

SATNET

SUSTAINABLE AGRICULTURE TRAINERS' NETWORK



A REPORT ON VANILLA COST BENEFIT ANALYSIS



...aiming at establishing the profitability of vanilla growing in the Rwenzori region, and helping farmers in the five districts of the Rwenzori region to make informed enterprise selection decisions.

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LIST OF ACRONYMS

AAMP	Area based Agricultural Modernization Programme
AMA	Abanya – Rwenzori Mountaineering Association
BELSCARD	Bukuku Extension Link in Sustainable Commercial Agriculture for Rural Development
CBOs	Community Based Organizations
CSOs	Civil Society Organizations
DDT	Dichloro-Diphenyl-Trichloroethane
EPR	Export Policy Review
EU	European Union
GEDA	Gender & Development Association
KSIIP	Kasese Small holder Income and Investment programme
MAAIF	Ministry of Agriculture Animal Industry and Fisheries
MFIs	Micro Finance Institutions
MFPED,	Ministry of Finance Planning and Economic Development
MOs	Member Organizations
MTs	Metric Tones
NAADS,	National Agriculture Advisory Services
NGOs	Non Governmental Organizations
NORRACOL	North Rwenzori Rural Community Agriculture and Conservation Link
NTAE	Non Traditional Agriculture Exports
SATNET	Sustainable Agriculture Trainers Network
SSP	Small Scale Producer
UEPB,	Uganda Export Promotions Board
UNCTAD	United Nations Conference on Trade and Development
WTO	World Trade Organization

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Executive Summary

Vanilla is one of the NTAE commodities in Uganda. It was introduced in Uganda in the 1950s, but it stabilized and was commercialized in the late 1990s. In 1996, annual exports of cured beans were less than five metric tons. Since then, production and exports had progressively increased, and in 2005 the country exported more than 185 metric tons of cured beans. During this period, vanilla growing spread to many parts of the country. In the Rwenzori region, it began in Bundibugyo, and then spread to Kasese and other districts in the region at a very fast rate. However, in 2004/05 vanilla prices sharply reduced. The sharp decline in the prices was due to Madagascar regaining its normal export volume after recovering from the effects of 2001 cyclone that significantly affected the vanilla gardens. The price fall became a great disincentive to farmers as most of them had entered the enterprise with very high price expectations. This resulted in some cases, dissolution of vanilla associations that had been formed, and abandonment of the plantations. Since then, vanilla prices have taken a downward trend to the current price of 2000shs/kg.

SATNET a network of farmer organizations has been at the fore front of promoting vanilla growing among other profitable enterprises in the Rwenzori Region through training her member organizations in management practices and development of training manuals which are still available in the Network's resource room. However, since 2006, most MOs that were involved in the enterprise have continually expressed their dissatisfaction, claiming that vanilla is no longer a profitable venture. Against this back ground, SATNET deemed it appropriate to undertake an analysis of the profitability of vanilla enterprise in the region. The analysis was carried out with the use of questionnaire for farmers and interview guide for buyers; who in most cases happened to be the processors/ exporters. Data collected was entered and analyzed using SPSS for windows under frequencies and percentages for descriptive data and making calculations to draw inference from the numeric data was done in excel.

The results of this study indicate that vanilla is still a profitable enterprise in the growing areas of Rwenzori Region regardless of the current "low" price. This is mainly attributed to the fact that vanilla is intercropped with other profitable crops such as coffee, bananas , cocoa among others, which makes it labour cost effective. At the current price of 2000 Ushs/kg, even a very small scale farmer breaks even in forth year of establishment and a medium/ large scale farmer enjoys the economies of scale. When well managed, vanilla can be a well paying enterprise for a small holder farmer; one can earn shs 5.4 million a year from one acre of vanilla vines with profitability rate of 31.2%.

This report thus recommends that farmers in the Rwenzori region harness the competitive advantage they have in vanilla production due to favourable climate, fertile black loamy soils rich in organic matter, to be the lead producers of vanilla at national level. This can be attained through organized farmer groups and associations. Emphasis should be put on strengthening farmer associations and cooperatives and vertical cooperation as well (farmers connected to buyers and processors).Also to note is that, Tropical cyclone Ivan made landfall in North Eastern Madagascar on 17th February 2008. The Category 4 hurricane did substantial damage but as yet the impact on any vanilla growing areas is unknown. (Madagascar is the world leading producer of vanilla).

CHAPTER ONE

1.1 Back ground

The Agricultural sector contributes about 80% of Uganda's export earnings and 43% of the GDP. About 80% of the total labour force is employed in Agriculture (MAAIF and MFPED, 2000). This implies that real growth in the agricultural sector is crucial for poverty reduction and food security, which is in line with the objectives of the Government's Poverty Eradication Action Plan (PEAP). The government has also adopted a positive strategy on export of Non Traditional Agricultural Exports (NTAE) as a means of export diversification (EPR, 2003). Non Traditional Exports have continued to increase their share to total exports earnings with overall share rising to 70.1% in 2006 from 60.9% in 2002. "The drastic increase in share is attributed to frantic effort by the government to boost non-traditional exports especially in cocoa beans, maize, vanilla, roses and cut flowers, and fish and fish products." (Daily Monitor, Business Power February 12, 2008).

The Vanilla commodity

Vanilla is a tropical vine that belongs to the orchid family, one of the oldest and largest groups of flowering plants in the world, containing more than twenty-five thousand species. Of all the orchids, vanilla is the only one that produces an edible, agriculturally valuable crop. It is also one of the most labor-intensive agricultural products in the world with flowers that must be hand pollinated and beans hand picked.

Uganda's vanilla industry is young compared to other growing regions. While vanilla production in Uganda started in the 1950's, it did not become very established until the 1990's. In 1996, annual exports of cured beans were less than five metric tons. Since then, production and exports progressively increased, and in 2005 the country exported more than 185 metric tons of cured beans.

In 2001, the world prices of vanilla increased significantly due to a hurricane that destroyed vanilla gardens in Madagascar resulting in low supply in the world and poor quality because traders were buying any quality so as to meet contracts made previously. In 2003, the price of cured vanilla went up as high as \$550 per kilo of standard vanilla according to the Market News in the Public Ledger. The vanilla trade injected an economic boost to many rural villages where farmers typically earned an average of \$2 dollars a day (Rodella, 2004). However, in 2004, Madagascar regained its position as the world's largest producer and this led to a sharp decline in domestic prices. Madagascar's production in 2005 was estimated to be around 1700 MTs, up from 1400 MTs in 2004, and a significant increase from previous years. Its "bourbon" vanilla was the variety most preferred by importers and usually received a premium over other suppliers (excluding French Polynesia) and sets the industry standard.

