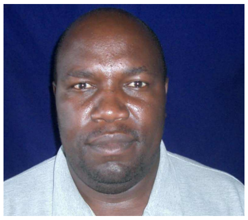


TITLE OF ASSIGNMENT:

SUNFLOWER VALUE CHAIN IN TANZANIA

BY: Enock Stanley Ugulumu

Version: ii **Date**: June, 2008. **Intake:** DBA II

SUNFLOWER VALUE CHAIN ANALYSIS- TANZANIA

1.0 OBJECTIVE OF THE VALUE CHAIN ANALYSIS

This paper analyses the value chains (CV) of sunflower on the domestic markets in Tanzania and regional markets in East Africa. The paper's approach looks at various levels involved in the sub- sector from input supply, production by small hold farmers, processing, wholesale businesses, retail businesses and transportation that cut across the value chains levels.

The paper discusses briefly, the functions and the Institutions which are involved in and lastly, the paper identifies a number of constraint, opportunities and future developments to be involved in the value chains of the sub-sector.

2.0 SUNFLOWER PRODUCTION IN TANZANIA

Sunflower sub- sector represents one of the key sectors of agriculture in Tanzania. It ranks as one of the most important vegetable oil with high value.

According to the report by the Ministry of agriculture, food and cooperatives (2008) total production of sunflower seeds in 2004/05 stood at 134,360 metric tones and out of this volume, Iringa produced 12,200 tones, Singida produced 67,000 tones and Rukwa produced 21,010 tones to mention few regions.

Vegetable Oils production have shown erratic trend (agriculture& livestock policy, 1997). Poor produce prices and collapse of the domestic and export marketing systems to a larger degree have contributed to the falling trend. Other factors include weak research and extension services.

The government policy is to strengthen research and extension services so as to facilitate the formation of traders associations, quality service and crops and information system to assist small holder farmers' benefit from the existing linkages of sub sector actors/players.

2.0 MAPPING THE SUBSECTOR VALUE CHAINS

2.1 DEFINITIONS

POVERTY:

Many authors have written about poverty. In many cases poverty is multidimensional phenomenon that refers to people in poor countries / developing countries who can not meet their basic life needs or can not meet the economic-social needs and other standards of well being. The paper tries to assess the involvement of poor sunflower farmers in the value chain in relation to the application of microfinance and support services as important inputs in the process of poverty alleviation

AGRIBUSINESS:

Agribusiness is the chain of interrelated industries that directly or indirectly are involved in the processes of production, transformation, inputs supply, retail and wholesale, and service provision to the agricultural sub sector.

In Tanzania majority of agricultural exports are not added value though processing. Agriculture and agribusiness contribute about 60 percent of the Tanzania's GDP. However, in view of the existing opportunities in the agriculture sector, it can contribute more if efforts to add value are highly considered.

3.0 AGRICULTURE INDUSTRY- AN OVERVIEW

In Tanzania, agriculture accounts 50% of the country's gross domestic product (GDP) and 60% of agriculture exports. Agriculture employment accounts 80% of the total population of 39,000,000 people.

The table below indicates an average annual growth rates and average contribution to growth of the key economic activities in Tanzania.

Economic activity	**Avg. Ann. growth rates**			**Avg. Contr. to growth**		
	1990-94	1995-99	2000-04	1990-94	1995-99	2000-04
Agriculture	3.1%	3.6%	4.8%	1.5%	1.8%	2.3%
Industry	2.0%	5.4%	8.7%	0.3%	0.9%	1.5%
Services	1.9%	3.8%	5.9%	0.7%	1.3%	2.0%
Total GDP (factor cost)	2.5%	4.0%	5.8%	2.5%	4.0%	5.8%

Source: URT 2004, Economic survey

4.0. SUNFLOWER SUB SECTOR

Sunflower sub-sector represents one of the key sectors of agriculture industry in Tanzania.

