to establish a supplementary irrigation system. The assistance amounted to US\$ 12,000 and 20 person days of TA.

3.3.3 Production and Marketing Arrangements:

Hot pepper at Mubuku is produced by small holder farmers who on average plant 10 lines (which is approximately 0.25 acres). The farmers are organized under a cooperative society - *Bashaija Kweyamba* - which is charged with the general administration, nursery establishment and maintaining contacts between the producers and buyers. The participating farmer has the responsibility of opening up land, growing, maintaining and harvesting the crop, sorting and transporting it to a

¹⁶ COLEACP is the Organisation for Promotion of European Imports of Fresh Fruits and Vegetables from African, Caribbean and Pacific Countries.

collection centre (which is within the Scheme). Through the cooperative society, the farmer receives seedlings and packing boxes but procures fertilizers and chemicals.

Upon delivery of sorted hot pepper, the produce is weighed and packed in boxes (weighing 4 kg each) and transported to Entebbe for onward flight to Europe. These activities are handled by the cooperative society which is itself the exporter. All the necessary documentation and procedures at Entebbe International Airport are handled by the cooperative society. The farmers are then paid upon receipt of money from the European-based buyer. This takes a period of about two weeks.

Performance: In 1997, a total of 71 farmers were involved in the production of hot pepper. According to Mubuku planting schedule for 1997/1998 season, 20 acres of hot pepper were planted in 1997. In 1998, following lessons learned, the society decided to reduce acreage to a manageable level. The total acreage was reduced to 13 acres and the number of farmers reduced to 58 (43 males and 15 females). Table 3.14 shows area, output, yields and number of producers over the 2-year period.

Table 3.14 : Area, Output and Sales of Hot Pepper at Mubuku

	1997/98	1998/99
Area (acres)	20	13
Output (kg)	70,000	56,000
Yield (kg/acre)	3,500	4,300
Number of producers	71	58
- male	60	43
- female	11	15
Quantity exported (kg)	42,400	56,000
Price per kg	300	300
Total value of produce (shs mill)	12.72	16.80
Average area per producer (acres)	0.28	0.22
Average output sold per producer (kg)	597	966
Average income per producer (shs '000)	179	290

According to the Bashaija Kweyamba cooperative society, the low levels of export (i.e 60% of output) in 1997 was due to the poor marketing arrangement with the previous Ugandan buyer. The reduction in area as well as the number of producers was meant to have a manageable program thereby avoiding losses due to over-supply.

Cost of Production and Marketing: Interviews were held with producers and cooperative society with a view to ascertaining whether profits were being made at the prevailing price of shs 300 per kg. The results are summarised in Table 3.15.

Table 3.15 : Cost of Production of Hot Pepper (Based on a 10-line Field)

Cost item/activity	Costs incurred
Cost of production:	
Land preparation and planting	54,000
Irrigation	34,000
Maintenance	90,000
Chemical/fertilizer application	85,000
Harvesting and transporting to pack house	200,000
Total cost of production (for 10 lines)	463,000
Average yield (kg from 10 lines)	3,200
Unit cost of production (shs/kg)	145
Cost of marketing:	
Packing material (box)	1,000
Transport to Entebbe	1,000
Pack house labour/supervision	120
Association management fee	80
Airport documentation	100
Overhead cost	100
Cost per box (4 kg)	2,400
Marketing cost per kg	600

From the table above, it may be observed that it costs the producer shs 145 to produce a kg of hot pepper while it costs the buyer shs 600 to export a kg of hot pepper.

Benefits: Benefits arising out of the hot pepper scheme in Mubuku and overall ADC intervention in the hot pepper industry point to the fact that Uganda has the potential to become a major supplier of hot pepper. The key benefits arising out of Mubuku Irrigation Scheme are the following:

Reaching the Rural Poor: Through the intervention of the ADC, 71 rural households were directly reached in Mubuku during 1997 and 58 in 1998. With an assumed rate of 7 labourers per acre, the introduction of hot pepper further provided employment for an estimated 140 and 91 casual labourers in 1997 and 1998 respectively.

Increasing Rural Income: On average a hot pepper farmer at Mubuku obtained shs 179,000 in 1997 and shs 290,000 in 1998 from sales of hot pepper. This increase is attributed to increased yields and improved marketing arrangement which greatly reduced losses experienced by farmers. Farmers were asked to list down their household incomes by source. The results are summarised in Table 3.16. From the table, it may be observed that hot pepper is a key commodity for the producers at Mubuku. The contribution of hot pepper to total incomes increased from 39% in 1997 to 49% in 1998.

Table 3.16 : Average Incomes and Contribution of Hot Pepper

Income source	1997	1998
Hot pepper	179,000	290,000
Other fresh produce	150,000	175,000
Other agricultural commodities	75,000	80,000
Livestock and products	30,000	20,000
Business	15,000	10,000
Other sources (including gifts)	5,000	15,000
Total annual income (shs)	454,000	590,000
Share of hot pepper to total income (%)	39	49

Improved Social and Economic Status: Table 3.17 shows selected socio-economic indicators for hot pepper producers interviewed at Mubuku. It may be noted that producers now have better dwelling units, are able to send their children to school and have a much better nutritional status.

Table 3.17 : Selected Socio-Economic Indicators for Hot Pepper Producers

Indicator	1995	1996	1997	1998
% of school-age children actually in school	80	85	95	100
% who live in above average dwelling units	60	70	85	90
% with at least 2 meals with animal protein	50	65	80	90
% unable to receive treatment due to cost consideration	5	3	1	0

Note: Average dwelling units refer to a semi-permanent structure with iron sheets and mud wall.