Rainy and tropical, Ugandan vanilla-growing regions have two dry seasons per year, which allows for two vanilla harvests per year, unlike Madagascar which has only one vanilla season. Uganda's vanilla-producing region includes the districts of Bundibugyo, Kayunga, Kesese, Kiboga, Masaka, and Mukono. Uganda produces both extract grade and black gourmet beans. The specie grown is *Vanilla Planifolia* and the regional flavor profile for Ugandan vanilla is subtle, sweet and balsamic.

Main uses of Vanilla: Vanilla is widely used in the confectionery and perfumery industries. It is used for flavoring chocolate, ice cream, soft drinks, condiments, and alcoholic drinks and to a less extent medicines. It is added to perfumes and other cosmetic products to give them fragrance. Vanilla is also important in diffusing the foul smell of rubber during tyre making.

Classifications are based on bean length, aroma, color, moisture content, consistency and freedom from blemishes, insect infestations and mildew. Beans are categorized as whole, split or cuts. Top class beans are dark and oily, with a good strong flavor and aroma and no defects. EU certified laboratories like Chemiphar Laboratories Ltd has equipment to analyze quality. These analyses include length (should be 12-20 cm), insect infestation (should be zero), moisture content (should be 20-28 per cent), vanillin (should be 1.5 to 2.5 per cent but this is usually specified by the buyer, you may find beans of vanillin less than 1 % being bought) and color (as per buyer specification according to the international color chart). It is advisable to all vanilla exporters to send samples of vanilla for analysis before a shipment is done. Bourbon vanilla is classified by international standards basing on Madagascar into five main grades of whole and split beans -- 1st, 2nd, 3rd, 4th, and an additional grade for all other beans (UEPB, 2005).see table 1 below.

Table 1: Classes for Vanilla (referred to as the premium standards in the industry)

1 st	Good flavor, length greater than 14 cm, supple, full, no spots, no scratches, tannish brown uniform color, moisture content less than 25 percent
2 nd	Good flavor, length greater than 14 cm, supple, some spots and scratches, moisture content 25-28 percent
3 rd	Good flavor, length greater than 14 cm, supple, some dry spots and scratches, red blemishes, moisture content more than 30 percent
4 th	Broken or cut, length less than 14 cm, red blemishes, moisture content more than 30 percent

* Source: UEPB Product Profile on Vanilla, No. 9, 2005

1.2 The problem

Vanilla growing in the Rwenzori region began in Bundibugyo District in the late 1990s, followed by Kasese district with all the rest of districts in the region following suit. Vanilla became so popular in the region in 2002/03 when the prices were ranging between 35,000-50,000shs/kg. The vanilla trade injected an economic boost to many rural villages where farmers typically earned an average of \$2 dollars a day .SATNET enhanced the capacity of farmers' groups and CBOs involved in vanilla production to improve on productivity, engage in collective marketing through training and development of appropriate training manuals on vanilla production, pollination, and general management practices.

However, in 2004/05 prices took a downward trend (this was majorly due to the fact that Madagascar regained its position as the world's largest producer after recovering from 2001 cyclone) and have since been declining to the current price of 2000shs/kg. Since 2006, most MOs involved in vanilla growing have continued to express their disappointments in the industry claiming that they are not realizing profits from the enterprise. Some farmers abandoned their vanilla plantations while others cut them down. Yet, According to Mr. Ismail Tamale, the former treasurer of Uganda National Vanilla Association (UNVA), Ugandan vanilla can favorably compete with Madagascar's, the world's biggest producer, because its organic, has a better flavor and unlike Madagascar which has one harvesting season a year, Uganda has two. (Uganda Communication Commission UCC, 2006). Large portions of Rwenzori region are considered to have a competitive advantage in production of vanilla because of the highly fertile soils, favorable climate and availability of manual labour.

It's against this back ground that SATNET deemed it appropriate to carry out a comprehensive cost- benefit analysis¹ aiming at establishing the profitability of vanilla production in the region. This analysis among others examines the costs involved in vanilla production and the incomes that accrue from its sale at farmer level (gross margins). This is expected to help the farmers in the five districts of the Rwenzori Region to make informed, appropriate enterprise selection decisions.

¹Cost Benefit Analysis is a powerful, widely used and relatively easy tool for deciding whether to make a change. Cost benefit analysis can be carried out using only financial costs and financial benefits. However, for this case, tangible items were included within the analysis in order to capture information beyond the figures. As a value for these must be estimated, this inevitably brought in the element of subjectivity into the process.

CHAPTER TWO

2.0 Methodology

This chapter gives details of sampling method, sources and types of data used in the analysis, how data was collected, processed and analyzed;

2.1 Study Design

This was an observational study that involved focus on management procedures practiced, costs incurred and benefits that accrued from vanilla growing through household surveys and direct interviews with selected farmer respondents.

Although all the five districts in Rwenzori Region grow vanilla, owing to the budgetary and time constraints, it was not practicable to cover all of them in this survey. This thus necessitated sampling- Purposive sampling was adopted and a sample of Member Organizations (MOs) was selected from three districts namely; Kasese, Kabarole and Bundibugyo. The above districts were selected because they are among the highest producers of vanilla in the country. Based on information from MO leaders; at least two farmers were selected per MO for interview and observation of their plantations.

In order to ensure a wide-ranging and enriching analysis of the vanilla commodity, other players in the vanilla value chain², namely; buyers and processors who at the same time are the exporters were purposively selected and visited. Other key stakeholders such as Government Programme implementers like NAADS, AAMP, and District Production Departments were also consulted.

2.2 Study Areas

The study districts were Kasese, Kabarole and Bundibugyo.

Table 2: Number of farmer respondents interviewed; by District and MO

District	Sub County	MO	No. of respondents	District summary
Kabarole	Buheesi	Kiboota Widows and Widowers Association	2	4
	Bukuku	BELSCARD	2	
Kasese	Munkunyu	MUTIBA	Group of five farmers from Mukunyu vanilla farmers association. and other 2 individual respondents	41
	Maliba	GEDA	3 Farmers	
	Kisinga	Green Home	2 farmers	
	Kyondo	KIIMA Foods	18 group members from Kyondo Vanilla Association and 1 respondent outside the	

² A value chain consists of steps a product follows from primary producer to final consumer with some economic value being added at each step.

			group	
Bundibugyo	Harughale	NORRACOL	2	5 farmers. These farmers also belonged to Rwenzori Vanilla Farmers Association
		AMA	3	

2.3 Types and sources of information

This report is based mostly on primary and to a less extent secondary information. The analysis was basically structured around the vanilla value chain. The information was obtained from many stakeholders that included 50 farmers, 5 buyers and 4 processors /exporters. Whereas farmer interviews were conducted in three districts in the Rwenzori Region, traders were drawn from even outside the region as seen in the table below. Primary data were gathered through field surveys of farmers, buyers and processors / exporters of vanilla. Secondary data was obtained from UEPB, and other internet sources.