It ranks as one of the most important vegetable oil with high value and on International market, sunflower ranks fourth after soybean, oil palm and rapeseed. In Tanzania oil

extracted from sunflower by local produces contributes to 40% of the national cooking oil requirements (ARI – Ilonga). The development of this sub sector in Tanzania to a larger degree has been triggered by two main factors that include: food value-basically sunflower is grown for its edible oil production and secondly, processing ability by farmers at farm level.
The table below indicates annual estimates of sunflower production from sixteen regions in Tanzania. The period ranges from 2000/2001 – 2004/2005.
(In '000 tones)

S/N	**REGION**	**2000/01**	**2001/02**	**2002/03**	**2003/04**	**2004/05**
1	Arusha	-	7.40	0.44	0.06	0.11
2	Dodoma	-	0.6	6.58	34.64	16.66
3	Iringa	-	16.30	7.30	63.48	12.21
4	Kagera	-	-	0.10	0.02	0.02
5	Kilimanjaro	-	-	3.72	2.80	0.29
6	Manyara	-	-	6.37	12.11	5.01
7	Mara	10.50	-	0.01	0.35	0.19
8	Mbeya	4.69	1.42	1.81	1.71	2.75
9	Mwanza	-	-	0.03	0.07	0.02
10	Morogoro	0.56	0.60	0.13	5.15	2.04
11	Rukwa	32.12	26.18	6.10	49.96	21.01
12	Ruvuma	-	0.01	0.40	1.54	1.45
13	Shinyanga	7.80	8.80	0.46	2.57	2.84
14	Singida	25.20	42.50	21.34	72.64	67.00
15	Tabora	-	0.63	0.15	0.74	0.89
16	Tanga	-	0.01	0.03	0.60	1.87
	Total	**80.87**	**104.40**	**55.04**	**247.84**	**134.36**

(Source: Ministry of agriculture food and cooperatives, 2008)

4.1 Sunflower value chain analysis

The sunflower value chain analysis involves a number of functions and Institutions. It has both backward and forward integrations. Small holder farmers as growers are at the central point. Farmers are linked with input suppliers (backward integration). The inputs include sunflower seeds, fertilizers, and chemicals. Other linkages with sunflower growers involve oxen and tractors owners who do farm tillage operations for farmers.

After harvesting sunflower seeds, a number of routes are involved in the forward integration. In order to reach sunflower seeds processors, farmers may sell directly to the processors or sell through the middlemen who buy seeds from farmers. Under this route, transporters have a function of transporting sunflower seeds to the mills. In Tanzania, some processors do own trucks and therefore can directly buy from farmers and collect the seeds for processing or may work in conjunctions with middlemen on contractual basis to buy and transport sunflower seeds from farmers. Processors have linkages with suppliers of machineries, utility suppliers, spare parts and packaging materials.
There a number of activities involved after oil production by processors. The activities include-transporting, wholesaling, retailing, and distribution. In many places of Tanzania,

growers do extract oil from sunflower seeds for home consumption and some oil extractors depend on well equipped processors to filter their crude oil.
Sunflower edible oil and sunflower seed as products have end markets all over Tanzania and all countries around Eastern and Southern Africa (Kenya, Uganda, Burundi and Zambia).

The market trends for the edible oil are on the increase and local production can not meet the demand. Many end consumers are refraining from using non vegetable oils because of fear of cholesterol.
Globally, the leading countries in the production of sunflower include Russia and Argentina which are said to have produced 1.9 and 1.3 million tons annually between 1990 and 1994. Other countries include France, Span, China, India and USA. In Africa, sunflower producing countries include South Africa, Zimbabwe, Sudan, Tanzania, Kenya, Zambia, Mozambique, Angola and Malawi.

4.2 Governance

Because of poor market linkages, inadequate information and poor infrastructure, decisions concerning prices of sunflower products are decided by few players in the value chain. The middlemen, processors and end users of sunflower products control the sunflower market.

