

**TITLE II COOPERATING SPONSORS – UGANDA
PLOT 10 KALINTUSI ROAD
KAMPALA, UGANDA**

1999 BELLMON ANALYSIS

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TABLE OF CONTENTS

	Page
LIST OF TABLES.....	ii
LIST OF ACRONYMS.....	iii
1.0 SUMMARY INTRODUCTION.....	1
1.1 Background and Summary.....	1
1.2 Summary Findings.....	1
2.0 DISINCENTIVE ANALYSIS AND STORAGE CAPABILITIES.....	2
2.1 Introduction.....	2
2.2 Disincentive Analysis	2
2.3 Government Policies Affecting the Food Sector.....	5
3.0 UGANDA’S FOOD NEEDS, CONNSUMPTION PATTERNS AND FOREIGN FLOWS.....	9
3.1 Introduction.....	9
3.2 Disincentive Analysis.....	12
3.3 Monetization Targets and Market Structure.....	17
3.4 Cost Recovery Analysis.....	19
4.0 THE ROLE OF FOOD AID.....	20
5.0 STORAGE AND HANDLING CAPABILITIES.....	20
5.1 Port Facilities.....	20
5.2 Storage Facilities.....	22
5.3 Transport Capabilities.....	22
6.0 CONCLUSION.....	22
6.1 Findings.....	22
REFERENCES.....	28-29

LIST OF TABLES

		Page
Table 1	Uganda Land-Use by Category.....	3
Table 2	Uganda Cereal and Other starch Crops Production.....	4
Table 3	Uganda Oilseed Processors Association Oil Seed Production. ...	9
Table 4	Per Capita Food availability and Consumption.....	10
Table 5	Nutritional Intake Requirements.....	10
Table 6	Veg. Oil Consumption Projections 2000-2002.....	13
Table 7	Crude Edible Oil Imports 1995-1999.....	13
Table 8	UOSPA Edible Oil Production 1997-1999.....	14
Table 9	Title II Edible Oil Compared to Local Production.....	14
Table 10	Local Wheat production Compared to Imports.....	16
Table 11	Rice Imports 1998-1999.....	17
Table 12	Whole Grain Milling Capacity	18
Table 13	Cost Recovery Benchmarks.....	19
Table 14	Storage Capabilities.....	22
ANNEXES	Tables A1-A9	25-27

LIST OF ACRONYMS

ACDI	Agricultural Cooperative Development International
APSEC	Agricultural Policy Secretariat
C&F	Cost and Freight
CDO	Cotton Development Organization
CMB	Coffee Marketing Board
DRC	Democratic Republic of Congo
ECAPAPA	Eastern and Central Africa Program for Agricultural Policy Analysis
ERP	Economic Recovery Program
FAO	Food Agricultural Organization
FAS	Free Along Side vessel
GDP	Gross Domestic Product
GOU	Government of Uganda
HDI	Human Development Index
HHs	Households
KRC	Kenya Railways Corporation
LMB	Lint Marketing Board
MAAIF	Ministry of Agriculture Animal Industry and Fisheries
MT	Metric Ton
PL 480	Public Law 480
PMA	Plan for Modernization of Agriculture
PMB	Produce Marketing Board
PVOs	Private Volunteers Organizations
TRC	Tanzania Railways Corporation
UCDA	Uganda Coffee Development authority
UDHS	Uganda Demographic Health Survey
UNDP	United Nations Development Program
UOSPA	Uganda Oil Seed Processors Association
URC	Uganda Railways Corporation
USAID	United States Agency for International Development
USH	Uganda Shillings
VOCA	Volunteer Overseas Cooperative Agency
WFP	World Food Program
WHO	World Health Organization

BELLMON ANALYSIS

1.0 SUMMARY INTRODUCTION

1.1 Background and Summary

Public Law 480 (PL480) provides for concessional sales to countries constituting potential markets of United States commodities. Grants are provided to countries that are: (i) chronically food insecure; or (ii) facing emergency situations. Section 403 (a) (1) of PL 480 as amended through PL 104-130, April 9, 1996 requires that “adequate storage facilities will be available in the recipient country.... to prevent the spoilage or waste of the commodity”. Furthermore, Sections 403 (a) (2) and (b) require that the Secretary of Agriculture or the Agency for International Development “shall ensure that the importation of the United States agricultural commodities and the use of local currencies for development purposes will not have a destructive impact on the farmers or the local economy of the recipient country.” The Secretary of Agriculture is responsible for concessional sales (Title II). With the exception of 416 (b) surplus disposal programs and Food for Progress, grant food aid is the Responsibility of the Administrator of the United States Agency for International Development (USAID).

In Uganda, the joint monetization program is composed of ACDI/VOCA, Africare, Technoserve and World Vision with ACDI/VOCA as the lead monetizer. Partners prepare an annual Bellmon analysis for all commodities under umbrella monetization. Two commodities (pure refined vegetable oil and hard red winter wheat grain (Grade II)) are monetized under the Title II Program. The program has also monetized rice for the Italian Embassy to raise funds for the Italian education and health programs in Uganda.

The purpose of this Bellmon analysis is to evaluate the impact of importing whole grain wheat, and bulk vegetable oil on local production and marketing in Uganda. Rice is examined as it pertains to monetization on behalf of the Italian government rather than for Title II Umbrella Partners. It also demonstrates that there are adequate storage facilities to prevent the spoilage or waste of the commodities being monetized.

1.2 SUMMARY FINDINGS

The findings are that there is increasing demand for all the monetized commodities (vegetable oil, wheat and rice) largely due to insufficient local production and to a lesser extent due to the war in the Democratic Republic of Congo (DRC) with consequent disruption of harvests there and generally rising food prices and shortages in the Great Lakes region. The current levels of monetized wheat, rice and vegetable oil do not constitute a disincentive effect to domestic production or disrupt markets. For example, the Hard Red Winter being imported under Title II and principally the type imported commercially is not in competition with the locally produced Soft Wheat varieties. There is sufficient storage capacity in Uganda. The private sector storage capacity available in Jinja and Kampala is over 104,000 MT. Increased wheat and rice consumption resulting

from rapid urbanization is likely to continue through commercial channels regardless of any food aid configuration.

2.0 DISINCENTIVE ANALYSIS AND STORAGE CAPABILITIES

2.1 INTRODUCTION

2.1.1 Uganda's Geographical Features

Uganda is a landlocked country in the great-lakes region of East-Central Africa. Its land area is 243,000 Km², of which about 15% are mainly fresh water lakes. Situated on the Equator, the country is mostly at an altitude of 1000 – 2000 meters above sea level, which gives it a moderate climate. Mid-1999 population is estimated at 21.6 million, living in 4.32 million households. The estimated population growth is about 2.5% per annum. Over 85% of the population are rural of which 47% are below the age of 15. Population density is 109 per km²¹

2.1.2 Socio-economic Background

The 1999 UNDP's Human Development Index (HDI) report ranked Uganda 158th of the poorest countries of the world with 55% of the population living below the poverty line. About 47.4% of the population do not expect to survive to the age of 40. Adult literacy rates are 53.0% for women and 75.2% for men. Sixty three percent (63%) of the population have no access to health services, 10% to safe water and 45% to proper sanitation. Underweight children under the age of five consists of 18% of this group. The GDP per capita is about US\$ 300, 78% of that in 1970. The data herein classifies Uganda as a Least-Developed Country (LDC).

Since the Economic Recovery Program (ERP) launched in 1987, the Government has been pursuing tight fiscal policy resulting in macro-economic stability. Annual growth rates of over 5% and single digit inflation rate (5% in 1999²) have been recorded. From 1986/87 to 1995/96, the economy grew at an average annual rate of 6.5%. Much of the growth in GDP during 1998/99 was related to manufacturing, construction and services that have been leading growth sectors with rates of over 10%. The agricultural sector grew at a rate of 4% per annum in real terms (GOU, 1998) and also contributed to the overall GDP growth.

2.2 DISINCENTIVE ANALYSIS

2.2.1 Agricultural Sector Overview

In Uganda, there are three sub-climatic zones. The Savannah Northern Zone is relatively dry with less than 1,000 mm rainfall. The Semi-tropical Lakes Zone has rainfall

¹ . The population density in the neighboring East African countries (Kenya and Tanzania) is 31 per km² and 21 per km² in whole of Africa on the average.

² Ministry of Finance Planning and Economic Development, Background to the Budget 1999/2000

exceeding 1,000 mm. The South and South–west highlands Zone has over 1,000 mm rainfall.

The rainfall is regular throughout the year, about 100mm per month on the average. The wettest months are March to May characterized by ‘long rains’. The second peak of ‘short rains’ is in the months of October and November. As a result of regular rainfall, there is high moisture retention and perennial crops such as coffee, bananas and tea are sustained all year round. Due to the moderate climate, Uganda is suited for agricultural production and is not susceptible to serious droughts and other natural disasters. Temperatures range from a minimum of 16°C to a maximum of 27°C (about 22°C on the average) throughout the year. Evaporation rates are low. Generally, soils are of laterite type. However, clay loams are found in the south and silty loams are common in the north. Little forestland remains except on the slopes of the mountains and areas around lakes and along the Nile. In the north and northeast and the Rift Valley in the southwest, the vegetation is savannah.