Since a lot of publications on vanilla production and management practices were already produced and literature available in SATNET resource room, more concentration was focused on capturing costs and incomes, in regard to vanilla production, opportunities and constraining factors. To capture these properly, data collection tools for farmers and processors/ exporters were designed and are herewith appended (appendix 1).

Table 3 List of buyers, processors / exporters that were interviewed during the survey

Person Contacted	Organization & Address
1. Israel Matte and Andrew Sasu	Mubuku Vanilla & Moringa Farmers Association, Kasese
2. Lulu Sturdy	Ndali Lodge, Kabarole
3. Aliganyira Wilfred	ESCO (U) Ltd, Bundibugyo
4. Aga Sekalala	UVAN Limited, Kampala
5. Ismail Tamale	Taimex Limited, Kampala

Other Key Stakeholders consulted

To capture relatable issues on vanilla industry, and to compliment field surveys, the under listed key stakeholders were visited.

1. AAMP Coordinator- Kasese District
2. NAADS Coordinator – Kabarole
3. District Production Coordinator – Bundibugyo District
4. Uganda Export Promotions Board- Kampala

Secondary data was mainly time series for the period of 2004 -2007. These included; Export Trends and prices.

2.4 Data analysis

Data were coded, analyzed using SPSS computer software, qualitative data was analyzed using frequencies and percentages, while quantitative data was subjected to descriptive statistical analysis and parameters such as means and ranges were used to interpret the data and was further analyzed using excel spreadsheets.

2.5 Limitations of the study

Majority of farmer respondents did not keep farm records and thus were unable to give accurate figures as regards, costs, yields, sales, and acreages.

Recent production statistics were not available in the districts; the most recent were 2005 records.

Some processors were not willing to reveal information especially regarding their buying and export prices. This necessitated the researcher to rely mostly on secondary data and online sources to get that particular information.

Due to financial constraints, stakeholders' feed back/ validation workshop to enrich this report was not possible.

In spite of the above limitations, appropriate measures were taken to ensure that their effect were minimized and did not in any way compromise the quality of this report.

CHAPTER THREE

3.0 Presentation and discussion of the findings

The general analysis was structured around the different levels of the value chain namely; Production, Post harvest handling, processing, marketing and their cost implications. The findings are discussed per district for specificity and a general overview is also given.

Production analysis entailed;

<ul style="list-style-type: none">-Acreage-Cultivation requirements,-Multiplication-Land preparation,-Planting-Maintenance-Pests and disease control-Climatic effects-Harvesting and yields <p>Costs incurred in the whole production process to the point of sale were also captured</p>

Marketing;

<ul style="list-style-type: none">-Yields-Selling price per kg-Terms under which the farmers dealt with the buyers-The buyer's responses were also captured
--

3.1 KASESE DISTRICT

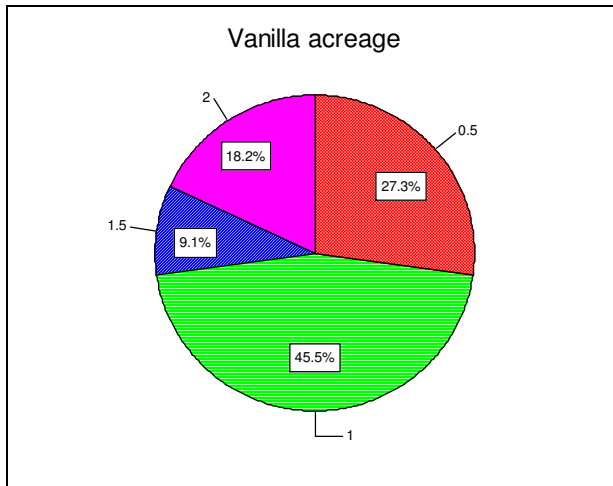
The sub counties that were visited in Kasese include; Munkunyu, Kisinga, Maliba and Kyondo. All the farmer respondents have been growing vanilla for at least five years and selling it in form of fresh beans to the buyers. Only 54.5% of the respondents kept farm records.

Key Findings

Data is presented in form of tables and charts, where data could not be quantified it's explained

3.1.1 Vanilla Acreage

As shown in the pie chart below, average land allocation to vanilla was 1.25 acres. It was noted that general average land holding per household was ranging between 0.5 -3 acres, and vanilla being intercropped with other crops like coffee and bananas, occupied a large portion the total land owned per household.



27.3% own 0.5 acres of vanilla, 45.5% own one acre, 18.2% own two acres and 9.1% own 1.5 acres of vanilla

3.1.2 Cultivation requirements

The farmer respondents identified the following as their cultivation requirements (respective costs are reflected under production costs):

- Land
- Support trees (mostly used is *Jatropha circus* locally known as Ekisogasoga & shade trees
- Vanilla Vines
- Mulch
- Compost Manure
- Labour
- Fencing Materials
- Tillage tools like hoes, pangas, spade and wheel barrow.

The management practices applied by most farmer respondents to maintain their vanilla Plantations included: Mulching, compost making and use, pruning, weeding, digging trenches and ridges for water conservation in the soil

When asked whether they had experienced vanilla pests and diseases, 64% said yes, 18% had not experienced any, and 18 % were not sure. However, even those who reported to have had registered pests and diseases, said their effect was not economically dangerous. The major registered pests and diseases included; hens scratching the roots leading to the drying of the whole plant, rats, caterpillars, small black ants, and flying insects (these attacked the flowers leading to their fall of and thus low yields). Diseases; farmers were not able to identify the diseases but described the observed symptoms as detailed; jatropha drying, yellowing of vanilla leaves, wilting of vines.

Effect of climatic changes; Farmers had observed delayed flowering with extended rainy season, yet persistent dry spells led to wilting and drying of beans, shorter and small beans are in turn produced. They further noted that they were able to minimize the effects of dry season through intensive mulching.

3.1.3 Production Costs

In order to capture the prevailing production costs incurred by farmers in Kasese District, respondents were asked to estimate the costs of the activities they undertake from the point of planting to the point of sale. The challenge was that respondents did not have monetary value for the family labour and the researcher had to press hard for the estimate figures. Table 3 below indicates their general responses. Since all the farmer respondents had been producing vanilla for more than 5 years, they no longer had to incur the costs of establishing a vanilla plantation though it will be looked at in this analysis.