Quality and Management Capability: Through technical support and training by the ADC, the quality of hot pepper from Uganda has tremendously improved. Farmers are

now fully aware of the need to maintain quality. At the same time, the use of grassroots association has helped build a strong local capacity to manage and outgrower arrangement.

Acquisition of Skills and Technical Knowledge: Through training and technical advise, farmers are now capable of producing high quality hot pepper. Farmers are able to sort, grade and package their produce withy minimum supervision.

3.3.4 Hot Pepper Export

Hot pepper exports have been increasing to Europe over the last five years although the market is still small and mainly consists of consumers from "ethnic minorities". According to *The Background to the Budget* and ADC export statistics, Ugandan export volumes have increased from a low level of less than 8 mt per annum in 1995 to over 100 mt in 1997. It is estimated that the volume of hot pepper exported in 1998 was about 236 mt.

Given a reported FOB price of US\$ 1.35 per kg, the national¹⁷ trends in the volume and value in exports of hot pepper are shown below:

Year	1995	1996	1997	1998
Exports (mt)	8	25	107	236
Foreign Earning(US\$)	10,800	33,750	144,450	318,600

3.3.5 Backward Linkages with Producers

The study further established that COSEDA works with at least 80 small outgrowers in Butambala and Gomba counties in Mpigi District. Of these 80, only 3 consistently supply about 30% of the hot pepper exported by COSEDA. In turn, they receive basic agronomic advice and supplies of seed from COSEDA.

3.3.6 Employment Generation

COSEDA employs five workers. Two of the workers are females engaged in sorting, grading and packing at the pack house. On the basis of data gathered from COSEDA and Mubuku Irrigation Scheme, the total number of households involved in hot pepper production for export in the two districts is estimated at 150, implying over 1,000 jobs.

¹⁷ Data for export volumes was obtained from IDEA project records. National foreign exchange earnings are estimated using the export price reported by COSEDA.

3.3.7 Rating IDEA Project Contribution

According to COSEDA, IDEA Project assistance has achieved medium impact in promoting the production and marketing of hot pepper in Mpigi District. All types of assistance given, namely: market contacts, research and technical advice have been relevant. However, TA was particularly inadequate at the farm level. Out of the 80 or so producers in Mpigi, only three of them could produce hot pepper of export quality. The other 73 lose more than 55% of their produce due to low quality. In this connection, there is a need for more training at the farm level, particularly to meet COLEACP standards that are being put in place. This need suggests that IDEA Project should put more emphasis on demonstration farms and extension services.

The second area where ADC could focus is to facilitate exporters to improve on packaging. In the present forms of packaging, foreign buyers, particularly in the Netherlands, consider packaging of Uganda's fresh produce "unattractive".

At Mubuku, ADC's assistance was rated highly. Both the cooperative society and farmers associated benefits and successes to ADC involvement. The continued technical support and the improved marketing arrangement have been greatly appreciated. There is no doubt that IDEA has been instrumental in promoting all exports of hot pepper on the European market.

3.3.8 Constraints and Considerations

The key production and marketing constraints include inadequate capital, poor methods of transporting the produce to the pack house, lack of proper pack houses, high labour requirements and associated costs, perishability of the produce and scarcity of packaging materials.

The following considerations are paramount to the sustenance of hot pepper production: availability of seed, agro-chemicals and fertilizers, adequate packing boxes, grading facility, motorized transport to collect produce from different divisions to collecting centres, post-harvest handling of vegetable and prompt payments for farmers produce. There is also need for good market communication so that farmers are kept aware of what is happening.

3.4 Apple Bananas

There are two main clients, who benefitted from IDEA Project assistance in promoting the production and exports of apple bananas. These clients are OSU Ltd, a private Company, and Kawanda Research Institute (KARI) of National Agricultural Research Organisation (NARO).

This section concentrates on the relevance, adequacy and impact of the assistance that was given to OSU Ltd. Section 3.5 that follows discusses the grant assistance offered to KARI.

3.4.1 Assistance to OSU Ltd

During 1997, OSU Ltd got a grant of US\$ 6,000 from ADC. The grant was disbursed in form of fertilizers, herbicides and materials for conducting production trials. Through 1998, OSU Ltd continued to receive technical advice on production and post harvest handling methods.

In addition to the assistance extended directly to OSU Ltd, ADC undertook a study of the U.K apple banana market as a major step in promoting Ugandan exports. Trial shipments were made in 1997 and recommended commodity specifications were packaged to guide prospective exporters.

3.4.2 Production and Marketing of Apple Bananas

The growing of apple bananas was initiated in 1996 with 50 acres under the crop. Acreage remained constant through 1998. Harvesting began in 1997, with about 104 mt. As more of the crop continued to mature, output increased to 208 mt in 1998. Whereas the farm applied chemicals and fertilizers during 1997, it employed organic farming in 1998. The main organic inputs used were coffee husks, animal urine and green manure from the water hyacinth.

Since the owner was unable to make the necessary minimum investment to achieve the quality standards of overseas buyers, the apple bananas harvested during 1997 ended on the local market. According to interview responses from the promoter, about 400 kg (or four 100kg bags) of apple bananas were sold per week in 1997 at prices ranging from Ushs 4,000 to Ushs 5,000 per bag. This means that apple banana prices at the farm gate ranged from Ushs 40 to Ushs 50 per kg. These prices were about a half of the indicative farm gate prices¹⁸ that had been compiled by ADC during its marketing trials to U.K. Even at these low prices, only 20.8 mt out of 104 mt produced in 1997 was sold. The balance of 83.2 mt is said to have rotten in the garden.