Therefore, Uganda’s major strength is productive agricultural land and generally favorable climate. As a result, Uganda is generally self-sufficient in food (bananas, cassava, potatoes, maize and millet). Oil seeds (soyabeans, sunflower) and other crops such as soft wheat variety grow successfully, particularly on the high plateaus in the highland districts. Perennial Crops (coffee, sugar and tea) also grow successfully. The land use by category is shown in Table 1. About 15% of the national territory consists of several lakes and river systems.

Table 1

CATEGORY	PERCENT	CATEGORY	PERCENT
Arable Land	23%	Forest & Woodland	30%
Grasslands	25%	Permanent Crops	9%
Other	13%	Total	100%

Of the 18 million hectares (ha) of potentially arable land, about 5 million is under cultivation. Many of the small farmers use hoes and other small farm implements to cultivate the land. In the northern and eastern regions, ox-ploughs have recently been reintroduced to till the land³. Poor agronomic practices, poor soil fertility, poor quality seed and the high incidence of pests and diseases in Northern and South Western Uganda, and poor technology in almost all the regions of the country are the major constraints of agricultural production.

A variety of traditional export crops are produced and include coffee which contributed about 60% of export earnings in 1999⁴, cotton, tobacco, tea, cocoa, and sugar. Substantially produced are non-traditional export or primary food crops. These are maize, beans, bananas, flowers, vanilla, sesame and groundnut. There is limited irrigated

³ Before the civil strife in Teso in early 1990s and insecurity in the north, ox ploughing dominated cultivation.

⁴ Ministry of Finance Planning and Economic Development, Background to the Budget 1999/2000

agriculture, it is all rain-fed. In Table 2 below, Uganda cereal and other starch crops production (MTx 1000) 1987-1997 are shown.

Table 2

Year	Banana	Millet	Maize	Sorghum	Rice	Wheat	Potato	Cassava
1987	7,039	518	357	315	20	10	1,859	3,101
1990	7,842	560	602	360	54	4	1,917	3,420
1993	8,222	610	804	383	74	9	2,278	3,139
1996	9,144	440	759	298	82	9	1,866	2,245
1997 (est.)	9,303	502	740	294	80	9	2,254	2,291

Source: Ministry of Agriculture, Animal Industry & Fisheries, Statistical Yearbook, 1998

In 1998/99, agriculture contributed 43% to GDP and 85% to merchandise exports. Food crop production is by far the single most important economic activity, accounting for over 25% of total GDP. Cash crops account for 4% of GDP and livestock 7%. Agriculture provides 80% of employment. An estimated 31% of the land is under staples (bananas, cassava, sweet potatoes), 27% cereals, 19% root and tuber crops, 15% pulses, oilseeds, industrial and 8% other crops including coffee. The country is endowed for the production of cereals and other starch foods. There are two growing seasons a year. Uganda is a surplus producer of millet, maize (there was a glut in 1989), sorghum, root crops such as cassava, sweet and Irish potatoes and bananas. Rice and soft wheat are grown on a small scale. In a comparison of 13 crops on cost of production, the Agricultural Secretariat (APSEC) report of 1993 ranked rice, matooke (cooking bananas), millet and sorghum in that order in gross margin per ha and return to labour. Also ranked high was cassava. Food crop production increased by 11% in 1998 and was projected to 13.8% in 1999.

Of the 89% of the population that live in rural areas, over 85% are engaged in agriculture. Women represent about 80% of the farm labor force, providing most of the food crops and an estimated 60% of the cash crops. Small farm holders account for 94% of total agricultural production and virtually supply all the country's food production. Staple foods include bananas, maize, yams, and sweet potatoes grown in the wetter areas; millet, a typical crop in drier parts; and cassava. Fish mainly varies the rather starchy diet provided by these food crops. Fish plays an important role in terms of food security and cheap source of protein to poor household families. The farm families consist of about 2.5 million households who, on the average, cultivate about 2.5 ha of land each. It is only sugar and tea that are grown on large estates. The major players in the sugar sub-sector are Metha and Madhivani two families of Asian origin who also encourage out-grower schemes. Tea estates are operated by both foreign and local entrepreneurs.

The recovery in crop production has involved minimal technological innovation, cultivated area expansion and improved care of traded crops since 1997. There has been: more widespread introduction of improved dairy cattle (grade animals and exotics); more intensive production systems for fruit and vegetables, cultivation of traded commodities such as Irish potatoes, maize, beans, rice, and oilseeds with the exception of wheat

production; and increased attention to the maintenance and husbandry of especially banana and coffee plots.

However, continuous cultivation and poor management of soils in many parts of Uganda is reducing soil fertility. The supply of nutrients from organic sources is inadequate particularly in those areas where the length of fallow has been shortened. Food and most other crop production are still dominated by low input usage which affects their yields and profitability (for most crops input costs constitute less than 35% of total cost). The supply of mineral fertilizers is necessary to achieve rapid agricultural growth, to ensure food security and to protect the natural resource base. Low-cost planting of nitrogen fixing agroforestry trees and the use of compost are also effective and are encouraged. However, high cost of fertilizers (all the country's fertilizer requirements are imported and expensive, for example the cost of a 25 kg bag of NPK fertilizer has been Ush.25,000 to 30,000 for the last couple of years) constrains small farmers access to agricultural inputs. In the recent past, the broad consensus between government and research institutions has emerged on the need and urgency for small farmers to apply fertilizers and other agricultural chemicals. The current policy is one of promotion of the use of fertilizers and other agricultural chemicals. However, because fertilizers cannot substitute for practices such as land fallowing, their application is being promoted alongside other practices for improved soil fertility and water management. For example, World Vision is promoting the use of organic fertilizers and integrated pest management practices in Northern Uganda.

2.3 GOVERNMENT POLICIES AFFECTING THE FOOD SECTOR

2.3.1 Pricing and Liberalization of Commodity Marketing

The 1987 Government of Uganda (GOU) Economic Recovery Program (ERP) primary objective was to create an enabling macro-economic environment for development following over a decade of market deterioration and distortions, poor service delivery and infrastructure decay. Measures including, *inter alia*, devaluation of the Uganda Shilling (USH) and instituting currency reform; liberalization measures; and moving towards establishing a sustainable balance of payments were taken.

The liberalization process has included the freeing of commodity and input prices, which are now market determined. Before liberalization, prices of traditional export commodities were subject to statutory minimum prices. Presently, government only announces an indicative price for cotton to guide farmers and cotton buyers. In the case of coffee, dissemination of price information has evolved to a level where price information is widely available on regular basis to stakeholders. Information dissemination for other commodities including non-traditional export crops such as maize beans, millet, etc. is also continuing to develop. Initiatives such as Eastern and Central Africa Program for Agricultural Policy Analysis (ECAPAPA)'s Market Information Service assists farmers to negotiate with commodity buyers. In the Annex Table A1, commodity prices in selected districts as at February 16, 2000 are shown. For export crops, commodity bodies such as Uganda Coffee Development Authority (UCDA),

Cotton Development Organization (CDO), Uganda Tea Authority, etc. compile and disseminate price information to stakeholders. In respect of producer prices, the farmers' share in the realized international price of the major traditional export crops has increased from 30% at the time of liberalization to 60-80% at the moment.

In case of inputs, the effective demand is low and the supply has responded accordingly. Formerly, Government largely supplied inputs. With the withdrawal of government from the input supply business, the private sector has taken over. The number of input dealers has increased and the prices stabilized.

However, with the exception of usage on several of the industrial crops (tobacco, tea and cotton) and Irish potatoes, agro-chemical use in Uganda is currently limited. Potato farmers use pesticides largely due to attacks of late blight. Otherwise, the majority of other food crops are grown without the use of agro-chemicals and inorganic fertilizers despite the favorable economic returns to be made. This is partly attributed to a perceived notion of adequate fertility of many Ugandan soils, partly due to the interruptions to farming arising from civil disorder, the limited incentive to increase production as a result of market limitations and, in areas of moderate low population density, lack of pressure on land precluding the need to raise productivity, on limited acreage.

Liberalization of markets has also involved the scrapping of parastatals: Coffee Marketing Board (CMB), Lint Marketing Board (LMB) and Produce Marketing Board (PMB) which used to monopolize the export of coffee, cotton and local non traditional export produce respectively and the removal of the monopoly of Cooperative Unions in the buying and processing of cotton and coffee. The liberalization of agricultural commodity prices and agricultural commodity markets have resulted in competitive markets which has translated into: (i) improved prices for farmers (agricultural produce prices are no longer fixed by government but are market determined); (ii) prompt payments (Farmers are now paid cash for their produce instead of promissory notes many of which were never honored); (iii) increased number of participants in commodity and input markets. There are no quotas or taxes imposed on vegetable oil, wheat and rice, the monetized foodstuffs.

2.3.2 Marketing Policy and System

Trade policy is the responsibility of the Ministry of Tourism, Trade and Industry. Marketing falls under the Directorate of Trade, Cooperatives and Marketing. Uganda National Bureau of Standards and Uganda Export Promotion Board enforce standards and promote trade particularly the non-traditional export crops, respectively. The Government's role in marketing and trade is mainly facilitating the private sector. To facilitate and improve marketing, the government and local governments have been involved in developing rural markets and feeder roads.