Average costs of farmer respondents

Variables/ parameters analyzed	No. of respondents	Minimum	Maximum	Mean Ush
Vines planted per acre.	11	100.00	1000.00	(404)
Cost of initial planting materials.	11	10000	1000000	390,181
Cost of initial cultivation requirements.	10	20000.00	800000.00	220,150
Cost of initial land preparations	11	20000.00	300000.00	75,273
Cost of planting	10	20000.00	608000.00	148,800
Cost of pest and disease control measures	5	5000.00	30000.00	16,200
Cost of pollinating vanilla	9	30000.00	600000.00	140,556
Other costs apart from the ones mentioned above	7	4000.00	210000.00	70,571
Total mean cost				1,061,731

- Source: Survey in Kasese

Majority of the respondents planted between 2000 and 2002 and the above average cost depicts the cost during that time.

Cost of Establishing 100 Plants of Vanilla Ushs			
Item	No.	Unit Cost	value
Materials			
Vines (2m)	100	400	40,000
Support plant- Jatropha	100	200	20,000
Mulch plants- Various	1000	200	200,000
Compost Manure	1	80,000	80,000
Fencing – barbed wire(rolls)	2	35,000	70,000
Tillage tools- hoes, pangas, wheelbarrow	1	80,000	80,000
Depreciation (10%) of establishment			42,000
Miscellaneous	(10%)		53,200
Total start up costs			585,200

Labour (Person days-PD)	PD		
Land clearing & preparation	13	3000	39,000
Planting shade trees	5	2000	10,000
Planting vines	15	2000	30,000
Weeding(twice per year)	20	3000	60,000
Pruning (shade & vines)	30	3000	90,000
Looping	30	3000	90,000
Manuring	15	3000	75,000
Mulching	10	3000	30,000
Mounding	10	3000	30,000
Total Labour			454,000
Total 3 years Establishment cost			1,039,200

Assumptions

1. Three years to first commercial crop (Start up period 1-3 years)
2. Mulch from perennial or self seeding plants such as elephant grass
3. Land is already owned.
4. Shade trees such as banana plantation or coffee are already owned
5. All labour is hired, or family labour rated the same as hired labour
6. No use of inorganic pesticides and fertilizers

Operating Margins

Operating Margins per annum on 100 Mature Vanilla plants, Ushs

Gross Income	Average yield per plant		Value	Expenses
1st Year		kg		
Season 1	1.5kg	150	300,000	
Season 2	1kg	100	200,000	
Sub total income			500,000	
2nd Year				
Season 1	3kg	300	600,000	
Season 2	2kg	200	400,000	
Subtotal income			1,000,000	
3rd year				
Season 1	4kg	400	800,000	
Season 2	2.5 kg	250	500,000	
Sub total income			1,300,000	
Expanses (per year)				
Labour -pollinating				180,000
Labour- harvesting				100,000
Harvesting materials				10,000

Maintenance costs				135,000
Sub total expenses				425,000
Operating Margins				
<i>1st Year</i>				75,000
<i>2nd Year</i>				575,000
<i>3rd Year</i>				875,000
Assumptions				
<ul style="list-style-type: none"> • Season 1- major season, Season 2- Minor season • The current average price(2000/kg) prevails for at least 3 years • Well maintained vanilla plantation. 				
Notes				
<ul style="list-style-type: none"> • Operating Margin is an indication of how profitable an enterprise is after labour and other costs have been deducted. • In Uganda, vanilla has got two seasons, the major season is June/ July, and the minor season is December / January. 				

3.1.4 Marketing

Vanilla farmers in Kasese sell green beans through their farmer associations. The buyers announce the day of their visit and the farmers pool their vanilla in their various groups and put it at identified centres. These buyers include ESCO, KSIIP and Mubuku Vanilla and Moringa Farmers Association of which the latter also sells to Lulu Sturdy of Ndali Lodge. The current price is 2000 shs/kg, however a few farmers who had a contract with a fair trade buyer i.e. Lulu, sold at 9000shs/kg during the previous two seasons.

3.1.5 Opportunities for vanilla industry in the District

- Existing organized farmer groups
- Availability of buyers
- Strong civil society movement enhancing capacity building of farmers, collective marketing, and consolidated efforts in training, and technology transfer.
- Fertile soils suitable for vanilla production.

3.1.6 Identified constraints against Vanilla industry.

During the interview, farmer respondents identified the following as their constraints/ challenges.

- Limited land and competing uses.
- Drying of *Jatropha carcus*.
- Kasese suffers stretches of drought every year making vanilla production in some parts hard.
- Capital shortage and limited access to credit.
- Low price, un reliable and un consistent buyers

On the other hand buyers' complaint was that there were scattered quantities and poor infrastructure development such as very poor feeder roads.

3.1.7 Farmers' recommendations

- Reliable market with higher prices,
- Government, NGOs to give inputs, training & research services
- Easy access to soft loans
- Training in organic pest and disease control
- Access to timely and reliable market information.

General recommendations are given in chapter four.

Profitability

When asked whether they considered vanilla industry as a profitable enterprise, 80% of farmer respondents said it was profitable and only 20% considered it non profitable. Majority of the respondents who said it was profitable attributed it to the economies of scale one enjoys when large quantities are planted. Also farmers argued that there is currently no other crop that fetches the same price as vanilla. Given that money from vanilla is earned at once, it can be used for meaningful investment. On the other hand, those that considered it non profitable attributed it to low prices vs. labour intensiveness of vanilla especially pollination.

3.1.8 Identified strategic options.

- Rebuild the confidence of farmers in the enterprise.
- Other types of support trees could be used where *Jatropha* is drying, identified was bark tree. Good management practices like timely pruning of both the vine and support trees eliminate the wilting problems.
- Other enterprises that farmers could adopt include;
 - Piggery
 - Goat rearing
 - Wet coffee processing
 - Upland Rice.

The AAMP Coordinator in the district confirmed that they had undertaken the above enterprises, and that they were doing well.

3.2 KABAROLE DISTRICT

Unlike Kasese, fewer Member Organizations were growing vanilla, given the purposive sampling criteria used; fewer farmers were thus visited as indicated in table 2.

3.2.1 Acreage

The current average vanilla acreage of farmer respondents is 0.7 acres.

Majority of farmers visited confessed that they had never seen any vanilla buyer since they planted. Most of them planted vanilla plantations during 2003. Only 25% of the respondents kept farm records.

Because of the cold climate characteristic of Kabarole, vanilla takes exceptionally longer periods; four years before flowering. At the time of respondents' first harvest, prices had fallen from the expected 50,000shs per kg to less than 5000shs/kg. This discouraged farmers and most of them abandoned their vanilla associations and plantations. It was later discovered from the buyers' point of view, that farmers who abandoned associations could not attract buyers to come and pick small quantities of vanilla, and thus the reason why these farmers never had linkages with the buyers.