Early 1998, with ADC assistance, a buyer was identified in Sweden. Following this outlet, OSU Ltd exported low quantities in 1998. However, in December that year, OSU Ltd suspended exports because export prices were relatively low while payments were often delayed.

¹⁸ The farmgate price for a kg of apple bananas (of export quality) was estimated at Ushs 100 at the minimum.

Looking at ADC records on apple banana exports, a steady increase in volume is observed, rising from about 80 mt in 1995 to 123 mt in 1996 and 144 mt in 1997. A decline to 111 mt in 1998 then follows. Given that OSU Ltd started exporting apple bananas in 1998, and that it exported low quantities, who then are the other major exporters in Uganda? A cross-section of HORTEXA members interviewed concurred that there are numerous free-lance agents in Uganda, who buy small quantities of apple bananas and despatch them to their contacts abroad, especially in the U.K. These agents quote a relatively low C&F price, hence, they pose unfavourable competition to regular exporters.

On a positive note, OSU Ltd, through ADC, secured an export outlet in January 1999, for 10 mt per week. Out of these 10 mt demanded, Davula Farm can produce up to 4 mt per week. The challenge facing OSU Ltd, therefore, is to raise the balance of 6 mt per week from other producers, and to achieve export quality. This will require investment from OSU Ltd.

3.4.5 Major Constraints

- i. There is a general lack of data on how much apple banana is produced in Uganda. Besides, much of what is produced does not meet export standards. Only one major firm, OSU Ltd, has so far been targeted for promoting production of apple bananas for export because almost all other production is on stands of less than 1 hectare. With the opening of export outlets, there is an urgent need for expanding production, perhaps through development of agricultural export zones for targeted crops. Since such an approach may entail a transformation from small scale to large scale farming, it is necessary for IDEA Project to network with MAAIF so as to incorporate this strategy into the Plan for Modernizing Agriculture (PMA).
- ii. OSU Ltd, like most other fresh produce exporters, lacks a proper pack house. This manifestation is one characteristic of a general poor export infrastructure for upcoming fresh produce exporters. Other characteristics of the poor export infrastructure are poor roads and poor transport facilities. These lead to damages on the skin of fresh produce, they increase the FOB price and undermine the competitiveness of Uganda's exports.

3.5 Promotion of Research at Kawanda Research Institute

In assessing IDEA Project interventions in promoting research on fresh produce at KARI/NARO, the consultants held interviews with the Institute Director, the Head of Banana

Department and the Horticulture Pathologist. The team also reviewed a final report on the research activities conducted under IDEA project. Essentially, KARI benefitted from a research grant of US\$ 100,000. The research was designed to:

- i. Assess the general yield and quality characteristics of apple banana and passion fruit varieties with an export market potential.
- ii. Obtain basic agronomic information on the crops before they are transferred to farmers.
- iii. Provide convenient sites for demonstration for growers to watch and observe before deciding to produce the crops.

There were three major outputs to be generated from that research. First, performance data of the crops would be obtained. Second, new varieties of high export value would be identified. Third, appropriate technical packages on those varieties would be supplied to farmers.

Activities undertaken included collection of passion fruit germoplasm for evaluation of collar-rot disease resistance, breeding the disease-resistant germoplasm, making on-farm visits and training farmers on how to grow the new varieties.

The following achievement were registered:

- i) Disease-free scions were collected and successfully grafted on to passion fruits with root stock materials.
- ii) 800 Seedlings were given out to farmers .
- iii) The root stocks were evaluated against collar-rot disease and the one from Lira and Mbale were found resistant.
- iv) A demonstration plot was established for apple banana to allow various characterisations and performance data to be obtained.
- v) The visits to farmers and training emphasised on post harvest and handling namely to:
 - Give time for the latex from the bananas to coagulate.
 - Avoid placing clusters on top of each other.
 - Handle bananas very carefully throughout the whole process.

Progress made as acknowledged by both the research team and the director showed the following positive outcomes:

- i) The germoplasm for both passion fruits and Apple Banana was collected and established at Kawanda, Appropriate demonstrations were to follow up.

- ii) A lot of training was given to farmers past harvest handling for both apple banana and passion fruit.
- iii) For passion fruit, there was an important finding on roots, stocks resistant to collar disease got from North Eastern Uganda.
- iv) Useful recommendations for passion fruit were given on controlling mites in Rukungiri, Mbale and Kapchorwa. In Masaka useful recommendations were given on how to control collar-rot disease.

3.6 Institutional Strengthening of HORTEXA

The first major category of assistance given to HORTEXA was in marketing. A grant of US \$ 30,000 was utilised by members of the association over the period 1995-1996 to attend trade shows in Holland, Sharjah and South Africa. In particular:

- i. COSEDA Enterprises Ltd and Inter Fruit Ltd attended a trade show in Holland.
- ii. To South Africa, one company, Allumina Brothers represented HORTEXA.
- iii. Suntrade Consulting Ltd attended a food show in Sharjah.

The overall purpose of attending the shows was to get exporters exposed to those markets. One achievement is that COSEDA now exports hot pepper to Holland. Similarly, Allumina Brothers made several shipments to South Africa but discontinued the business when payments could not be received on time from the importers.

In February 1998, IDEA Project disbursed US\$ 32,100 to HORTEXA for establishment of an office, upgrading farms of HORTEXA members, multiplying seeds, developing export markets, accessing technical supervision and undertakings an evaluation audit. Fruit Pack Ltd, Coseda Ltd, Suntrade Consulting Ltd, OSU Ltd and Mustak were the member firms that benefitted from this grant. The overall aim of the grant was to strengthen existing membership, attract new members, and enhance financial accountability through service delivery. By August 1998, US\$ 20,770 had been utilised on this grant, leaving a balance of US\$ 11,330 un-utilised¹⁹.