Therefore, marketing is now virtually all by the private sector and highly competitive. Bulk products such as potatoes, cabbages and bananas are marketed through private

sector channels, with roadside pick-up organized so that produce goes straight from the local producer (or middleman) to Kampala or other municipal markets. There are no organized regional wholesale markets which means that vehicle access is especially important in determining farm gate prices. Inadequate physical road and market infrastructure continue to constrain the marketing of agricultural produce. High transport costs inevitably contribute to low farm gate prices and subsequent low incomes and incentive to invest. Although many local level markets operate on a weekly or bi-weekly basis, they generally lack the minimum facilities such as: roofed structures to guard against rain and other weather effects; lockable and secure cool storage for temporary handling of unsold produce; water, power and sanitation; and facilities for taking field heat out of perishable commodities awaiting transshipment to domestic urban markets or export.

Production is dominated by family farm operations, which sell surplus production at farm gate, nearby roadsides, or at weekly/bi-monthly markets located in trading posts and towns throughout the country. Produce transportation range from wheelbarrows and bicycles to pick-ups and larger trucks. The liberalization of agricultural marketing and the lifting of import restrictions of used vehicles (and declining tariffs) have transformed the evacuation of rural produce in areas where vehicular access has improved. However, many community roads (farm access roads) and rural feeder roads remain in a poor state of disrepair and are frequently impassable during the rainy seasons. This often raises marketing costs and contributes to poor and variable quality of produce at the point of sale.

Industrial crops are sold through vertically integrated companies or, in the case of coffee, through itinerant buyers acting on behalf of processors and exporters. With the exception of industrial crops and in more recent years non-traditional export crops, typical small holder crops act as food crops for home consumption and a source of income through sale of surpluses.

A period of relative stability has encouraged foreign investment, price stability and signs of increasing levels of local investment in expanded production, processing and trade among the predominantly rural population, most of whom are engaged in small holder agriculture. As a result of improved economic management, inflation has declined from 43% in 1989 to 5% p.a. in 1999. Farmers are also slowly switching to the marketing of surplus food crops as well as cultivating crops such as maize, beans, bananas, etc. for the cash market. Household incomes are slowly increasing and the process of economic recovery facilitated. The share of monetary agriculture in GDP has now risen above the 1970 level largely stimulated by liberalization of prices, transport and marketing, as well as Government's continued support for road infrastructure development. The food security situation is stabilizing. The overall structure of the private sector is competitive.

2.3.3 Agricultural Policies

The current government agricultural policy is derived from the Plan for Modernization of Agriculture (PMA) strategy to raise the productivity of the peasant farmers and in agro-

processing, which will reduce substantially the labor force employed in agriculture while simultaneously achieving a marked increase in earnings from farm employment in various rural sectors. The PMA objective is to ensure very basic improvements in technology, services, finance and land tenure for the great majority of small-scale farmers hovering on the borders of subsistence. The Plan is also intended to have a profound impact upon production, consumption and pricing decisions. It specifies financing for investments to July 2003 and the key strategic elements underpinning it include: the deepening of decentralization; increasing focus on the market and dependence on market forces to direct change; increasing privatization of formerly public sector roles; placing greater priority on stimulating technology transfer; and focussing upon trade as an agent to spearhead poverty eradication and alleviate food-insecurity.

Growth in the production of most agricultural commodities is envisaged by taking advantage of demand and marketing opportunities in local, regional and international markets⁵. The Plan anticipates increased adoption of available technology and gives greater attention to: differentiated means of enhancing technology-transfer to match the differing requirements of the various categories of client farmers; and fostering of a plurality of means of service delivery especially by bringing such services nearer to the rural farmers.

Few farmers use purchased improved seed despite the successes of research institutes in developing improved varieties and the PL 480 funded ATTAIN activity in enhancing access. Many farmers prefer to save seed from season to season while for others poor extension service delivery and weak farmer extension-research linkages have been blamed for the poor performance. The slow rate of seed building has also contributed to poor farmer adoption rates. The Ministry of Agriculture animal Industry and Fisheries (MAAIF) Uganda Seed Project produces in sufficient quantities only seed of one composite maize variety (Longe I). Seed bulking of other various crops is estimated to meet only 20% of current demand. The ADC/IDEA Project has been involved in supporting the bean and maize research programs, encouraging further screening of varieties for different agro-ecological zones and nurturing private companies' interest in collaborating in seed production once the seed industry is fully liberalized. Africare and NARO are working closely together in Kabale District helping farmers to produce research proven varieties of bean and potato seeds for sale to their neighbors. World Vision is also working in partnership with NARO and the District agricultural offices of Gulu and Kitgum on developing and testing suitable improved seed varieties. Also promoted by World Vision and NARO is the use of improved finger millet, sorghum, pigeon peas and ground nuts in Gulu and Kitgum districts.

During the FY 1999, refined vegetable oil and hard red winter whole grain wheat remained the most appropriate commodities for PL-480 monetization in the country. The

⁵ With the exception of wheat and rice, Uganda is surplus producer of maize, peas, maize, finger millet, sorghum, cassava, potatoes, and bananas (plantains and cooking bananas). Significant quantities of these commodities are exported within the East and Southern African region largely deficient in starch production. Practically, all of Uganda's regional partners are major cereal importers. Large quantities are imported by Kenya, Mozambique, Ethiopia, Somalia, Malawi, Sudan and now the Democratic Republic of Congo (DRC) where demand is increasing in the advent of war in that country.

sales proceeds were utilized to support increased cultivation of raw materials for the production of edible oil in Uganda as well as beans, maize, cassava, Irish and sweet potatoes. PL 480 continues to promote the production of a new variety of sunflower seeds that can produce oil yields of 40% oil compared to about 25% oil content from the old varieties. Due to support to Uganda Oilseed Processors Association (UOSPA) oil seed multiplication program, local oilseed production continues to increase as shown in Table 3. The most important oilseeds supported by PL 480 through UOSPA are sunflower and soybean. In 1999, 17,552 MT and 57,190 MT of soybean and sunflower seeds respectively were produced representing an increase of 153% of soybean and 58% of sunflower (in increase of 73% of soybean and sunflower together).

Table 3

CROP	1997	1998	% INCREASE	1999	% INCREASE
Soybean	783	6,941	786%	17,552	153%
Sunflower	13,549	36,291	168%	57,190	58%
TOTAL	14,332	43,232	202%	74,742	73%

Source: Uganda Oilseed Processors Association

The support has enabled UOSPA members to increase oil local production by over 60% from 9,800 MT in 1998 to 16,100 MT in 1999.

3.0 UGANDA'S FOOD NEEDS, CONSUMPTION PATTERNS AND FOREIGN INFLOWS

3.1 INTRODUCTION

3.1.1 Uganda's Typical Food Basket

The Uganda Food Balance Sheet of the staple foods includes; bananas, cassava, sweet potato, maize, finger millet and sorghum. The major sauces include beans, groundnuts, simsim, (sesame), peas, fish or meat and green vegetables. Fish, milk and meat are consumed to a less extent in comparison to beans, peas and vegetables. Usually groundnuts and sesame are used as a paste mixed with vegetables, beans, peas, meat and fish. Bread is largely consumed in urban areas.

3.1.2 Food Consumption requirements

The food consumption of staple foods is generally between 51% and 81% of the national per capita food availability. Consumption levels are significantly below the supply level. One such example is vegetable oil, given data of 2.83 kg per capita of oil available, per capita consumption is only 2.30 kg⁶.

⁶ The gap between per capita availability and consumption of vegetable oils is partly explained by cross-border trade.

Table 4

Commodity	Per Capita Availability (Kg/head/year) (a)	Per Capita Consumption (kg/head/year) (b)	b/a (%)
Beans	32	20	63
Maize	45	23	51
Finger millet	39	15	38
Cassava	218	131	60
S. Potato	128	81	63
G. Nuts	10	5	50
Banana	286	217	76
Vegetable oil	2.83	2.30	81

Source: EPAU Food Security Framework 1995 (Food Supply and Food Consumption)

Based on the present consumption pattern, the daily average nutrient intake for calories are about 2,400 calories, and 50g for proteins and 19g of fats⁷. The national intake levels of proteins and fats are below the recommended minimum levels of FAO (Annexes Tables A2 & A3).

The 1988/89 Uganda Demographic Health Survey (UDHS) reported that 45% of children suffer from stunting. This is a significant number of children that are food insecure. Food insecurity is attributed to: (i) limited land-holdings; (ii) soil infertility in some districts; (iii) lack of access to productive inputs such as high-yield seeds and livestock breeds and agro-chemicals; and (iv) people no longer store sufficient food due to low yields, fear of theft from granaries and are compelled by circumstances to sell produce in order to obtain cash for meeting their basic needs. These situations affect the nutrition of family members and are particularly detrimental to growing children resulting into stunting. The Uganda National Household Survey, 1997⁸ data presented in Annex Table A4 indicates that on the average, all households (HHs) are said to have two meals a day. However, the adequacy of these meals is questionable. Only 50% of the households were eating meat or fish at least once a week, and for children below 5 years, only 19% had adequate supplies of milk.