3.2.2 Opportunities

- Resident fair trade buyer/ processor/exporter- Lulu Sturdy.
- Kabarole District is naturally endowed with black fertile soils that favour vanilla growing.
- Presence of a vibrant CSO movement which can be tapped into for purposes of research, training, market linkages and technology transfer.
- Organizing farmer groups can be eased through the mobilization efforts undertaken by NAADS.

3.2.3 Constraints

Despite the fertile soils, vanilla growing faces the following constraints.

- Limited access to market.
- Negative attitude of farmers has led to cut down of significant portions of their vanilla plantation and a decline in price was a disincentive, farmers have a “psychological price” mentality. One farmer swore, “Even if prices increased to 10,000/kg I would not go back to vanilla farming.” He is now in brick laying.
- Farmers’ impatience led to dissolution of vanilla farmer groups.
- Cold temperatures characteristic of the district hinder early flowering and production of vanilla in season

The cost benefit was hard to compute since only one farmer had sold through an association in Kibiito. One may use the general analysis to compute their costs and benefits.

3.2.4 Other stakeholders

Other stakeholders interviewed in Kabarole, was NAADS Coordinator. Through this discussion, it was discovered that in Kabarole vanilla growing is concentrated in the sub counties of Bukuku, Ruteete, Kisomoro, Kicwamba, Kibiito, and Karambi .It was discovered that since sampling was based on SATNET MOs, it could not have been representative enough of the whole district. This is because few MOs from Kabarole grow vanilla, it was not noted that there were still cohesive farmer groups that were accessing vanilla buyers especially in the sub county of Rutete. The NAADS coordinator expressed that the groups which remained serious in vanilla growing have found it still profitable, though the popularity of vanilla in the communities diminished.

3.2.5 Strategic options/ Alternative enterprises

- Rebuilding the confidence of farmers, and promotion of re-formation of cohesive farmer groups.
- Upland rice
- Poultry –cross breeds
- Apple growing
- Mango growing

3.3 BUNDIBUGYO DISTRICT

In Bundibugyo, only four farmers were interviewed. The average acreage under vanilla was 1.5 acres. Vanilla was intercropped with mainly coffee, cocoa and bananas. Only one of farmer respondent keeps farm records.

3.3.1 Marketing

Bundibugyo has got an advantage of resident buyers and processors of vanilla like ESCO which owns an organic certificate; vanilla was currently being bought at 2000 Ushs/kg for conventional and 3000 Ushs/kg organic. Farmers do not incur transport costs as the buyers collect vanilla from farmers through their associations. Most of the farmer respondents got free initial planting materials from Rwenzori Vanilla Farmers association directed by Mr. Kajumba.

3.3.2 Opportunities

- Fertile soils and favourable climate. The district is highly suitable for vanilla growing and has got a competitive advantage.
- Existing shade trees such as cocoa
- Support to farmers through the private sector, like ESCO, Rwenzori vanilla association, and existence of extension workers like AAMP.
- Production zoning has been done by the production department and farmers can make guided enterprise selection.
- Vibrant CSOs in the district like AMA.

3.3.3 Challenges

- Land shortage, 80% of land is forest reserves and water bodies.
- High cost of hired labour
- Unfavorable government policies like DDT spraying which threatens organic markets.
- Farmers psychological perception of high vanilla prices hinders them from proper management of their vanilla gardens

3.3.4 Strategic options/alternative crops

- Sensitize farmers on the profitability of vanilla to rebuild their confidence in the enterprise.
- Carry out campaigns and dialogues with government to combat malaria using alternatives to DDT.
- Organic cocoa and coffee

Cost of production was found to be more or less the same as that in Kasese, and since prices were the same in both districts, the operating margins are more or less the same.

On profitability, 50% of farmer respondents said that it was profitable to engage in vanilla production while the other 50% said that it was not profitable. Those who considered vanilla unprofitable further claimed that cocoa is more profitable with its current price ranging from 1200-1800 Ushs/kg and that it is not as labour intensive as vanilla.

3.4 SUMMARY OF THE FINDINGS

This section gives a summary of the findings in the entire three districts of study and a generalization of the Rwenzori region is drawn.

3.4.1 General Observations

This will cover the general observations at different levels of the value chain in the vanilla industry.

Farmers

- All the farmer respondents sold vanilla in form of fresh beans.

- Farmers' high expectation of exceptionally high prices for vanilla was a major disincentive for the majority of them who felt it was not profitable to grow vanilla.
- Majority of farmers do not keep farm records, and there is minimal use of hired labour. For this case a thorough analysis of cost benefit is shown below which puts in consideration family labour and the operating margins/ returns to the family labour.
- There were no new entrants in the industry among the farmer respondents, all the farmer respondents had been growing vanilla for at least five years, and majority of them had either reduced the acreage, or not expanded at all.
- Majority of the farmers were conversant with the recommended management practices.
- There were no identified economically dangerous pests and diseases; most of the wilting of support trees was observed in poorly managed plantations.
- No farmer respondent had evaluated the profitability of vanilla growing; most of them did not value family labour.

3.4.2 General Farmers' Challenges

- Low price and unreliable markets
- Labour intensiveness of vanilla especially pollination activity
- Weather changes like drought reduces the quality and yield
- Lack of timely market trends information

3.4.3 General Farmers' recommendation

- Reliable fair trade/ organic market with higher prices
- Provision of soft loans by the government and favourable terms by financial institutions.
- Training in organic control of pests and diseases

3.4.4 Buyers and processors/exporters

- Majority of the buyer respondents did not own fair trade/ organic certificates
- Majority of the buyers interviewed were at the same time exporters and they exported vanilla in form of cured beans to USA and Europe, prices are reflected in the price trend analysis below.
- Most buyers said that even at the price of 2000/kg, vanilla was still profitable for farmers and that as long as the processor earns a margin of 1/10th of the buying price, profit of 12% as the break even point.
- When asked of a profitable "locked" potential of vanilla, majority of the processors mentioned that a part from export, vanilla could be used on a very small scale domestically in making cakes and vanilla juice extract could be used to flavour juices, but this would not be a domestic commercial use.

3.4.5 Major challenges faced by the buyers/exporters

- Farmers' unreliability, impatience, and lack of respect to contracts.
- Farmers are not organized and give up so easily making it costly to mobilize and pool substantial quantities.
- Unreliable Export Markets and the complexity of acquiring organic and fair trade certificates/ contracts.
- Madagascar's competitive advantage as the historical producer has attained loyalty of overseas (USA, Europe) customers, with its bourbon type of vanilla.

3.4.6 Exporters Recommendations to the farmers

- CSOs, extension workers to organize and sensitize farmers on the forces of demand and supply so that they don't have to always abandon economically viable enterprises because of price fluctuations, but instead adopt diversification as a strategy to mitigate price fluctuations.
- Collective marketing as a strategy to mitigate the effect of SSP model of production characteristic of Uganda.
- Farmer organizations and CSOs to have collaboration linkages/ partnerships with the buyers to avoid farmer exploitation in the value chain and for farmers to be able to access reliable markets. This will ensure quality products produced by farmers.