According to HORTEXA's management report of 20 November 1998, the US\$ 20,770 was utilised to set up simple pack houses (US\$ 7,460), acquire irrigation equipment (US\$ 10,290) and access technical advice (US\$ 1,499). Other areas on which the grant was spent include establishment of an Office for HORTEXA and hiring an Office Administrator.

¹⁹ The utilization of funds amounting to US\$ 11,330 was a result of the closure of International Credit Bank during September 1998.

As a result of HORTEXA being the channel of accessing IDEA Project assistance, paid up membership rose from 6 in February 1996 to 30 in February 1998, before dropping slightly to 28 by December 1998. Out of the 28 members, 13 were exporters, 13 others were farmers while two were farmer groups.

In rating the contribution of IDEA Project HORTEXA Executive Committee indicated that the assistance was relevant to the association's needs but it was generally inadequate. While the total amount sought and approved by USAID was 72,000, only US\$39,000 had not been distributed by December 1998.

Through linkage with producers, at least 250 fresh produce growers were reported to have been reached by HORTEXA. The association executive committee also indicated that institutional strengthening of HORTEXA was inadequate. From the time a diagnostic study was undertaken in 1996, in which problem areas were identified, very little had been done to improve its status. In particular:

- The association, on its own, tried to review its mission and to draft a new memorandum and articles of association. At the time of undertaking the study, the new write-up was still awaiting expertise advice before it could be adopted by the association.
- Membership development was moving slowly, mainly because of not having a strategic membership development plan in place. Out of the 30 registered members, 20 were active.
- The management and information system was still weak due to lack of a proper filing system and the fact that the system was yet to be computerised.
- Systematic annual planning was still not being done basically because of lack of in-house expertise to guide the preparation of such plans. This is one of the training needs that the association should seek to be funded by relevant organisations such as Uganda Institutional Capacity Building Project.
- In terms of networking with Government departments, the current scenario reflects dependence on HORTEXA Chairman as an individual rather than as an office bearer. It is a considered opinion of the consultants that HORTEXA should lobby for representation on Government bodies responsible for export promotion, such as UEPB.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

4.1.1 Increase in Exports

On the basis of Statistics available from CAA, there were 81 exporters of fresh produce in Uganda as at December 1998. Eighteen of those 81 exporters, who constitute about 23% of the total number, handled approximately 90% of total fresh produce exports. Out of those 18 firms, 13 were IDEA project clients. These alone handled about 75% of the total fresh produce exports. These statistics indicate that IDEA project has been major player in the sector.

As regards the volume of exports, there has been a general increase since 1993. In all cases the rates of increase have been higher from 1996 -1998 as compared to the period 1993 - 1995 (Table 4.1).

Table 4.1 : Annual Exports of Selected Fresh Produce : 1993 - 98
(export figures in tonnes)

Commodity	1993	1994	1995	1996	1997	1998
Matooke banana	375	462	420	465	451	451
Apple banana	56	87	79	123	144	111
Hot pepper	5	8	8	25	107	236
Chilli	108	96	87	100	92	170
Okra	19	18	16	35	52	110
Green beans	11	18	16	29	72	119
Passion fruit	5	5	5	58	38	30
Others	241	176	162	150	269	353
Total	820	870	793	985	1,225	1,580

Source : CAA

4.1.2 Stakeholder's Rating of ADC Support

Whereas there have been other factors contributing to increasing rate in the growth of fresh produce exports, IDEA project assistance was considered by the stakeholders to be a significant factor, especially for hot pepper, green beans and passion fruit (Table 4.2). Other factors cited were: positive government export policy and increase in air space.

Table 4.2 : Stakeholder's Rating of IDEA Project to Exports of Fresh Produce

Commodity	Contribution of IDEA to Exports	Remarks
Matooke banana	less than 10%	Negligible
Apple banana	10 - 20%	Minimal
Hot pepper	over 75%	Effective
Chilli	25 - 50%	Little
Green beans	50 - 75%	Satisfactory
Passion Fruit	50 - 75%	Satisfactory
Overall Fresh Produce	40-75%	Satisfactory

Source : Exporters and HORTEXA

4.1.3 Reaching the Rural Producers

In terms of rural reach, over 500 rural producers are estimated to have been reached through the ADC interventions in fresh produce. This has created employment for probably over 2,000 people. Rural households have been able to increase their incomes through the sales of fresh produce. Incomes attributed to fresh produce ranged between shs 250,000 and shs 1,000,000 per annum. The incomes so realised have enabled the households improve their socio-economic status.

4.1.4 Quality Control

Economic benefits notwithstanding, the intervention of the ADC in fresh produce has instilled a sense of quality control hitherto not common among rural producers. Through regular training and technical support, producers are now able to grow, sort and package products to the required European market standards.

4.1.5 Meeting Project Goals

With respect to measuring IDEA Project interventions against its goal and objectives, the following conclusions can be drawn:

- There has been significant increases in incomes of rural men and women involved in producing fresh produce. In case of hot pepper, real incomes have increased by 33%, from a low base of Ushs 179,000 in 1997 to Ushs 290,000 in 1998 per producer. Passion fruit producers, on the other hand, have realised an 8% real increase in incomes from passion fruit, rising from Ushs 350,000 in 1996 to Ushs 461,700 in 1998.