4.3 Sub sector – Participants

According to SLE publication series (2008) the value chain is a development concept with two main perspectives:

A. Functional role:-a value chain is a series of related business activities – starting with a provision of specific inputs, production processing, marketing and finally, consumption

B. Institutional perspective:-value chain is a set of players/ institutions performing function under (a) above which are linked with series of business transactions.

Key players of vegetable oil (Sunflower sub-sector in particular) in Tanzania comprise a number of participants (actors). They module the following

1. Producers: Farmers who produce sunflower seeds and sell to processors.
2. Input Supplies: Supplier of seed: chemicals, pesticides, fertilizers to farmers before they start production.
3. Processors: They include small scale oil millers and large scale oil miller – (Both are from the private sector).
4. Refiners: Purify crude oil into edible oils (i.e. suitable for human consumption) – Purified crude oils are from to small scale and large scale processors.
5. End users: Consumers from local and regional markets for the case of sunflower oils and oil cakes as livestock feed

5.0 KENYA SUNFLOWER SUB-SECTOR

In Kenya, private sector is largely credited with the sunflower sub-sector growth. Small hoder farmers are involved in the production of sunflower and sale the sunflower seeds to processors and refiners.

Key players in the sunflower sub-sector involve producers (small scale farmers and large scale farmers), processors-who extract oil from sun flower seeds, they do produce oil cake that is used as animal feeds and refiners –these convert crude sunflower oils to more refined and suitable for human consumption oil. The public sector players involved are: Ministry of agriculture, Ministry of trade and industry, Ministry of finance and government agencies and other agencies that Include: Kenya agricultural research institutes (KARI) and HCDA.

Under the Marketing, the sub sector has a more than 30 companies that process and refine oils from sunflower and from other oil crops. The table below shows a list of some processing and refining companies in Kenya.

Company name	Location	Activities	Products
Arkay manufacturing plant	Eldoret	Buyers of sunflower seeds	Sunflower oil
Bidco Oil refineries	Nairobi	Refining	Sunflower oil
Kapa Oil refineries	Nairobi	Refining	Sunflower oil
Rifty valley product Ltd	Nakuru	Processing	Sunflower oil
Voi industries	Nakuru	processors	Sunflower seeds

Source: Kenya vegetable oil industry report (2005)

In Kenya, Sunflower sub sector has been making efforts to satisfy the local and export markets. The area covered by sun flower as a cash crop has increased from 4560 hectares in 1999 to 7793 hectares in 2003 and production of Sunflower oil increased from 3819 tonnes in 1999 to 8129 tonnes in 2003 (vegetable industry in Kenya, 2005). Sun flower is grown in almost all Provinces in Kenya as indicated by the table below:

Area under oil crop production by province, Kenya 2003 (Ha)

Province	Rift Valley	Western	Eastern	Nyanza	Coast	North Eastern	Central
Sunflower	1236	2946	15	3324	211	61	0

Source: Vegetable oil industry report, 2005

Production of vegetable oil crop (Sunflower oil) Kenya, 199-2003 (Tonnes)

Year	1999	2000	2001	2002	2003

Sunflower oil	3819	4025	4370	6820	8129

Source: Vegetable oil industry report, 2005

5.1Marketing

Kenya exports her sunflower oil plus other oil from other oil seed sub sectors to markets within Kenya, the East Africa, Horn of Africa and Southern Africa regions. It also exports oils to other markets that include: European markets in The Netherlands, Germany, The UK and the United States of America in the form of edible oil or sunflower seeds.