3.1.3 Nutritional Intake Requirements

The per capita daily nutritional calorie intake requirements are 2,327 calories.. The “critical” minimum calorie intake should not be less than 2,200 calories per person per day (World Health Organization). Uganda’s calories requirements is shown below.

Table 5

Age Group	% Male	Calorie Requirement	% Female	Calorie Requirement
0-9	37.7	1,600	36.9	1,600
10-19	23.9	3,000	23.1	2,530
20-39	23.6	2,900	26.0	2,050
40-59	9.4	2,700	9.1	1,850
60-69	3	2,500	2.8	1,700

⁷ EPAU Food Security Framework 1995 (National Food Requirements)

⁸ Ministry of Finance Planning and Economic Development, Background to the Budget 1999/2000

70+	2.4	2,250	2.1	1,750
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Source: Uganda National Household Survey 1994; Statistics Department, MFEPD; Demographic and Health Survey 1995

The country Average Daily per Capita Nutritional Intakes at Regional Level is presented in Annex Table A5. The recommended minimum per capita protein intake is 57.6 (FAO) and 20.3 (FAO) fats and oils. As stated earlier, the daily average nutrient intake for calories of about 2,400 calories is above WHO recommendations while the national intake levels of proteins and fats are below the recommended minimum levels of FAO (Annexes Tables A2 & A3).

3.1.4 Ratio of Human Food Consumption to Requirement

Shown in Annex Table A6 is the national and regional percentage of total food requirement based on the real consumption levels as a percentage of what is required for optimal dietary intake. The total food consumed is between 50% and 90% of the total food required for optimal intake⁹. In general more cereals and root crops are consumed compared to oil seeds, pulses and livestock products. Uganda's diet is generally heavy in starches (82-86%) and relatively low in fats and protein. This is consistent with the national agricultural production where cereal, tuber and banana production dominate. Uganda's food consumption by district and as a percentage of daily requirements shows a quite differentiated picture in terms of food security for many of the districts shown in Annex Table A7. Trade in food stuffs assists in mitigating food deficits in many districts. However, because of the high percentage of household incomes spent on food, many households in poor districts cannot afford to buy supplementary food required to bring their consumption levels to those recommended. Additionally, high rates of spoilage and losses widen the discrepancy between calculated availability from production and actual household consumption.

The per capita consumption of vegetable oil stated above is 2.3 kg¹⁰. This is lower than the recommended consumption per capita of 3.3 kg. Edible vegetable oil is a necessary element in a diet. It provides calories and aids the absorption of nutrients from other foods particularly Vitamin A. Because of its nutritive and chemical value, it is important that vegetable oil be either used in preparation of food or that the seeds which naturally contain edible oil such as soy bean, groundnuts, maize, etc. are processed and consumed in sufficient quantities. It is suspected that a large number of health problems at national and regional referral health centers and institutions are attributed to the insufficient intake of edible oils as well as poor utilization of the Vitamin A.

3.1.5 Food Supply and Production

As stated earlier, Uganda is endowed for the production of cereals and other starch crops in two seasons a year. On the average, the country has surplus in peas, maize, finger millet, sorghum, cassava, potatoes, banana, fish and goat meat and mutton. The

⁹ EPAU Food Security Framework 1995 (Regional Food Requirements)

¹⁰ R J Laker Ojok The oil industry in Uganda : Can it Compete? 1994; J K Beijuka Edible Oil and Wheat Market Analysis for PL 480 Report, August 1997

commodities in deficits are beans, wheat, rice, oil and livestock products (particularly beef and poultry products). On-farm production accounts for over 90% of total supply. Stocks hardly form 5% of the total food supply and imports are only significant for rice, wheat, and vegetable oil. Due to lack of improved seeds and associated crop husbandry practices, high crop losses ranging from about 6% in the case of finger millet to about 30% in the case of beans, maize and cassava, productivity and therefore yields attained at farm level are low (17% to 50% of what is achievable at research stations)¹¹.

3.2 DISINCENTIVE ANALYSIS

3.2.1 PL-480 Commodities-Market Impact

3.2.1.1 General

Title II Cooperating Sponsor partners are monetizing two types of commodities under the Title II Program: pure refined vegetable oil and hard red winter wheat grain (Grade II). Wheat is monetized on behalf of the umbrella partners, whereas vegoil proceeds fund ACDI/VOCA food security, feeder road and credit programs. In addition, ACDI/VOCA monetized rice to fund education and health programs in Uganda on behalf of the Italian Embassy. During FY 1999, refined vegetable oil and hard red winter whole grain wheat remained the most appropriate commodities for PL-480 monetization in the country.

3.2.1.2 Effects on Local Marketing Structure and Production: Vegetable Oil

As stated, vegetable oil availability (local production and imported) is 2.83 kg per capita while consumption is 2.3 kg per capita both of which are below the recommended consumption per capita of 3.3 kg. Less of the available oil is consumed due to low income levels and comparatively low distribution outside urban areas. For example, about 0.3 kg/capita of edible oil consumed in the western region and 1.6 kg-2.17 kg per capita in the northern and eastern region. It is also suspected that the Democratic Republic of Congo (DRC) is one of the outlets of some of the imported and locally produced oil. However, most of this cross-border trade is not documented or smuggled, and therefore difficult to gauge the level of export. It further complicates the analysis of measuring per capita consumption vs. per capita production/importation of edible oil into Uganda. The advent of war in the Great Lakes region with the subsequent disruption of production and harvests there have resulted in rising prices of various food stuff including oil and shortages in the region. In this context, food aid is serving as an economic stabilizer allowing currencies to maintain their value and economies to function normally. Since hard data on consumption levels of vegetable oil in Uganda is not available, the author extrapolated projections for edible consumption based on the following economic factors and assumptions: (i) national economic growth is above 6%; (ii) increased income at household level (real incomes) at 2% p.a (*Vegetable Oil Development Project 1997*); (iii) population growth remains at 2.5% thereby increased demand for vegetable oil 2.3 kg per capita with a population of about 22M; (iv) improved transport and infrastructure to make oil reach remote corners of Uganda; (v) the

¹¹ **Vegetable Development Project , Republic of Uganda February 1997**

national demand for edible in 1997/1998 was 40,000 MT¹²; and (vi) prices will not significantly change. Therefore, the national demand of vegetable oil is estimated to grow by 10% in the next three years to about 58,562 MT by Year 2002 as shown below.

Table 6

PROJECTIONS	YEAR		
	2000	2001	2002
Edible Vegetable Oil	48,400	53,240	58,562

The main raw materials for the production of edible oil in Uganda are groundnuts, soybean, sesame, sunflower, cottonseed and oil palm. Cultivation of crushable materials at household level is low resulting into low oil mills capacity utilization and seriously limits local vegetable oil production¹³. The need to increase crushable material supply is inhibited by high cost of production and low household profits attributed to, *inter alia*, low farm gate prices for oil seeds. The situation is exacerbated by storage losses on farm, lack of storage facilities at the mills and oil millers' inability to obtain adequate crop finance. Therefore, local supply of crushable materials is supplemented by substantial imports of crude palm and sunflower oils of about 70,602 MT (Table 7) mainly from Malaysia and Singapore and sunflower oil from Argentina and Brazil which yielded refined oil of 49,373 MT (Table 9) in 1999.

Table 7

TYPE OF IMPORTED CRUDE VEGETABLE OIL	1995 (MT)	1996 (MT)	1997 (MT)	1998 (MT)	1999 (MT)
Coconut	0.03	60	352	210	26
Cotton seed	-	-	51	86	80
Linseed	-	0.01	11	10	42
Palm kernel or babassu	-	14	67	101	1
Palm	3,779	66,977	12,646	45,517	27,612
Soybean	-	2	0.04	906	5,100
Sunflower	11,600	7,122	21,173	6261	37,741
TOTAL	15,379	74,174	34,300	53,091	70,602

Source: Uganda Revenue Authority

A quick market survey was conducted around Kampala, Jinja, Mbale and Mbarara in December 1999 and January 2000 to record the impact of Title II commodities on local markets. This, as well as UOSPA's vegetable oil price survey in northern region in October 1999 (Annex Table A8), revealed that the domestically produced edible vegetable oil can give high returns to oil processors and have a comparative advantage over the imported products. Village-based hand mill processors, medium-sized oil millers, produce local oil with capacity of 5-6 MT per day and large processors process over 100 MT per day. Most oil millers crush soybeans, sunflower seed and until recently cottonseed, but do not utilize the 180,000 MT annual milling capacity. Currently, groundnuts and sesame are not crushed because of high market prices for raw materials

¹² Media Consultants Ltd, A comprehensive Review of the Edible Oil Market in Uganda for ACDI/VOCA, April 1997.

¹³ Most small and medium mills run a single shift and close down for extended periods due to lack of raw materials.

and prohibitive cost of production compared to other oil seed crops. Groundnuts are consumed directly and substantial sesame is exported.