- National exports of hot pepper grew by 120% while in the case of passion fruit, national exports declined by 21% annually from 1996 through 1998.
- The total value of fresh produce exports from Uganda was estimated at over US \$ 1.5 million in 1998. This estimate surpasses IDEA Project LOP target of US \$ 0.37 million worth of annual fresh produce exports.
- The gender distribution in the production and marketing of fresh produce indicates that 30% - 40% of producers in the sample districts are women. Similarly, approximately 37% of the hired labour force constitutes women. While these percentages represent significant milestone towards the IDEA project target of 40%, they suggest that ADC should emphasize women involvement in its future promotional activities.

4.2 Recommendations

With a view to consolidating the gains made and ensuring expansion and sustainability, the following areas are suggested for future project interventions:

- Strengthening and empowering associations.
- Monitoring use of research funds and outputs more closely.
- Selective promotion of progressive farmers and exporters. It is not very beneficial to scatter assistance. Grants to individual exporters have been inadequate. There is a need to increase level of assistance and also move producers from small to large scales.
- ADC should effectively participate in the on-going policy dialogue on agricultural modernisation, with a view to developing agricultural export zones.
- ADC should consider supporting construction of farm infrastructures especially basic pack houses and development of better packing materials.
- Diversification of the commodity base being handled by the ADC is essential if producers are to maximise profits. The ADC should consider diversifying both coverage and products.
- Continued training is necessary to ensure that the gains so far made on the technical front are sustained. ADC should therefore intensify training of producers and buyers.

- More demonstration plots should be encouraged, particularly for passion fruit.
- With a view to increasing the level of women participation in fresh produce, the ADC should emphasize women involvement in its promotional activities.
- In future commodity studies, ADC should include importers of Uganda's fresh produce in the frame of respondents.

ANNEXES

ANNEX I : TERMS OF REFERENCE

ADC/IDEA PROJECT

COMMODITY STUDIES FOR IMPACT EVALUATION

I Background

The Uganda's Investment in Developing Export Agriculture (IDEA) Project was initiated in March 1995 with the goal of increasing rural men's and women's incomes. The Agribusiness Development Centre (ADC) has over the last three and half years assisted agribusiness firms and associations expand production and marketing of selected non-traditional agricultural export (NTAE) crops and products. The ADC client portfolio as well as commodity mix has over the years increased in line with demand for its services. The strategy adopted in working with producers, traders and exporters is that of a *vertically integrated commodity systems approach*. Considerable amounts of resources (both human and financial) have been put in by the project by ways of technical assistance, financial intermediation, market linkages and research.

In order to measure the impacts of the IDEA project on its clients, the ADC is to commission commodity studies for fresh produce and flowers. The studies to be conducted by Ugandan consulting firms/individuals will cover a wide spectrum of ADC clients, namely producers, traders/buyers and exporters.

II Purpose

The purpose of these studies will be to measure the people-level impacts as a result of promoting the two commodities. The studies will measure benefits in terms of net annual returns, savings and the general economic and social betterment of the clients and will also enable monitoring of productivity, crop husbandry practices, post-harvest handling, farm storage, input usage at farm level, etc. Other aspects to be covered will include women participation, income utilization, differences between male and female growers, forward and backward linkages in the NTAE sector, any multiplier effects and sustainability. The studies will thus measure progress towards achieving USAID's Strategic Objective One (SO1).

The main objectives of the studies will be to :-

- Determine income levels and expenditure patterns of men and women.
- Determine employment and wage bill distributions of men and women, with focus on labour utilization and participation in decision making.
- Obtain levels of production, productivity and economics of producing and exporting the selected NTAEs, with focus on level of technology and husbandry practices.
- Obtain number of men and women impacted by the project for the selected NTAEs.
- Determine the social welfare, nutritional status and assets owned by households.

- Obtain quantity and value of NTAEs produced and exported and the extent of ADC's contribution.
- Obtain backward, forward linkages and multiplier effects associated with NTAE production and exports.
- Determine the effects on the environment caused by the promotion of the selected NTAEs.
- Compare the above with baseline information previously generated and assess the sustainability of the selected NTAEs.

III Approach

The approach will be to carry out case studies for obtaining gender-disaggregated descriptions of enterprises and activities for the entire producer-exporter chain. The studies will cover four commodities fresh produce and roses. For both commodities, there will be three types of respondents, namely; producers, traders and exporters. The findings from these studies will be used to build on the baseline survey results (conducted during the first half of 1996) and will be used to measure people-level impacts such as levels of production, employment, and personal income for the specific commodities supported by the project. The study approach for each of the commodities is presented below.

A: Fresh Produce

1. **Objective:** The main objective of the study is to determine the extent and impact of ADC involvement and level of incomes among the fresh produce growers, buyers and exporters.
2. **Product description:** Produce in this study is defined to include fruits and vegetables. Of particular focus are passion fruit, hot pepper, okra, green beans, apple banana and matoke.
3. **Data sources:** The primary data source will be the fresh produce growers in Kasese, Bushenyi, Masaka and Mpigi districts. A sample of 40 producers (10 in each district) will be interviewed, with at least 40% of the respondents being women. Of particular interest are the:
 - hot pepper and okra growers at Mubuku Irrigation Scheme in Kasese,
 - passion fruit producers in Kasese, Bushenyi and Masaka, and
 - apple banana and matoke producers in Bushenyi and Mpigi.

Mairy Estate in Mpigi district will be the primary source for green beans and will double as the producer and exporter. Buyers and exporters of fresh produce who have been assisted by the ADC will also be interviewed. Border posts at Katuna and Busia/Malaba will be visited to assess the direction of flow and significance of fresh produce exports.