6**.0 Sub-sectors constraints and opportunities** (Tanzania and Kenya)

6.1 Constraints:

- Rainfall not reliable
- Poor farming tools and methods
- Insects and pests
- Inadequate knowledge by sunflower farmers
- Fluctuating market prices – of – sunflower seeds
- Seeds – not improved hence low production of both seeds and edible oil
- Competition from edible oils- imports
- Poor infrastructure
- Poor linkages among stakeholders
- Inadequate market information

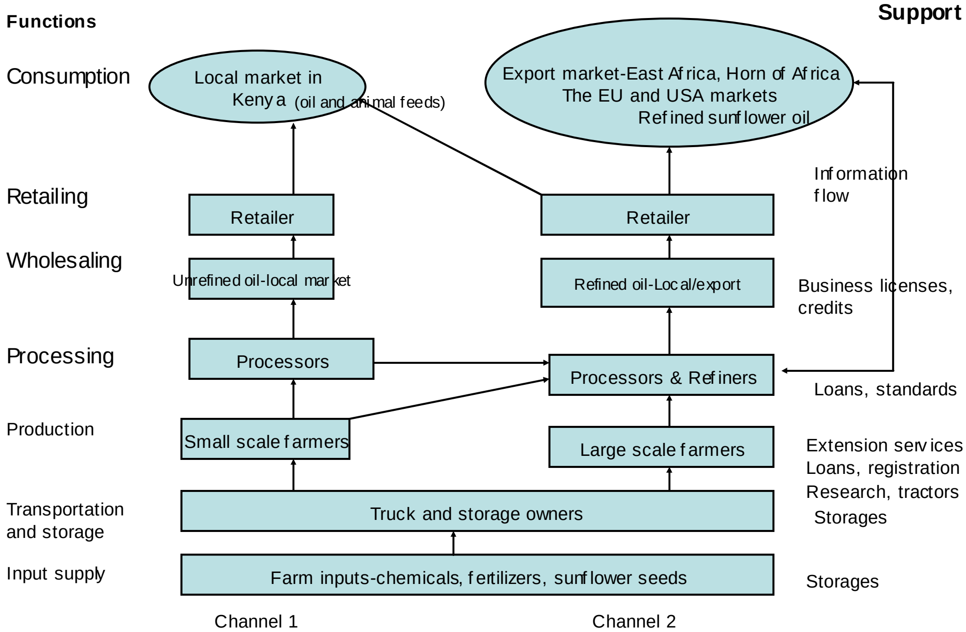
6.2 Opportunities: (Tanzania and Kenya)

- More room for processing of sunflower cooking oils and other products like – animal seeds.(using improved high technology)
- Investment in plantation of sunflower
- Packaging
- Production of inputs to be used by farmers, processors and refiners.
- Refining of crude sunflower oil.
- There is export potential- by sunflower grown in Tanzania
- Supply of seeds of high value improved varieties