The local oil production is further constrained by: inadequate raw materials; high tariff charges for utilities; lack of sufficient technical capacity of the millers to maintain the processing plants leading to frequent shut-downs which result in high production and processing costs. As mentioned earlier, the strategy is to continue to promote the production of a new variety of sunflower seeds which can produce oil yields of 40% oil compared to about 25% oil content from earlier varieties. This will in the long run enable domestic production of sunflower oil to begin to reduce and eventually eliminate the need to import vegetable oil including that provided under PL 480 Title II. In fact due to support of Uganda Oilseed Processors Association (UOSPA) oil seed multiplication program, the ratio of local oil production to the monetized vegetable oil has been increasing as shown in Table 8. The most important oilseeds supported by PL 480 through UOSPA are sunflower and soybean. In 1999, 17,552 MT and 57,190 MT of soybean and sunflower seeds respectively were produced representing an increase of 153% of soybean and 58% of sunflower (an increase of 73% of soybean and sunflower together).

Table 8

CROP	1997	1998	% INCREASE	1999	% INCREASE
Soybean	783	6,941	786%	17,552	153%
Sunflower	13,549	36,291	168%	57,190	58%
TOTAL	14,332	43,232	202%	74,742	73%

Source: Uganda Oilseed Processors Association

The support has enabled UOSPA members to increase local oil production by over 60% from 9,800 MT in 1998 to 16,100 MT in 1999 (Table 9). Increased production of oilseed crushable materials supplemented by imported crude oils of 70,602 (Table 7) which yielded 49,373 MT of refined oil locally produced. A portion of imported crude oil is used for soap production although an exact percentage of these imports used for this use is not available. Local processed imported crude oils and UOSPA oil production yielded 65,426 MT or 93% of oil on the market in 1999 (Table 7). This means that vegetable oil is not produced in sufficient quantities locally if the imports of crude oils are excluded.

Table 9
(MT)

EDIBLE OILSOURCE	YEAR				
	1995	1996	1997	1998	1999
Processing Imported Crude Oils	10,765.27	51,870.29	23,709.20	32,369.80	49,372.69 ¹⁴
Local Production by UOSPA	1,304.30	1,976.60	3,465.55	9,766.90	16,052.70
PL 480 Refined Vegetable Oil	3,179.65	4,692.19	3,164.63	3,055.54	4,964.32
TOTAL	15,249.22	58,539.08	30,339.38	45,192.25	70,389.71
Local Production :PL 480 imports	41%	42%	109%	320%	323%
PL 480: National Oil Production	26%	9%	12%	7%	7%

Source: Uganda Revenue Authority and UOSPA

¹⁴ A portion of imported crude oil tonnages are used for soap manufacture.

It is evident from the data in Tables 6 & 9 that production and importation of edible oil to Uganda exceeds estimated domestic consumption. However, the apparent excess vegetable oil produced in Uganda is exported to Rwanda, DRC and Southern Sudan. Major producers of edible oil such as Mukwano, Madhivani, and Rafiki are reluctant to disclose levels of exports, although they are significant. Furthermore, there are no verifiable records of edible oil exports to neighboring countries. As previously stated, substantial amounts of edible oil manufactured in Uganda are smuggled across borders and these amounts are equally difficult to accurately assess. Given these factors and ACDI/VOCA's ongoing weekly monitoring of edible oil market prices and demand per oil tenders, monetized Title II vegetable oil does not pose a disincentive to local oil production. The funds from the monetized vegetable oil imported under the ACDI/VOCA Title II Monetization Program will continue to be utilized to finance interventions which will in turn facilitate the removal of the above impediments to oil seed producers and vegetable oil processors as well as increasing incomes for the rural producers of beans, cassava and maize. In addition, the documented vegetable oil prices in Kampala and up-country through communication with bidders, market surveys, and information received from the UOSPA who monitors prices and markets indicated that in the FY 1999, sales prices continued to be above local oil prices. Monetized vegetable oil as a percentage of national oil production has steadily been declining to 7% in 1999.

3.2.2 Wheat

Wheat production in Uganda is almost non-existent and has remained lower than that of other cereals such as millet, maize and sorghum. The production has been declining from a level of 9,000 MT ¹⁵ since 1990 compared to a range of 8,000 – 17,000 MT during the 1980s when there was a deliberate government drive to increase its production to meet the local requirements. Wheat production used to be largely promoted by commercial/industrial users for bread and/or animal feed production and the support stopped. Unlike millet and sorghum, largely produced in most of the northern areas of Uganda, wheat is not drought resistant and humidity in the southern agricultural zone makes it susceptible to disease unless regularly treated with plant pesticides. Small quantities of soft wheat varieties are produced on the high plateaus in the eastern, south and western parts of the country. There is no Hard Red Winter Wheat produced in the country and soft and hard varieties are not interchangeable for bakery purposes.

As with vegetable oil domestic consumption, there is no available data to measure wheat consumption in Uganda. However, Mr. K.K. Radhoman, Chief Executive of Kengrow Industries Ltd., one of the buyers of Title II HRW, estimates that demand for wheat flour, both imported pre-milled and milled in Uganda, is 100,000 MT per annum. The majority of milling operations and baking is centered around Kampala. There are currently 25 major bakeries in Kampala. There are additional bakeries up-country, although the exact number is difficult to estimate due to their size. The bulk of the wheat grain is required to produce flour to make bread for the working population and considerable population increases in urban areas. With large numbers of people migrating from rural areas to cities, the demand for bread has increased. It is further appealing for its reasonable price,

¹⁵ Ministry of Finance Planning and Economic Development, Background to the Budget 1999/ 2000

taste, and portability. Increased income levels, less time to prepare meals and to a lesser extent the war in DRC have surged wheat flour sales recently. Given insufficient local production, large quantities of wheat grain are imported to feed several mills that currently operate in Uganda. Imported wheat in the 1995-1999 period is shown in Table 10.

Table 10

YEAR	ESTIMATED UGANDA-GROWN WHEAT(MT)	WHEAT GRAIN IMPORTS (MT)	ESTIMATED WHEAT FLOUR IMPORTS (MT)	ESTIMATED WHEAT FLOUR SMUGGLED
1995	< 9,000	248.63	N/A	N/A
1996	< 9,000	2,154.85	N/A	N/A
1997	< 9,000	165,491.61	N/A	N/A
1998	< 9,000	49,742.87	N/A	N/A
1999	< 9,000	50,599.00	29,000 ¹⁶	>8,000

Source: Uganda Grain Milling Co. Ltd , Uganda Revenue Authority, & Bank of Uganda Trade Dept.

In calendar year 1999, a total of 10,460 MT of wheat grain was monetized under the Title II Program. Other major commercial importers and millers were Bakhresa Grain Milling Uganda, Pan Afric Commodities Ltd., World Food Program (WFP) and Uganda Grain Milling Co. Ltd.

Increased wheat flour consumption resulting from Uganda’s rapid urbanization is likely to continue through commercial channels regardless of the current food aid arrangements. Furthermore, there is a need for high protein wheat varieties with a high gluten content to blend with the soft wheat grown in Uganda. These needs are met with Hard Red Winter varieties that cannot be grown in Uganda. Hard Red Winter wheat is currently being imported under Title II Programs and principally the type of wheat imported commercially. Therefore, the Title II Hard Red Winter wheat is not in competition with the locally produced Soft Wheat varieties which are produced at a low level.

3.2.3 Rice

Rice is now widely grown in many parts of Uganda especially in the eastern and northern regions. Rice production has been readily adopted in these areas due to high market prices, demand, and reclaimed swamps suitable for paddy rice. Farmers are being directed more towards production of upland rice, which can grow on ordinary soils and water regimes. With the increasing population, especially urban population that is the major consumer of rice, the MAAIF estimated rice production of 90,000 MT in 1999 is far from adequate to fulfil the national demand of about 150,000 MT per year. Consequently, Uganda continues to be heavily dependent on imported rice. However, rice production has some potential to increase to meet growing demand. Uganda’s rice imports 1998 – 1999 are shown in Table 11.

¹⁶ According to the Bank of Uganda Trade Department, an estimated 29,000 MT of wheat flour was officially imported into Uganda in 1999.

Table 11

DESCRIPTION OF RICE	1998 (MT)	1999 (MT)
Semi-milled or wholly milled rice	34,290	29,711
Broken Rice	22,145	21,139
TOTAL	56,435	50,850

Source: Uganda Revenue Authority

Of the 4,576 MT Italian rice imported in 1998, 1,200 MT was monetized by the Title II Program in 1999. ACDI/VOCA expects to receive and monetize 2,400 MT in 2000. Monetized rice from Italy is long-grain with less than 5% brokens. It will also be packed in 5 kg bags, ready for immediate sale. Given the quality and packaging of US-origin Title II, medium-grain rice in 50 kg bags with 15% brokens, it is not competitive with Italian rice and others imported to the Ugandan market. The demand for rice is far greater than local production and therefore local rice production is for the most part not competitive with imported rice. Recent retail price for local rice was Ush.900 per kg. compared to approximately Ush.970 for imported rice.

3.3 MONETIZATION TARGETS AND MARKET STRUCTURE

The above analysis indicates that food aid (vegetable oil, wheat and rice) will not have any negative impact on local production and marketing.

3.3.1 Vegetable Oil

About 4,000 MT Title II oil on the average per year, which accounts for 7% of total domestic oil production and imports will provide a continuous and steady supply of vegetable oil given market conditions and movement of edible oil across borders via official and unofficial imports and exports. The lead importers of crude oils and subsequently wholesalers are the three crushers and refiners of vegetable oil¹⁷ whose products dominate the local wholesale and retail vegetable oil market. Golden Cup from Singapore and Golden Fry, Fresh, Elianto, etc. produced in Kenya are other brands on the market. There are also about 100-150 other wholesalers and a substantial number of retailers. Other importers of edible vegetable oil include the World Food Program mainly for relief operation involving refugees and displaced Ugandans and over 20 small importers.