4. **Variables to be measured:** The variables to be measured will include (but not limited to) the following:
 - agronomic practices including area under fresh produce, varieties grown and technology used;
 - average yield levels and output of fresh produce;
 - incomes attributed to fresh produce;
 - decision making in income utilization;
 - social and nutritional status of the producers;
 - labour utilization by gender;
 - description of the market set up and export volumes and values;
 - employment by firm and wage bills by gender;
 - backward, forward linkages and multiplier effects associated with chilli;
 - perception on contributions of ADC and where future project interventions should focus.
5. **Procedures:** The study will involve visits to the ADC clients, market centres and selected border points. Suitable selection procedures and survey instruments will be designed by the Consultant and agreed upon with the ADC Monitoring and Evaluation Specialist.

B: Flowers

1. **Objective:** The overall objective of the study will be to identify the extent of ADC involvement and the effects on the rose industry, firms and employees.
2. **Product description:** The commodity mix to be studied will include roses and other flowers promoted by the ADC.
3. **Data sources:** The primary data source will include a cross section of rose farms the project has worked with. A sample of flower farms will be studied in detail. These are Nsimbe Estates, Nile Roses, Ziwa Horticultural Exporters and Mairye Estates. At each of these rose farms, a sample 10 employees will be interviewed. The Uganda Flowers Exporters Association (UFEA) will be the other main contact.
4. **Variables to be measured:** The following variables will be measured at the farm and employee levels:
 - levels of production;
 - labour utilization by gender;
 - volumes and values of exports;
 - household income levels;
 - household incomes attributed to roses;
 - social and nutritional status of the employees;
 - backward, forward linkages and multiplier effect associated with roses;
 - perception on contributions of ADC and where future project interventions should focus.
5. **Procedures:** The procedures to be followed will involve administering questionnaires to the four flower farms. A sample of 40 employees (10 per farm)

will be selected, with at least 50% being females. Survey instruments to be designed by the Consultant, will also be administered to the selected employees. These together with the study design will be agreed upon with the ADC Monitoring and Evaluation Specialist.

IV Deliverables

For each study, the following deliverables would be required:

- **Study proposal/study design**, spelling out study approach, coverage, methodology, study team and budget. The proposal should also include drafts of the survey instruments to be used in the study. These will be discussed and agreed upon between the successful firms/individuals and the ADC Monitoring and evaluation Specialist.
- **Draft report**, bringing out an analysis of all variables. The report should be as comprehensive as possible and should clearly spell out findings, analysis and recommendations.
- **Final report**, which incorporates all ADC comments and fully addresses the TOR. The report would spell out the way forward for the project.

V Timing

The two commodity studies will be undertaken as follows:-

- **Fresh Produce:** Study proposal and design of survey instruments to be fine-tuned by mid-December 1998. Field data collection and analysis are expected to take a duration of four weeks. A draft report is due mid February 1999 and final report by end of February 1999. The study should therefore take a maximum period of 8 weeks.
- **Flowers:** The study would commence by end of December 1998 after fine-tuning the study design. Data collection and analysis are envisaged to take a period of not more than three weeks. A draft report would be expected by end of January 1999 and a final report two weeks later. The study is therefore expected not to exceed a period of six weeks.

VI Reporting

The contractor will report to:

Mr. Peter Wathum,

ADC/IDEA Project Monitoring and Evaluation Specialist

Plot 18 Prince Charles Drive, Kololo, Kampala

Tel. 255482/3 Fax. 250360.

The M&E Specialist will closely monitor progress during the study period, including verification of data collection.

ANNEX II. LIST OF FRESH PRODUCE CLIENTS

A. Category I: Organisations

1. HORTEXA
2. National Agriculture Research Organisation (NARO).

B. Category II: Exporters

1. London Fruit
2. Mustak Enterprises
3. Fresh Pack
4. Sun Trade and Consulting
5. Fresh Grown
6. AFI (U) Ltd
7. Tilda
8. Ssese Fruit Packers
9. Rims Ltd
10. Jaco Commercial Agencies
11. Fruit Pack Ltd
12. Free-chem
13. Coseda Ltd
14. Mairye Estates Ltd
15. Agri - Export

C. Category III: Buyers

1. Mubuku Trading
2. Uganda Crafts
3. Transpack Imports
4. OCV
5. Masco Investments.

D. Category IV: Farmers

1. Ageti Farm
2. Burundi Passion Fruit Farmers
3. Fruits of the Nile
4. Mubuku Irrigation Scheme
5. National Organic Agricultural Involvement of Uganda
6. Kingo Passion Fruit Growers
7. IPS (U) Ltd
8. Inter - Fruit

ADC/IDEA PROJECT
COMMODITY STUDIES FOR IMPACT EVALUATION

CHECKLIST FOR ADC HV COMPONENT

{ADC HV Component to provide all relevant literature on fresh produce in general and its interventions in particular}

1 Inputs, Expectations and Targets

Component objectives and goals in regard to the fresh produce

Areas of intervention in fresh produce and inputs put in

The overall produce set up from producer to exporter

Sub-sector participants - criteria in selection of clients to work with

Packages of incentives - what is offered to firms and producers

The share of fresh produce to total NTEA export - a trend analysis

2 Involvement with other Institutions

Different institutions involved in promoting fresh produce

Contractual arrangements with firms/clients

Methods of delivery

3 Self Assessment

Assessment of the performance of the sector - trends in volumes and values

Successes and failures

Factors influencing performance - site cases of good and bad performers

Actual beneficiaries/target groups reached

Lessons learned and sustainability prospects

Future plans for fresh produce

ADC/IDEA PROJECT
COMMODITY STUDIES FOR IMPACT EVALUATION

CHECKLIST FOR FRESH PRODUCE BUYERS/EXPORTERS

{Each buyer/exporter to provide information on fresh produce procurement, exports and related socio-economic benefits}