3.4.7 General Profitability Analysis per acre of vanilla vines.

Materials	Quantity	Unit cost	Value Ushs	
Vanilla vines(2m)	600	300	180,000	
Support trees	600	200	120,000	
Mulch (bundles)	1000	300	300,000	
Tools- hoes, pangas.			74,000	
Manure (compost)			160,000	
Fencing- (barbed wire)	4 rolls	35,000	140,000	
Depreciation- 10%			97,400	
Miscellaneous- 10%			97,400	
Total start up costs			1,168,800	
Labour	(Person days)			
Land clearing	20	2000	40,000	
1 st ploughing	20	2500	50,000	
2 nd ploughing	10	2000	20,000	
Manuring	15	2000	30,000	
Planting support trees	20	2000	40,000	
Planting vines	25	2000	50,000	
Mulching- twice a year	10	2000	20,000	
Pruning shade/support trees	5	2000	10,000	
Pruning vines	20	2000	40,000	
Looping vines	40	2000	80,000	
Mounding	35	2000	70,000	
Weeding 3 times a year	90	2000	180,000	
Pollination	50	2500	125,000	
Harvesting	50	2000	100,000	
Notes				
<ul style="list-style-type: none"> • One acre of land can accommodate 704 plants with 8ft x8ft spacing and could as well be inter- cropped with banana and coffee at a spacing of 10ft x10ft to accommodate about 600 plants. • After the initial cost of buying vines, support trees and the tools, other costs are labour. 				

	Total expenditure	Yield (kg)	Income	Profits
1 st Year	1,718,800	0	NIL	NIL
2 nd Year	430,000	0	NIL	NIL
3 rd Year	655,000	900	1,800,000	(1,003,800)
4 th Year	655,000	1800	3,600,000	141,200
5 th Year	655,000	2700	5,400,000	1,286,200
6 th Year	655,000	2700	5,400,000	631,200

Pay back period = 4 years.

In the fourth year profit= 141,200/=

Profit in the fifth year,

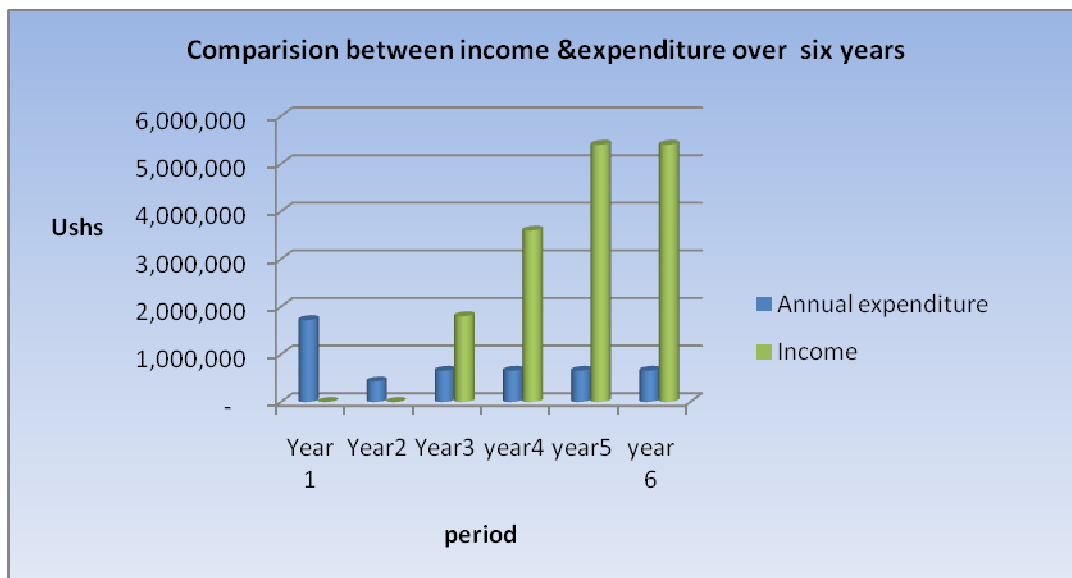
= Income - Total expenditure

= 5,400,000- 4,113,800= 1,286,200

Returns to investment by 5th year

$$= \frac{\text{Profit of the year}}{\text{Total Expenditure}} \times 100 = \frac{1,286,200}{4,113,800} \times 100 = 31.27\%$$

Each shilling invested in vanilla enterprise earns an extra 31.3 cts in the fifth year, put 1 sh. Get 1.31.



After establishment costs, annual expenditure gets constant from the 3rd year; income increases due to the increasing yields and stabilizes in the sixth year as the law of diminishing returns sets in. The income in the fifth year (5,400,000 shs) is thus the annual income one gets from one acre of mature vanilla vines.

Annual Operating Margins

Assumptions:

- Start up costs are spread over three years under consideration,
= $2148800/3 = 716,266 \simeq 716,300$

1st Year of harvest (3rd Year)

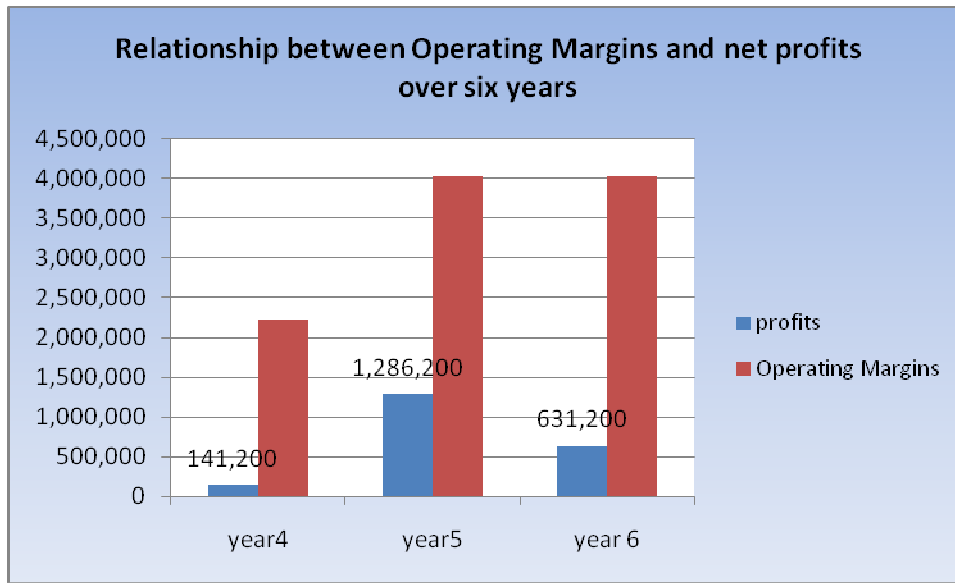
$$\text{Benefits-costs} = 1,800,000 - 1,371,300 = 755,400$$

2nd Year (4th Year)

$$= 3,600,000 - 1,371,300 = 2,228,700$$

3rd Year (5th Year)

$$= 5,400,000 - 1,371,300 = 4,028,700$$



Operating margins increase with years because of constant operating costs and increasing yields, till law of diminishing returns (non increasing yields) sets in. On the other hand net profits (income of the year- total expenditure of cumulative years) increase with increasing operating margins and reduce with constant operating margins as shown in the graph above.