The most popular packaging is 20 litres for traders taking the oil to markets outside major urban areas and 3 litre plastic containers sold to consumers in both urban and up-country trading centers. At the grassroots level, consumers purchase their oil in units ranging from 0.25 – 1 liter. Locally unrefined oils are sold both in retail-sized packaging (mainly 20 litres) and in small broken lots with consumers providing the container. Analysis of prices by brand and size of containers shows that the average suppliers' price margin is between Ush.300 and 500 per liter. Consumer prices range from Ush.300 for a 0.250

¹⁷ Mukwano Industries Limited in Kampala, Madhvani in Jinja, and Mbale Soap Works (Rafiki) in Mbale.

liter package to Ush.1,500 for one liter locally-produced oil(the retail price for PL 480 oil is Ush.1,750 per litre, similar to other imported oils and slightly higher than locally produced edible oil). Price for .25 liter is less than one liter because buyers use their own containers for reconstituted oil purchases less than one litre, whereas one litre containers are direct from the producer and sealed. The oil price structure is competitive.

ACDI/VOCA uses a tender method for commodity sales and the “price bid” is the determining factor in a successful bid. The monetization sales are regular, pre-announced, scheduled a year in advance, and track market prices of both locally-produced and other imported oils. This marketing approach assures that the monetization activity has no effect or disincentives for storage or planting decisions.

Because of the “price bid” system, it has been difficult to arrange a combination of small and large volume buyers and a mix of up-country and Kampala based traders participating in the sale process. Consequently, 50% of the oil is sometimes bought by a group of large, Kampala-based buyers and the remainder is shared between up-country and Kampala small buyers although there have been instances when purchases are split almost equally between small and big buyers in Kampala and up-country.

3.3.2 Wheat

Over 80% of the Uganda wheat demand has to be imported largely because the Hard Red Winter varieties cannot be produced locally. In 1999, approximately 10% of the estimated demand for wheat, 100,000 MT was monetized on behalf of the Title II Cooperating Sponsors. The Cooperating Sponsors will continue to provide a steady flow of wheat to maintain the market supply and will have no negative effect on market prices. The sales method will continue to be a combined approach of tender and negotiations. Currently, there are six operating mills in Uganda. Some of these mills buy their wheat from alternate sources outside the country. Shown in Table 12 below is local whole grain wheat millers’ maximum capacity in Uganda of about 104,560 MT. Presently, Kengrow and Ntake, with milling capacity of 15,000 MT each, are the main buyers of the Title II wheat.

Table 12

MILL	MAX. CAPACITY (MT/YEAR)	MIN. CAPACITY (MT/YEAR)	BRAND NAME	PACKAGING
Uganda Grain Milling Co.	20,000 ¹⁸	20,000	Drum	2 kg; 10 kg; & 50 kg
Premier	15,000	12,000	Crane	2 kg. & 50 kg,
MyFair	5,000	4,000		2 kg & 50 kg.
Kengrow Industries Ltd.	15,000	12,000	Kengrow	2 kg
Ntake Bakery	15,000	12,000	Horse Brand	2 kg
Bakhresa	34,560	23,040	Azam	100kg & 2kg
TOTAL	104,560	83,040		

Source: Ntake Bakery and Kengrow Industries Ltd.

¹⁸ Installed capacity at UGMC is 80,000 MT pa, but due to financial and management problems, this level has never been reached. Above figures reflect actuals from recent years.

The wheat market experiences cash payment difficulties among many of the buyers. Credit from importer to miller to baker is the usual sales mode. However, the Title II program is restricted from sales on credit and as a result, the program has experienced difficulties in marketing wheat shipments at certain times at reasonable prices.

Wheat flour consumption for both large-scale bakeries and home-use is expected to grow in the next several years based on household income indicators and increasing urbanization. This will, in turn, increase demand for Title II HRW wheat grain for which there is sufficient milling capacity extant in Uganda. An annual wheat grain demand increase of 10% over the next several years would not be unrealistic.

3.3.3 Rice

As mentioned earlier, the MAAIF estimated demand for rice is 150,000 of which 60% is projected to be met from local production. In 1999, 34% of the demand was imported. Title II aid (monetization of 1,200 MT Italian rice accounted for only 2%. The monetization of 2000 MT in Year 2000 is expected to increase the contribution to 4%. There will definitely be no negative effect on market prices or mechanism for rice. Like the vegetable oil, sales method was by tender on behalf of Italian Embassy and the Ministry of Health. Over 70% of successful bidders are Kampala-based companies and traders and 30% are shared among various up-country traders.

Usual Marketing Requirements for East Africa were requested from the Agricultural Attache with the US Embassy, Nairobi, Kenya. However, this information has not been forthcoming to insert in this Bellmon analysis.

3.4 COST RECOVERY ANALYSIS

From random samples of shipments of vegetable oil and wheat sold in 1997 – 1999, the price was between US\$ 1045 and US\$ 1237 and on the average US\$ 304 per MT respectively. As shown in Table 13, the monetization of the two commodities met and exceeded the USAID/FFP cost recovery benchmark of the higher of 100% FAS or 80% of C&F. As apparent from the table and recent wheat grain sales in May 2000, prices for Hard Red Winter Wheat have been declining from abnormally high global wheat prices in 1997.

Table 13

COMMODITY	TITLE II PARTNER	1997			1998			1999		
		C&F	S.P/ MT	% REC	C&F	S.P/ MT	% REC	C&F	S.P/ MT	% REC
Vegetable Oil	ACDI/VOCA	1131	1280	113%	1211	1265	104%	1191	1168	98%
Wheat	ACDI/VOCA	-	-	-	-	-	-	321	295	91.9%
	AFRICARE	402	356	89%	335	320	95%	327	295	90.23%
	TECHNOSERVE	-	-	-	-	-	-	310	285	91.9%
	WORLD VISION	-	-	-	-	-	-	303	292	96.4%

S.P/MT = Selling Price per metric ton % REC = Percentage Cost Recovery
Two sales were conducted for Africare in 1997, figures depict the average of both sales.

Source: PL 480 Title II Program, Kampala Uganda

3.4.1 Taxes

Section 4.0 Subsection 4.1 of the Food for Peace Agreement between the Government of Uganda (GOU) and the Government of the USA and ACDI dated November 25, 1996 exempts ACDI from “payment of taxes, duties and/or levies on the vegetable oil and hard red winter wheat to be imported and monetized.” In addition, the importation of the oil and wheat are allowed without consular invoices, or if required, “to issue consular invoices without cost to ACDI.” Despite this agreement, VAT-registered vegetable oil buyers have been unable to claim the input credit for payment of VAT charges. This issue has posed considerable problems for buyers who were expecting an input credit for VAT paid since 1996. ACDI/VOCA has held ongoing discussions with the USAID Mission to have this issue rectified by the Ministry of Finance and the Uganda Revenue Authority.

In March 2000, ACDI/VOCA was able to obtain an exemption for VAT on wheat on the grounds that it is not a value-added product and is further processed in Uganda. Given the ongoing problems with the VAT issue on vegetable oil commodity, this solution proved the most expedient to secure VAT exemption on wheat commodity.

4.0 THE ROLE OF FOOD AID

In 1999, over 105,000 MT of food aid was imported into Uganda from the United States of America and other non-US sources (Table A9). The bulk of the aid food largely brought in by the World Food Program was maize and maize meal constituting of 75% of total food aid imported¹⁹. Vegetable oil and Hard Red Winter wheat mainly from the United States together constituted 16%. Other food aid (peas, corn, sorghum, beans, iodized salt, sugar and dry milk) account for the remaining 9%. Presently (Year 2000), food aid of over 17,000 MT is dominated by the US vegetable oil (25%), hard red winter wheat (54%), maize and peas together forming 15% (Annex Table A9). So far, 1,500 MT of maize, 4,500 MT of vegetable oil, 9,670 MT of Hard Red Winter wheat and 2,235 MT of other commodities (peas, corn and sugar) have been distributed in the current year.

Both the vegetable oil and hard red winter wheat have been monetized. In 1999, wheat flour consumption was about 100,000 MT. To this, total food aid contributed approximately 10% of the commodity consumed (Table A9). Vegetable oil consumption was about 44,000 MT in 1999. Food aid from all countries comprised of about 15% of the commodity consumed (ibid).

5.0 STORAGE AND HANDLING CAPABILITIES

5.1 Port Facilities

¹⁹ The sources of these figures are the World Food Program and ACDI/VOCA PL480 Title II Program presented in Table A9

As mentioned earlier, Uganda is a land-locked country. It is linked to the ports of Mombasa in Kenya and Dar es Salaam in Tanzania by rail and road. The major port of entry is Mombasa.