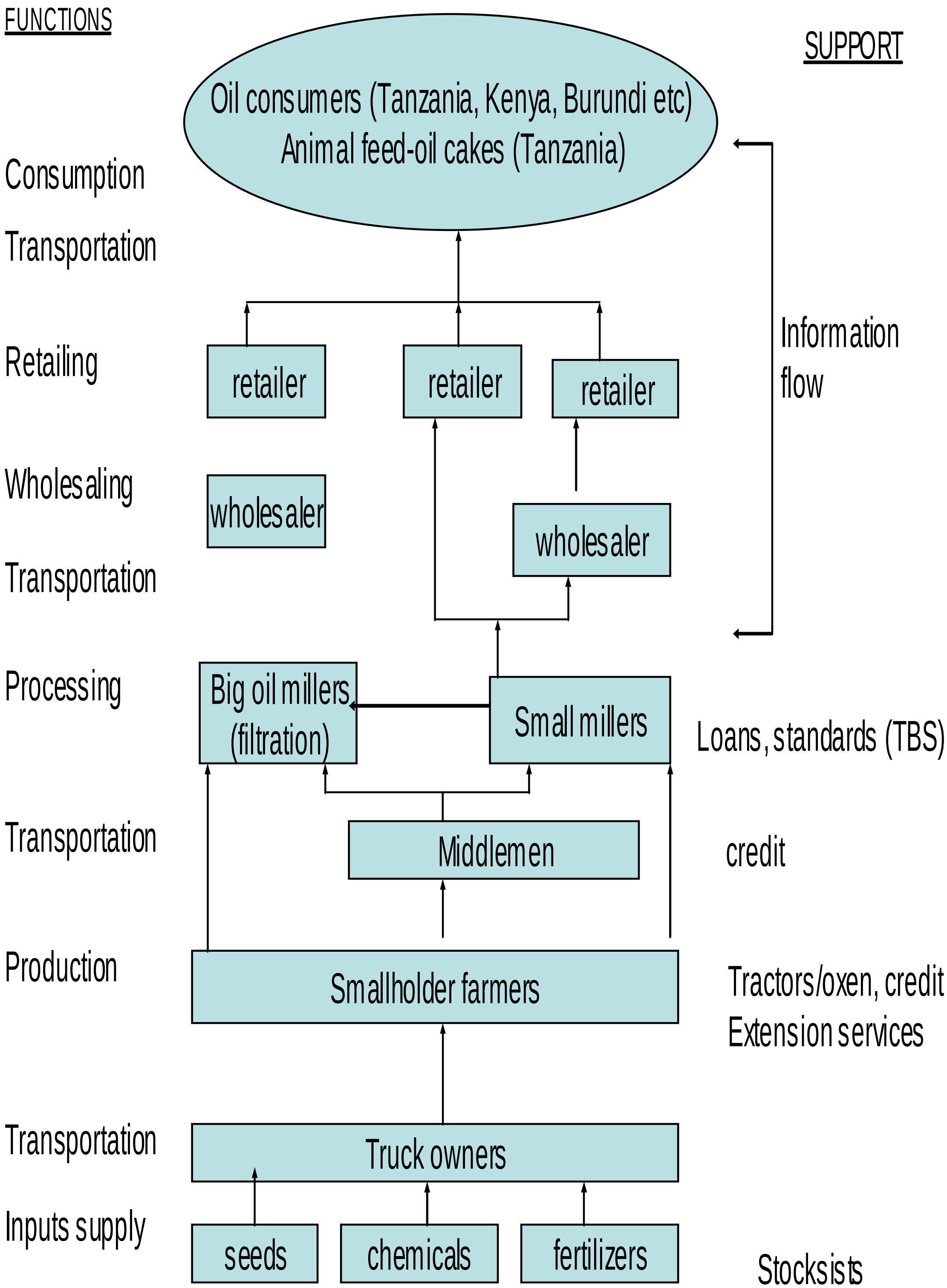
6.0 SUNFLOWER SUBSECTOR-MAPPING (KENYA AND TANZANIA)

6.1

Sunflower sub sector mapping-Kenya



6.2 SUNFLOWER SUBSECTOR – MAPPING - Tanzania)



Channel 1 Channel 2

7.0 ACTORS, ACTIVITIES IN THE SUNFLOWER SUB-SECTOR (Value Chain) Tanzania

	ACTOR NAME	LOCATION	ACTIVITERS CATEGORY	PRODUCT
1	Pop Vriend (T) LTD	Morogoro	Improved sunflower seeds	Seeds (input)
2	Farmers	All over Tanzania	Production of sunflower seeds	Sunflower seeds
3	IVORI	Iringa	- processing	Filtrated dibble oil
	Mnarani oil mill	Iringa	- processing	- crude oil
	Ivagwa oil mill	Iringa	- processing	- crude oil
	Makorongoni oil mill-	Iringa	- processing	- crude oil
	Musa Moshi farm And oil farm	Moshi	- marketing & processing	- sunflower oil - crude oil
	George farm	Morogoro	- production - processing - marketing	- sunflower seeds for oil - crude oil
4	-ASSAS transporters	Iringa	- Loading /Unloading	-Sunflower seeds /crude oil
	-Shubira transporters	Morogoro	- loading Unloading	Sunflower seed / Crude oil
	- Rahma transporters	Dar es Salaam	- Loading Unloading	Sunflower seed / crude oil
5	Ministry-Agriculture Ministry -trade/industry	Dar es Salaam	Policy, extension services	Capacity building
6	Other Supporter s SACCOS, BANKS, Research institutes source	All over country	- seed, Pesticides - financing - development of new seeds	Capacity building
7	Murzah Oil Mills	Dar es Salaam	Processing/marketing	Filtrated edible oil