Significance of profitability

The significance level is 0.623; being greater than 0.05, the hypothesis that vanilla is not profitable is rejected.

3.4.7 Marketing

Global Market

Vanilla export price trends from 2004- to date.

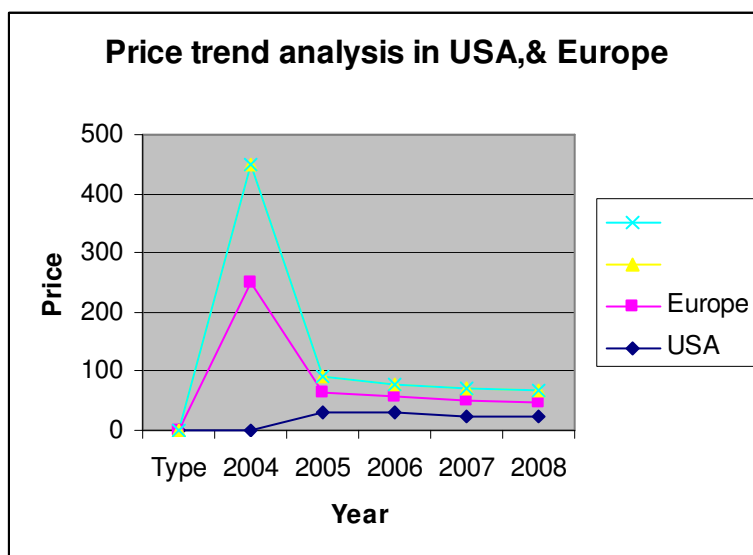
Madagascar³ has been the world's leading supplier of vanilla according to Market News Service/ UNCTAD.

Uganda's vanilla export destination is USA and Europe, below is the price trend analysis from 2004- to date.

Table 4 Vanilla Price trend Analysis in USA, and Europe-US\$/Kg

	Type	2004	2005	2006	2007	2008
USA	Bourbon		30	30.00	25.00	23.00
Europe	Bourbon	250.00	35.00	28.00	25.00	23.00
	Non Bourbon	200.00	25.00	20.00	20.00	20.00

*Source UNCTAD/WTO Market News Service, Spices



3.4.8 Uganda Vanilla Export Performance

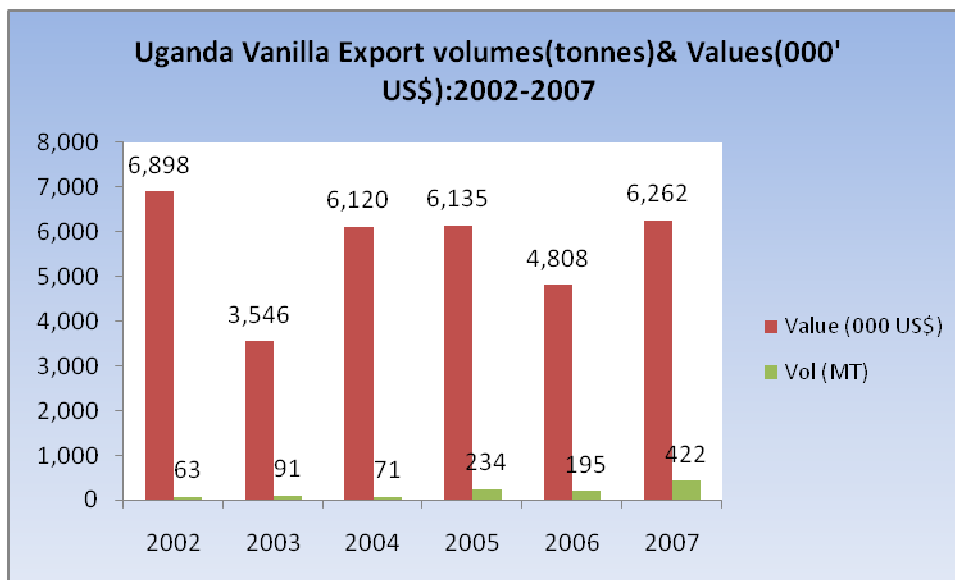
Vanilla export values recovered from a fall in 2006 by 30%, from US\$ 4.8 million in 2006 to US\$ 6.2 million in 2007. Volumes leapt 116% from 195 MT in 2006 to 422 MT in 2007, a possible explanation being carryover stocks kept after the sharp slump in prices forced producers to hold their stocks in anticipation of a price recovery. Global demand was projected to be between 1600 to 1800 MT, in 2007, with Madagascar alone reported to be

³ Tropical cyclone Ivan made landfall in North Eastern Madagascar on 17th Feb. The Category 4 hurricane did substantial damage but as yet the impact on any vanilla growing areas is unknown. (Madagascar is the world leading producer of vanilla)

holding close to 1500 MT, including carryover stocks from 2006. Vanilla was projected to fetch between US\$ 16 – 18 per kg. Uganda’s vanilla exports fetched an average of US\$ 14.6 per kilogram in the same year, a fall from the previous year’s average of about US\$ 24.6 per kilogram. Several synthetic vanillin factories in China closed down in 2007, due to environmental problems, edging the prices of synthetic vanillin closer to those of natural vanillin. This pushed slumping international natural vanilla prices upwards in 2007.

Vanilla	2002	2003	2004	2005	2006	2007
Value (000 US\$)	6,898	3,546	6,120	6,135	4,808	6,262
Vol (MT)	63	91	71	234	195	422

*Source: (UEPB, 2007)



*Source: (UEPB, 2007)

CHAPTER FOUR

4.0 Conclusions and recommendations

This chapter presents conclusions and recommendations to improve vanilla industry in the Rwenzori Region in particular and Uganda in general.

The study analyzed the profitability of vanilla growing in the Rwenzori region among the small scale farmers.

4.1 Conclusions

Agriculture is the backbone of Uganda's development. With out proper enterprise selection criteria guided by good economic analysis, PEAP's pillar II; expansion of agricultural output through increasing farm productivity and house hold income will remain a big dream. Proper economic analysis ensures proper enterprise selection by farmers subsequently increased agricultural output and ultimately increased household incomes. This has got a significant impact on overall national economic transformation.