All monetized commodities must be shipped to the Port of Mombasa for onward trans-shipment to Uganda. The Port of Mombasa includes Kilindini Harbour, Port Reitz, the 'Old Port', Port Tudor, and the whole of the tidal waters encircling Mombasa Island. The port has 16 deep-water berths with total quay length of 2,044 metres and a maximum dredged depth of 11 metres. Bulk cargo such as grains can be handled at one of the 13 general cargo berths. In addition, the Kenya Port Authority (KPA) offers 13 main quay transit sheds with a total floor area of 105,490 metres and 7 back port sheds with a total area of 46,000 square metres.

Normally, congestion is not a problem at the Port. However, during the rainy season, there has been considerable back up. Also, total traffic has increased from 7,145,000 MT in 1991 to 8,559,000 MT in 1998, while the majority of the traffic consists of bulk liquid cargo (chiefly crude oil imports), there is increasing traffic at the container terminal where vessels carrying vegetable oil commodity berth. During a survey trip to the Port of Mombasa in March 2000, Port officials informed the delegation that new crane equipment would be purchased and refurbishing of berths would occur in the next year.

The main problem ACIDI/VOCA has encountered at the Port is the lack of rail wagons for overland shipment to Uganda. This results in delays of commodity shipment and also exposes wheat to potential spoilage if it is not properly stored at the Port. It is preferable to ship commodity via rail as it tends to be less expensive than shipping to Uganda by truck. Furthermore, new truck weight axle limits are in force and reduce the amount of cargo that can be shipped per truck.

5.1.1 Vegetable Oil

The oil is ordered (Called Forward) in 6x4 liter tins to minimize damage in transit and storage and packed in 20 foot sealed containers. The containers are transported from a US port to Mombasa and then trans-shipped to Kampala, Uganda. In Kampala, the cartons in the container are off-loaded and stored in a clean, dry and secure store that ACIDI/VOCA has been using for vegetable oil storage for the last 8 years without incidence of loss. ACIDI/VOCA hires experienced personnel and an independent surveyor to supervise the off-loading of the oil at the warehouse in Kampala.

5.1.2 Rice

Rice is stored in the ACIDI/VOCA warehouse and sold to the highest bidder. This is done in the same monetization process as vegoil.

5.1.3 Wheat

Bagged wheat from the US is off-loaded break-bulk in Mombasa, put on rail wagons, and shipped to Jinja and Kampala. When the grain arrives in Jinja, it is off-loaded directly into the buyers' warehouse located on a rail siding. In Kampala, the wheat is normally collected at the rail yard by truck. However, if the buyer does not have sufficient warehouse capacity, it is stored at the rail yard where warehouse space is available. The same personnel as above supervise the off-loading of the grain at the railway yard.

5.2 Storage Facilities

There is sufficient storage capacity in the country for both vegoil and wheat grain. Some of the private sector storage capacity available in Jinja and Kampala is shown in Table 14.

Table 14

WAREHOUSE	STORAGE CAPACITY (MT)	WAREHOUSE	STORAGE CAPACITY (MT)
Ntake Bakery	2,000	Produce marketing Board	20,000
Uganda Grain Milling Co. Ltd (Jinja)	20,000	Hudig (U) Ltd	20,000
Kengrow (Jinja)	4,000	Interfreight	5,000
Bakhresa Grain Milling Uganda	10,000	Ntinda Industries	10,000
Premier	3,000	Mukwano Industries	10,000
ACDI/VOCA	2,500	SUB-TOTAL	65,000
SUB-TOTAL	41,500	GRAND TOTAL	106,500

5.3 Transport Capabilities

The region's road network is in poor condition due to insufficient maintenance funds and axle overloads resulting in higher transit times and increased vehicle operating costs. New axle load limits have led to the reduction of payload per truck and the cost of transporting one ton of cargo from Mombasa to Kampala going up by 30% notwithstanding costs involved in case of off-loading of "excess " cargo emanating from inconsistencies in different weigh bridges that lack calibration. Title II commodities are among transit high-risk goods (wheat flour, textiles, sugar, batteries and edible oil) that are always escorted to Nakawa Inland Port.

The railway networks of Uganda Railways Corporation (URC) Kenya Railways Corporation (KRC) and Tanzania Railways Corporation (TRC) suffer from ill-maintained equipment and therefore shortage of wagons and locomotive power, poor track system and maintenance. This has left transportation by road, the most expensive option.

6.0 CONCLUSION

6.1 Findings

Uganda has productive agricultural land and favorable climate conducive to sustainable agriculture. Consequently, Uganda is generally self-sufficient in foodstuffs particularly

in cereals (maize, millet, sorghum), root crops (cassava, sweet potatoes, etc) and cooking bananas (*matoke*). With the exception of wheat and rice, the country is a surplus starch producer. The food balance sheet is composed of staple foods (bananas, cassava, sweet potatoes, maize, finger millet, Irish potatoes and sorghum) and sauces that include beans, groundnuts, sesame, peas, fish and meat. The staple food consumption is between 51% and 81% of the national per capita food availability. Oil consumption per capita is 2.3 kg of the per capita availability of 2.83kg. In general, more cereals and root crops are consumed compared to oil seeds and pulses. Therefore, the diet is heavy in starches and relatively low in fats and protein.

6.1.1 Government Policies

Following market liberalization, food prices are determined by the market. There are no more price controls and government's role in marketing and trade is mainly facilitating the private sector. Produce marketing board monopolies have been abolished and the market is competitive. The Government's objective in poverty alleviation, detailed in the *Plan for Modernization of Agriculture (PMA)*, is to increase agricultural production through improved technology. This is expected to boost household income and food security in the rural areas.

6.1.2 Disincentive Analysis

In 1999 and current Year 2000, refined vegetable oil and hard red winter wheat remained and continue to be the most appropriate commodities for PL 480 to monetize. Local edible oil production as a result of support to UOSPA continues to increase. However, vegetable oil is not locally produced in sufficient quantities to meet national and export demand. In 1999, UOSPA members produced 16,052.70 MT, by crushing sunflower and soybean 323% of PL 480 Title II oil. The Title II oil was 7% of imports and local production. In addition, the market price of Title II oil is in the same range with other imported oils but commands a higher price than locally-produced oil. Therefore, the current levels of monetized Title II oil have no disincentive effect on local production or the market for imported oils. The country will still need PL 480 oil imports of 4,000 to contribute to the demand estimated to be 48,400 MT in 2000, 53,240 MT in 2001 and 59,000 MT in 2002. In addition, exports of locally produced oil to neighboring countries will continue to increase and make up the balance of local production and imports.

Like vegetable oil, substantial amount of rice and wheat are imported into Uganda. Due to ease in preparation of rice and consumption of bread that has occurred with economic growth in the last decade, wheat and rice have penetrated the urban market in Uganda. Although data is unavailable, bread and rice consumption have increased considerably especially in Kampala and regional towns. The demand for wheat flour is increasing due to Uganda's rapid urbanization, which is likely to continue in the foreseeable future. Currently, more than 90% of the nation's wheat grain/flour requirements are imported. Local production of wheat grain has not increased beyond 9,000 MT since the 1990s and Uganda can only produce soft wheat varieties. Therefore, the Title II Hard Red Winter wheat is not in competition with the locally produced soft wheat varieties. Uganda's

annual wheat grain and flour requirements for the next 3 years will increase from about 100,000 MT. There will be ongoing need for Title II Cooperating Sponsor Partners and commercial enterprises to continue providing a steady flow of wheat to maintain the market supply. There will be no negative effect on local production and prices. Likewise, local rice production is far below the national demand and like wheat, its consumption is likely to increase as a result of urbanization and improving household incomes. However, given the quality of imported rice compared to the specifications on available Title II rice commodity, the author does not recommend consideration of monetizing US rice in Uganda for the program. None of these commodities have adverse Bellmon effects in the quantities envisaged in the near future.

The monetization of vegetable oil and wheat met and exceeded USAID/FFP's cost recovery benchmark under the current market conditions. In 1999, the percentage cost recovery range was 98% for vegetable oil and 90.23% to 96.4% for wheat. Although none of the PVOs paid taxes on the commodities monetized directly, buyers continue to have difficulty in claiming the input for VAT payments on vegetable oil commodity.

Uganda, a land-locked country, is linked to the port of Mombasa in Kenya by road and rail. It is the major port of entry. At Mombasa, there are sufficient cranes, top loaders and forklifts for expeditious off-loading of vessels and transfer to rail wagons or trucks. Storage capacity at the Port of Mombasa is approximately 50,000 MT. The road and railway networks in both Kenya and Uganda are in poor condition due to insufficient maintenance funds and lack of sufficient rail wagons and locomotive pull power. The road axle load limits lead to the reduction of payload per truck and the cost of transporting one ton of cargo from Mombasa to Kampala will increase by 30%, thus most cargo will move via rail.

There is sufficient, clean, dry and secure storage capacity in the country for all monetized commodities. In addition to the ACDI/VOCA warehouse, there is private sector storage capacity of 104,000 MT in Jinja and Kampala available. Improved port handling facilities and addressing road and rail maintenance problems will result in a reduction of transit time and handling costs, subsequently lower consumer prices for most imported commodities, including monetized vegetable oil, wheat and rice.