1 Identification

Name, location and address

Operational area/branches

Location of suppliers/producers

Number of employees by category and sex

Firm assets

Other lines of business beside fresh produce exports

2 Procurement/Export Mechanisms

Motivating factors to commence fresh produce exports

Methods of procurement - flow from farm level to export point, use of outgrowers, etc

Procurement price

Handling , other labour costs, transport and related procurement costs

Export points and destinations

Major buyers (importers)

Means of export

Export-related costs

3 Performance

Quantities procured by location/district and exported since 1995

Types of produce procured and exported

Export earnings and significance of fresh produce proceeds to total earnings (%)

Employment resulting from fresh produce exports (male/female)

4 Assessment of ADC Involvement

Nature of cooperation with the ADC

Contractual arrangements

Assistance received from ADC

The relevance and adequacy of the assistance

Impact following assistance - benefits both economic and social

Socio-economic benefits to the employees

Comparison of current situation with "before" ADC intervention

Linkages and multiplier effects resulting from ADC involvement - benefits to the surrounding population

Estimated number of producers reached

Use to which earnings from fresh produce exports have been put

5 Self Assessment and Future Plans

Assessment of own performance

Key successes and failures

Factors influencing performance

Reactions of the foreign buyers

Key constraints and problems encountered in fresh produce export

Suggestions on how production, quality and exports can be improved

Overall assessment and recommendations regarding promotion of fresh produce

Future plans/outlook

Suggestions on what ADC should do more

ADC/IDEA PROJECT
COMMODITY STUDIES FOR IMPACT EVALUATION

QUESTIONNAIRE FOR FRESH PRODUCE GROWERS

Date of Interview _____ Name of Interviewer _____

1. FARM AND PARTICULARS OF FARMER

District _____ County _____ Sub-county _____

Village _____ Name of Farmer _____ Sex _____

Number of family members engaged in fresh produce activities _____ (of which
 Male =; Female =; Children =).

Do you hire labor? If yes state number (Male =.....; Female =)

Do you have specialized training/knowledge in fresh produce production? If yes,
 state the type of training/area of specialization _____

2. FRESH PRODUCE PARTICULARS

What is the total area owned (acres) _____. What is the area under fresh produce
 (acres) _____.

For how long have you been growing fresh produce? _____

What has been the annual area under each of the different fresh produce grown since
 1995?

Fresh Produce	Annual Area under Fresh Produce (acres)			
	1995	1996	1997	1998

Why has the area under fresh produce increased/decreased over the

How do you obtain inputs? Seed and chemicals?

What are the four key major inputs in fresh produce production?

When are the peak labor requirements (state activities in order of priority)

_____, _____, _____,

Do you receive any extension services (Y/N)? _____

If yes, who provides the services _____

Do you pay for the services? (Y/N) _____ If Yes, how much? _____

Are you satisfied with the services rendered? _____

What changes do you want to see in the extension service _____

3 OUTPUT AND SALES

What has been the annual output and sales since 1995?

Fresh Produce	Output (kg)				Sales (kg)			
	'95	'96	'97	'98	'95	'96	'97	'98

How do you market your fresh produce (take to market, through agents, etc)

Do you have a choice of buyers _____

What is the mode of payment? _____

What costs are associated with marketing fresh produce? _____

Are you an outgrower to a buyer? If so state the buyer _____

What arrangements are between you and the buyer? _____

What benefits do you realise as an outgrower? _____

Indicate total income for 1998 by source

Source of income	Amount (1998)
Fresh produce	
Other agricultural produce	
Livestock and products	
Business	
Gift	

Indicate income levels from sale of fresh produce

Year	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>
Income realised	_____	_____	_____	_____

What is the main reason for the trend (higher unit price, more output, etc)

4 INCOME UTILISATION

Who controls incomes from fresh produce (H or W or H&W) _____

How is the decision to spend income from fresh produce arrived at _____

State the use to which income realized from fresh produce in 1998 was put.

<u>Expenditure item</u>	<u>Estimated amount spent</u>
_____	_____
_____	_____
_____	_____
_____	_____

6 SOCIAL AND NUTRITIONAL CONSIDERATIONS

	'95	'96	'97	'98
- Percentage of school-going children.	----	----	----	----
- Type of dwelling unit (poor, fair, good)	----	----	----	----
- Nutritional status (# of meals)	----	----	----	----
- Availability of safe water	----	----	----	----
- % unable to receive treatment due to costs	----	----	----	----

How has fresh produce generally helped you in terms of household items and Social well being

What assets have you acquired as a result of growing fresh produce since 1996?