Through the survey and the review of relevant literature on vanilla production in the region, the study confirms that vanilla production is a profitable enterprise. However there are a number of issues that need to be addressed as reflected in the recommendations below. Thus this study has been a viable one as it identified major constraints and came up with key areas of recommendations to various stakeholders.

Finally, the provision of adequate agricultural services can bring about significant economic growth when other economic problems so rampant in Uganda such as inflation, political instabilities, and inequalities are tackled at the same time. It goes without saying that it's essential that there should be an appropriate economic environment; macroeconomic stability, enabling legal and regulatory framework, well functioning financial institutions, etc... These are essential prerequisites in development of commercial agricultural sector.

4.2 Recommendations

Field findings of this analysis show that farmers' major problem in this industry was "price mentality"; they hoped to get an exceptionally high price for vanilla and did not calculate profitability as a basis to regard vanilla unprofitable. Emphasis should thus be put on sensitizing farmers to rebuild their confidence in vanilla growing. All involved stakeholders should promote group cohesiveness, collective marketing for farmers to be able to access the buyers (strong horizontal and vertical integration)

Training: From the field findings, it was also discovered that majority of farmers do not keep farm records. Farmers should be given training not only in farming practices but also in the basic economics to be able to carry out feasibility studies before they undertake/ abandon any enterprises.

Timely information: CSOs like SATNET and others in the agricultural sector should endeavor to disseminate timely information to farmers regarding different enterprises. This would involve linkages to/and collaboration with the buyers. This emphasizes the point that delivery of relevant and timely information to farmers is very crucial in informing their price expectations and enterprise budgeting.

Enabling Financial Environment

Majority of the farmers interviewed said they had no collateral to access loans from the bank or MFIs, and most of them expressed limited proximity to lending institutions. The financial institutions lending through RPOs can guarantee loan through member joint liability. The government should ensure effectiveness of Rural Development Strategy through its action of “Enhancing Rural Microfinance Services provision through building the institutional capacity of savings and credit mobilization, planning and assessment in collaboration with extension workers” one of the major pillars of PMA.

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Rodella, 2004: <http://www.rodellevanilla.com/GrowingRegions.htm>

UEPB, 2007: [Uganda's Export Performance Analysis - 2007](#)

UEPB, 2005: Vanilla: Product Profile No. 9

APPENDICES

Appendix 1 Data collection tool for producers

VANILLA COST-BENEFIT ANALYSIS QUESTIONNAIRE TO PRODUCERS

Dear respondent,

SATNET would so much appreciate your cooperation in this exercise as this will help her to establish the viability of vanilla production in the Rwenzori region, in order to help farmers there in make informed enterprise selection decisions. The information you give will be treated with desired confidentiality.

District.....
Name of the respondent.....
Name of the organization.....
Sub county.....

SECTION A

Tick where appropriate

1. How long have you been growing vanilla?
 - i. One year
 - ii. 2 - 5 years
 - iii. 5 years and above
2. Do you keep farm records?
 - i. Yes
 - ii. No
3. What was initial acreage of your vanilla plantation?
 - i. 0.5 acres
 - ii. 1-2 acres
 - iii. Above 2, specify.....
4. What is your current acreage.....
5. How many vines did you plant per your initial acreage?.....
6. How much did you buy the initial planting materials?.....
7. What were the other initial cultivation requirements and their costs.....
8. How much did it cost you to make initial land preparations.....
9. How much did you spend on planting.....
10. If you expanded your acreage, how many additional vines did you plant.....
11. How much did the additional vines and support trees cost you.....
12. How do you maintain your vanilla plantation and soil fertility.....
13. How much does it cost you to employ the above mentioned measures.....
14. Do you experience any problem of weeds on your vanilla farm?
 - i. Yes
 - ii. No
15. If Yes, How have you been trying to control the weeds? Indicate their cost implications.....
16. Do you experience the problem of pests and diseases?
17. If yes, please specify and describe.....

-

 18. What pest and disease control measures have you employed to overcome the above mentioned disease or pest problem.....

 19. Has there been any effect of tremendous climatic changes to the vanilla vines or support trees? If yes, Please specify.....

 20. How much does it cost you to pollinate your vanilla plantation per season.....

 21. What indicators do you observe to tell that vanilla is ready for harvesting.....

 22. What are the harvesting requirements and their costs.....

 23. What other costs do you incur from the point of production to the point of sale of your vanilla that have not been so far captured? Please specify.....

 24. How much did you harvest for the very first season of your vanilla production.....
 25. At what price did you sell the initial harvest per kg.....
 26. How much do you harvest on average per vanilla plant currently.....
 27. How much do you receive for each kg sale of vanilla beans.....

 28. Do you find it profitable to engage in Vanilla production?
 i. Yes
 ii. No
 29. What major challenges do you face in vanilla production.....
 30. What do you think can help you improve production and vanilla productivity?.....

Thank you and God bless you!

Appendix 2 Data collection tool for Buyers/exporters

Interview guide for vanilla Processors and Exporters

1. Name of the Export/ processing organization.....
2. Name of the respondent.....
3. How long have you been processing vanilla?
4. Do you sell processed vanilla to other buyers or you export direct?
5. How long have you been exporting vanilla?
6. In what form do you export the vanilla?
7. What is your vanilla product destination?
8. Where do you buy vanilla for processing and or export? Farmers, associations, other buyers
9. At how much do you buy fresh vanilla beans from the farmers?
10. Do you own a fair trade certificate/Organic certificate?
11. If yes, how much is the premium price given to farmers in the fair trade or organic market?
12. What benefits do you enjoy with the above mentioned certificates as a buyer/ exporter in terms of premium export price?
13. At what price do you export vanilla?
14. If you sell to other buyers, at what price do you sell?
15. Please give the price trends for the past three years (both buying and selling/export prices) 2005- to date
16. What is the locked potential of vanilla? In other words, apart from growing vanilla for export what other values does vanilla posses to the local farmer/ buyer/
17. What future prospects do you have in vanilla industry?
18. Do you envisage any price rise or fall in the future?
19. What challenges do you find in this industry?
20. What do you think could be the possible solutions to the above mentioned challenges
21. How do you think the government could intervene?
22. What advice would you give to vanilla farmers

National level

Appendix 3 Interview guide for UEPB

1. Vanilla production statistics in the country since 2004,
2. Global vanilla industry- international vanilla production, global price structure, export market destination of Uganda's vanilla, market share of Uganda's vanilla on the world market, Fair trade/ organic certification.
3. Price trend analysis 2003- to date
4. Export trends since 2004- to date
5. How do you envisage the vanilla prices (price rise or fall)