ANNEXES: TABLES

Table A1
(USHS/KG)

COMMODITY	SOROTI		TORORO		MBARARA		KASESE		JINJA		KABALE		GULU		ARUA	
	RET	WH	RET	WH	RET	WH	RET	WH	RET	WH	RET	WH	RET	WH	RET	WH
BEANS	400	320	350	320	300	200	200	150	400	300	250	200	300	250	450	400
CASSAVA DRIED	90	80	200	140	300	200	90	60	150	125	300	280	300	200	230	210
CASSAVA FLOUR	250	200	250	160	350	300	100	90	350	250	400	350	530	420	700	600
CASSAVA ROOT FRESH	80	60	180	100	190	170	120	90	183	139	200	180	130	100	160	130
GROUNDNUTS SHELLED	1,400	1200	1200	900	900	800	900	750	1300	1000	900	850	720	700	500	400
MAIZE	-	-	250	170	180	150	150	100	200	160	220	170	200	170	180	170
MAIZE FLOUR	500	400	500	360	320	300	500	400	500	350	250	150	500	400	500	450
MATOKE	380	300	200	150	150	125	200	150	201	182	500	450	450	350	600	500
MILLET	400	400	400	350	400	300	200	120	400	300	250	200	330	270	250	230
MILLET HUNGA	600	550	800	600	700	600	600	450	700	500	500	450	600	550	750	700
POTATOES SWEET	100	100	200	170	280	240	130	90	172	135	250	200	90	70	160	130
RICE	800	700	800	650	900	800	900	750	800	700	900	850	550	500	600	550
SIM SIM (SESAME)	800	700	800	550	-	-	-	-	800	700	-	-	650	600	410	400
SORGHUM GRAIN	150	150	250	180	-	-	300	150	300	250	350	300	150	120	220	200
SORGHUM FLOUR	250	200	300	200	-	-	350	250	450	400	500	450	5090	400	450	400
SOYA BEANS	-	-	500	400	-	-	800	700	500	350	-	-	300	250	650	600
SUNFLOWER	-	-	200	150	-	-	-	-	-	-	-	-	270	220	65	60

RET = Retail Price

WH = Wholesale Price

Source: Eastern and Central Africa Program for Agricultural Policy Analysis (ECAPAPA) Market Information Service

Table A2: Uganda intake of Calories, Proteins and Fats

Nutrient Value	Consumption	Recommended & Source	% Recommended
Calories (critical level)	2400	2420 (UNDP) 2200 (WHO)	99%
Proteins (minimum)	50	57.6 (FAO)	86%
Fats (minimum)	19	20.3 (FAO)	94%

Source: EPU Food Security Framework 1995 (National Food Requirements²⁰), UNDP: Human Development Report, 1993; FAO: Handbook on Human Nutritional Requirement, 1974.

Table A3: Findings of Uganda National Household Survey, 1997

INDICATOR	REGION				
	CENTRAL	EAST	NORTH	WEST	UGANDA
Average number of meals per day	2	2	2	2	2
Household purchasing meat or fish at least once a week (%)	67	42	48	45	52
HHs with adequate supply of milk for children below 5 yrs (%)	27	21	12	10	19
HHs that can afford to buy salt when it gets finished (%)	95	90	61	66	79

Source: Uganda National Household Survey, 1997

²⁰ Lack of adequate food nutrient intake results into malnutrition in children and ill health, thereby reducing the ability of the population to develop optimally, and thus directly affecting the country's productivity. The most common malnutrition diseases among children under 5 years in Uganda include Kwashiorkor, marasmus, stunted growth and underweight. According to the Uganda Demographic and Health Survey of 1988/89, about 45% of the children suffer from stunting.

Table A4: Food crop intake contribution to Calories and Protein.

NUTRITIONAL INTAKE	FOOD CROP	PERCENTAGE FOOD CROP CONTRIBUTION BY REGION			
		CENTRAL	EASTERN	NORTHERN	WESTERN
CAROLIES	Pulses	10%	10%	14%	13%
	Cereals	7%	16%	17%	18%
	Oil Crops	6%	5%	19%	8%
	Bananas	13%	12%	4%	15%
	Root & Tubers	24%	22%	18%	17%
PROTEIN	Pulses	16%	15%	-	19%
	Cereals	11%	25%	-	27%
	Oil Crops	9%	8%	25%	11%

Table A5: Uganda's Average Daily per Capita Nutritional Intakes at Regional Levels

Nutrient Value	Eastern	Northern	Western	Central
Calories (cals)				
- Consumption	2,608	2,495	2,181	2,353
- Requirement	2,420	2,420	2,420	2,420
	108%	103%	90%	97%
Proteins				
- Consumption	51.37	45.66	42.80	49.95
- Requirement	57.6	57.6	57.6	57.6
	89%	79%	92%	87%
Fats				
- Consumption	15.95	16.57	21.26	22.51
- Requirement	20.3	20.3	20.3	20.3
	79%	82%	105%	111%

Source: EPAU Food Security Framework 1995 (Regional Food Requirement), UNDP: Human Development Report, 1993, FAO: Handbook on Human Nutritional Requirement, 1974.

Table A6: Uganda's national and regional % of total food requirement based on real consumption levels as a % of what is required for optimal dietary intake

Food Group	Central	Eastern	Northern	Western	Uganda
Pulses	68	72	86	84	75
Cereals	68	79	83	85	82
Root crops	73	90	84	94	86
Oil crops	52	54	52	74	68
Milk	75	79	74	85	80
Meat	52	52	48	74	66

Source: EPAU Food Security Framework 1995 (Regional Food Requirements)

Table A7: Uganda's food consumption by district and as a percentage of daily Requirements

DISTRICT	CALORIES	PROTEINS	FATS	DISTRICT	CALORIES	PROTEINS	FATS
Jinja	107	104	82	Iganga	114	99	85
Kamuli	105	86	68	Tororo	110	104	56
Mbale	112	116	72	Kapchorwa	114	91	55
Kumi	96	48	85	Soroti	88	65	77
Moroto	85	57	68	Kotido	82	62	70
Apac	110	84	65	Lira	106	82	88
Kitgum	113	85	89	Gulu	111	83	88
Moyo	76	66	72	Arua	110	90	84
Nebbi	106	83	82	Masindi	101	92	96
Hoima	91	86	89	Kabarole	96	85	109
Bundibugyo	78	84	94	Kasese	104	93	106
Kabale	98	84	110	Rukungiri	64	82	101
Bushenyi	83	102	110	Mbarara	85	103	116
Rakai	92	97	96	Masaka	94	100	109
Mpigi	102	96	101	Mukono	99	89	116
Luwero	88	82	99	Mubende	99	68	97
Kampala	104	68	107	TOTAL	99	86	94

Source: EPAU Food Security Framework 1995 (Food Supply and Food Consumption

Table A8: UOSPA Vegetable Oil Price Survey –Northern Region

CATEGORY	BRAND	SOURCE	UNIT SIZE	RETAIL PRICE	WHOLESALE	AVG PRICE/LITRE
PALM OIL	Ok	Singapore	3 litres	6,000	5,700	2,000
	Rafiki	Uganda	20 litres	29,400	29,000	1,500
LARD	Kimbo	Kenya	500gms	2,000	1,700	3,700
	Cowboy	Kenya	500gms	2,000	1,700	3,700
	Chipsy	Kenya	500gms	1,700	1,700	3,400
SOYBEAN	PL 480 Veg Oil	USA	4 litres	7,000	6,500	1,750
	Soy Oil	Canada	5 litre	8,000	7,500	1,600
OTHERS	New Moroto	Uganda	20 litre	31,000	30,500	1,500
	Mukwano	Uganda	3 litre	5,500	5,000	1,833
	Akoli Kori	Uganda	20 litres	33,000	30,000	1,650
	Lira Millers	Uganda	20 litres	30,000	29,000	1,500
	AMA	Uganda	20 litres	30,000	29,000	1,500

Source: Uganda Oilseed Processors Association, October 1999

Table A9: Food Aid 1999-2000 by Source and Type

COUNTRY OF ORIGIN	1999					2000				
	TYPE OF FOOD (MT)					TYPE OF FOOD (MT)				
	MAIZE & M/MEAL	VEG OIL	HRW WHEAT	OTHERS	TOTAL	MAIZE & PEAS	VEG OIL	HRW WHEAT	OTHERS	TOTAL
BELGIUM	3,852	-	-	-	3,852	-	-	-	-	-
DENMARK	-	-	-	504	504	-	-	-	147	147
FINLAND	-	618	-	-	618	-	-	-	-	-
GERMANY	10,170	225	-	667	11,062	-	-	-	-	-
ITALY	-	-	-	660	660	-	-	-	-	-
JAPAN	856	-	-	1,199	2,055	-	-	-	-	-
NETHERLANDS	2,000	-	-	400	2,400	-	-	-	194	194
NEW ZEALAND	-	118	-	-	118	-	-	-	-	-
NORWAY	1,366	-	-	-	1,366	-	-	-	-	-
SWEDEN	1,634	-	-	150	1,784	-	-	-	86	86
SWITZERLAND	3,246	-	-	-	3,246	-	-	-	-	-
USA	56,323	5,750	10,460	5,331	77,864	2,710	4,500	9,670	598	17,478
TOTAL	79,447	6,711	10,460	8,910	105,528	2,710	4,500	9,670	1,025	17,905
% OF TOTAL	75%	6%	10%	9%	100%	15%	25%	54%	6%	100%

Source: World Food Program and ACIDI/VOCA PL 480 Title II Program

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