7 CONSTRAINTS, PERCEPTIONS OF FARMERS AND SUGGESTIONS FOR FUTURE INTERVENTION

List in order of priority the major constraints to increased fresh produce production and marketing, and what solutions would you suggest

Constraint	Suggestions
_____	_____
_____	_____
_____	_____
_____	_____

8 ANY OTHER COMMENTS: BENEFITS, SUGGESTIONS, ETC

DISTRICT INFORMATION REQUIRED

PLEASE PROVIDE DISTRICT-WISE INFORMATION ON THE FOLLOWING
(Use the space provided under each item)

- ① Estimated number of producers of passion fruit in the district

- ② The five leading sub-counties in passion fruit production

- ③ Variety commonly grown

- ④ Estimated acreage (in hectares) under passion fruit and annual output (metric tonnes - use 1998 or 1997 data which ever is available)
Area: (ha) Output: (mt)

- ⑤ What are the harvesting and marketing seasons (indicate months)

- ⑥ What are the major market outlets

- ⑦ Indicate the prevailing prices of passion fruit (shs/kg) at the different market levels;
① On farm: ② Rural market: ③ Urban market:

- ⑧ Mention five main problems associated with producing passion fruit

- ⑨ Mention five main problems associated with marketing passion fruit

- ⑩ Suggest ways through which the production and marketing of passion fruit may be improved in the district

ANNEX IV: LIST OF FRESH PRODUCE EXPORT CROPS AS AT DECEMBER 1998

- | | |
|--------------------|---------------------------|
| 1. Matooke banana | 12. Groundnuts |
| 2. Apple banana | 13. Bitter tomato (Ntula) |
| 3. Hot pepper | 14. Green beans |
| 4. Ginger | 15. Sugar cane |
| 5. Chillies | 16. Mangoes |
| 6. Avocado | 17. Jackfruits |
| 7. Sweet potatoes | 18. Yams |
| 8. Pineapples | 19. Paw paw |
| 9. Dudhi | 20. Egg plant |
| 10. Okra | 21. Pea |
| 11. Passion fruits | 22. Plantain |

ANNEX V: Key Interventions/Activities of the IDEA Project in the Fresh Produce Export Sector

Year	Client	Crop	Activity type	Details	Grant Value US\$	TA Input (person days)	Anticipated Impact
1995	HORTEXA	Passion fruit	Research	Quality evaluation/trials in Kasese	10000	30	Medium
1995-96	HORTEXA	Various	Marketing	Representation at trade shows in Holland, Dubai and S. Africa	30000	20	Medium
1996	Mairye Estates	Green beans	Feasibility study	HV Advisor prepared feasibility study	None	5	High
1996	Mairye Estates	Green beans	Research	Trials carried out on a range of bean varieties	15000	20	High
1997-98	Mairye Estates	Green beans	Training & Marketing	Local and overseas QA training provided to supervisors	10000	40+	High
1996-98	Mubuku Irrigation Scheme	Hot pepper, okra, beans	Training & Marketing	Trials, training and market development for a range of vegetables, including VOCA	5000	100+	High
1996-98	Fruit Pack	Hot pepper, okra, beans	Research	Financial and technical support for pioneering exports from Kabale and Kasese	40000	40+	Medium
1996-98	O.S.U	Apple banana	Research	Trials and training on production and post-harvest systems	6000	50+	Low
1996-98	Coseda	Hot pepper	Research, marketing	Trials and training in production and post-harvest systems, HORTEXA grant for nursery and pack house	6000	50+	Medium

Year	Client	Crop	Activity type	Details	Grant Value US\$	TA Input (person days)	Impact
1996-98	Free-Chem	Passion fruit	Training & Marketing	Training provided in production and marketing systems	5000	50+	Medium
1997-98	Ageti farms	Passion fruit	Training & Marketing	Technical assistance in production and marketing	None	20	Medium
1997	Fruits of the Nile	Dried fruits	Marketing	Trade show participation and general advice	5000	20	Low
1998	Uganda Crafts	Hot pepper, okra	Training & Marketing	Technical assistance in production and marketing systems	1000	50+	Medium
1998	HORTEXA	Various	Institutional strengthening	Organisation review, office establishment, technical assistance and grants for irrigation and pack houses for small-scale growers & traders.	140000	200+	Medium
1998	HORTEXA	Various	Training & Marketing	Code of practice established for fresh produce exporters, representation at Africa regional meetings.	50000	50+	Medium
1998	Mustak Enterprises	Hot pepper, okra, chilli	Irrigation (HORTEXA grant)	Technical assistance and grant provided to establish supplementary irrigation.	12000	20	Medium
1998	Sun Trade	Passion fruit, apple banana	Pack house (HORTEXA grant)	Technical assistance and grant to establish pack house.	10000	20	Low

ANNEX VI: LIST OF DOCUMENTS CONSULTED

- ADC/IDEA Project, 1996, **Horticultural Exporters Association: Profile of Current Position**. ADC, Kampala.
- _____, 1998. "ADC Commercialisation Bulletin No. 5 - Fresh Green Beans". ADC, Kampala.
- _____. "ADC Commercialisation Bulletin No. 8 - Apple Bananas". ADC, Kampala.
- _____. "ADC Commercialisation Bulletin No. 5 - Passion Fruit". ADC, Kampala.
- _____. "ADC Commercialisation No. 6 - Hot Pepper". ADC, Kampala.
- _____. **Progress Report 01 April 1997 - 31 March 1998**. ADC, Kampala.
- _____. "Export Marketing of Apple Bananas". ADC, Kampala.
- ClearConsult (U) Ltd., 1997, **Assessment of ADC/IDEA Projects Impacts in Promoting Fresh Produce in Uganda**. ADC, Kampala.
- Kawanda Research Institute, 1998, **Observation Trials and Demonstration Plot D/L No. 617-0125-07**. NARO/KARI, Kampala.
- The Republic of Uganda, 1998, **Background to the Budget 1998/99**. Ministry of Finance, Planning and Economic Development, Kampala.
- VinLaw Associates Ltd., 1997, **Commodity Study for Impact Assessment of ADC/IDEA Project Initiatives on Passion Fruit**. ADC, Kampala.

635
KII