Profit margins along the sunflower value chains in Tanzania and Kenya

(a) Sunflower value chain map-Tanzania (Singida Region)

Category of transaction:	Value US $/acre	Value added US $/acre
Supply of inputs and production		
1. Sunflower seeds	8.3	
2.Fertilizer	83.3	
3. Chemicals	8.3	
4.Transport	70	
5.Labour	80	
6.Ploughing	58.3	
7.Packaging sunflower seeds	48	
Total cost of inputs & production	356.2	
Farm gate price	**670**	**313.8**
Transport, processing & handling		
1. Transportation	80	
2. Buying from smallholder farmer	670	
3. Processing and packaging	88	
4. Handling & Warehousing	50	
Total cost transport, processing & handling	888	
Price to the Tanzanian Market	**1000**	**112**

(b) Sunflower value chain map-Kenya (Nyanza province)

Category of transaction:	Value US $/acre	Value added US $/acre
Supply of inputs and production		
1. Sunflower seeds	12	
2.Fertilizer	94	
3. Chemicals	50	
4.Transport	68	
5.Labour	65	
6.Ploughing	35	
7.Packaging sunflower seeds	100	
Total cost of inputs & production	424	
Farm gate price	**807**	**383**
Transport, processing & handling		
1. Transportation	352	
2. Buying from smallholder farmer	406	
3. Processing and packaging	120	
4. Handling & Warehousing	80	
Total cost transport, processing & handling	958	
Price to the Kenyan Market	**1200**	**242**

Source: Smallholder farmers and agricultural extension officers in Tanzania and Kenya, and researcher's computation

The sunflower smallholder farmers in Tanzania and Kenya are subjected to higher production costs that are caused by fluctuations of inputs and labor costs in the two countries markets. The cost of petroleum products in the World market has been skyrocketing for the last two to three years and this has been causing prices of inputs and services like ploughing to go up.

The state of roads in rural areas of Kenya and Tanzania are pathetic and this has contributed to the rising costs of production. However, the above margins are expressed from findings from Singida and Nyanza where this year's costs and farm gate prices have been realized. These costs will keep changing based on the external environment changes.

The sub sector happens to be very profitable (value added per acre) both to smallholder farmers in Kenya (at $383) and Tanzania ($318). The value additions after farm gate happen to be attractive as well at $112 for Singida smallholder farmers and $242 for smallholder farmers in Nyanza Province. The value addition in Kenya happens to outperform that in Tanzania. This is because of the competitive advantages Kenya has against Tanzania. Part of the sunflower oil in Kenya do find its way to European and USA markets and again, the stronger economy of Kenya has an opportunity to add more value than Tanzanian economy does.

8.0 VALUE CHAIN DEVELOPMENT

Many products can be developed when processing of sunflower is considered in the value adding and diversification chains. Several application of sunflower may include:

- ✓ Use in making paints, vanishes and plastics
- ✓ Use as pesticide carried in the production of agrochemicals
- ✓ Use in the manufacturing of cosmetics and soaps
- ✓ Use in the development of Bio-diesel

9.0 CONCLUSION

In Tanzania, according to a recent study by Agriculture Research Institute at Ilonga in Kilosa (2007), the production cost of sunflower for one acre is US$ 317 and one acre can produce up to 16 bags of sunflower seeds weighing between 60 kg to 70 kg.

The revenue from the sale of oil alone, those bags from one acre can earn a farmer around US$ 670 of oil and the sale of oil cake for animal feed can earn him US$ 60 making a total of US$ 720 per acre leaving a profit margin of US$ 403 per acre.

The value chain development opportunities for the sub sector will open up extra market for the sunflower which in turn will stimulate increased production and improved priced for smallholder farmers in various regions of Tanzania.