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UNITED NATIONS DEVELOPMENT ORGANIZATION (UNIDO)

PRE-FEASIBILITY STUDY ON VALUE ADDITION TO UGANDA COFFEE EXPORTS

FINAL REPORT

DECEMBER 2003

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UGANDA

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LIST OF ABBREVIATIONS

ACP	African Caribbean and Pacific
AGOA	African Growth Opportunities Act
BNSIG	Beijing North Star Industrial Group
COMESA	Common Market for Eastern and Southern Africa
COMPETE	Competitive Private Enterprises and Trade Expansion
CFC	Common Fund for Commodities
CWDO	Coffee Wilt Disease
EAC	East African Community
EAFCA	East African Fine Coffee Association
EU	European Union
FAQ	Fair Average Quality
FAO	Food and Agriculture Organization
FAS	Foreign Agricultural Service
ICA	International Coffee Agreement
ICC	International Coffee Council
ICO	International Coffee Organization
ITC	International Trade Centre
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MT	Metric Tonnes
NAADS	National Agricultural Advisory Services
NARO	National Agricultural Research Organization
PMA	Programme for Modernization of Agriculture
PEAP	Poverty Eradication Action Plan
RTD	Ready To Drink
UCDA	Ugandan Coffee Development Authority
UCFA	Uganda Coffee Farmers Association
UCTF	Uganda Coffee Trade Federation
UCRA	Uganda Coffee Roasters Association
UNIDO	United Nations Industrial Development Organization
USDA	United States Department of Agriculture
WTO	World Trade Organization

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PREAMBLE

"Unequal exchange is one of the mechanisms whereby value is transferred from one group of countries to another- --------and is the elementary transfer mechanism and that, as such it enables the advanced countries to begin and regularly, to give new impetus to that unevenness of development that sets in motion all the other mechanisms of exploitation and fully explains the way that wealth is distributed [1]

"The worst thing that happened to the coffee industry during 2001/2002 season is the record low world coffee prices. Globally farmers were selling their coffee at far below the production cost while roasters were making astronomical profits. Observers say that this may not be due to overproduction as alleged but rather the "fruits" of globalisation, feared to strangle the poor. The shift of coffee money from the producers to the consumers has been steady and on for a while. It is estimated that about ten years ago the world coffee economy was worth US $ 30 billion of which producers received US $ 12 billion. Today it is worth US $80 billion and the producer receives US $6 billion only" [2]

The above statements underscore the urgent need for change in coffee marketing strategies by producer countries such as Uganda. Value adding before sale could provide a solution and earn producers and the economy some additional income in order to make them receive a more equitable share of the revenues from the coffee trade.

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[1] Arghiri Emmanuel (1972) Unequal Exchange: A Study of Imperialism of Trade (Monthly Review Press, New York)

(2) J.N Byarugaba, Executive Director UCTF in "The Coffee Year Book, 2002-2003"

1 BACKGROUND TO THE STUDY

1.1 Scope of Work

The Terms of Reference (ToR) are attached as Appendix 1 to this report. Specifically, the ToR required us to:

- Review in detail the project concept, prospects and identify constraints which hindered immediate implementation of the project by the companies which had shown interest in value addition to Uganda coffee exports;
- Review investment requirements for setting up a soluble plant in Uganda and or in any other part of the export market;
- Study the competitive advantage against competitors in the setting up of a soluble coffee plant in Uganda, looking to the new areas of consumption (China, North Africa, Middle East and South Africa), giving the detailed analysis of the prospects for export of soluble coffee from Uganda to these markets;
- Explore avenues required to go into joint venture partner-ship with foreign companies who are already in the market with their own label and have established market distribution channels.
- Study tariff structures and other none tariff barriers which could influence prices of roasted or soluble coffee both in the internal and export target markets;
- Review the present and future markets and propose marketing strategies;
- Evaluate possible environmental impacts of setting up a soluble plant in Uganda;
- Identify the training needs assessment and skills required for implementing the project and,
- Generate any other data on soluble coffee investments that would see the successful implementation of soluble coffee project in Uganda.

In conducting our analysis, we have relied upon information provided by UCDA, data collected from various agencies on the markets and interviews conducted to the various stakeholders as specified in the TOR.

1.2 Outline of Report

The balance of our report is set out as follows:

Section 2: **Executive Summary:** Which gives a brief synopsis of the report.

Section 3: **Background to the study:** This section gives a background to general issues of the coffee sector in Uganda and highlights the major aspects that would be covered by the study.

Section 4: **Uganda in International Coffee Trade:** This section highlights performance of Uganda coffee in the international markets and provides an overview of the trade in Robusta coffee.

Section 5: **World Soluble/Extracts Coffee Trade:** This section highlights the international market of soluble coffee, production and examines tariffs and other barriers in soluble coffee marketing.

Section 6: **Review of Past Attempts in Value Addition For Uganda Coffee:** This section examines previous attempts to establish projects of value addition to Uganda Coffee exports and analysis possible reasons for the failure to take-off of these projects.

Section 7: **Evaluation of Options For Setting Up a Soluble Coffee Plant:** This section examines the different options that Uganda could explore in determining the most viable option of setting up a soluble coffee plant and analyses the possible bottlenecks that could be encountered in adopting the various options.

Section 8: **Conclusions and Recommendations:** This section summarises the finding of the pre-feasibility study and outlines the major recommendations.

Section 9: **References:** Lists some of the major publications reviewed for information and data.

1.3 Incorporation of UCDA Board Comments

We have, in this final report, incorporated the comments from the Board of UCDA following the presentation made to them on Monday 8 December, 2003. A summary of changes to the discussion report is provided as Appendix 2.

1.4 Acknowledgement

We would like to extend our special appreciation to the following who provided us with the information required to complete this assignment:

1. Officials from UCDA and especially the Managing Director Mr. Henry Ngabirano and other UCDA officials including David Kiwanuka and Engineer Luswati.

2. The private entrepreneurs of Star Café, Zigoti Coffee Works Limited, Wambulungu Multi-purpsose Agents and Bancafe Limited.

3. Officials from the different Ministries we interacted with including those from ministry of Agriculture, Animal Industries and Fisheries, Ministry of Tourism, Trade and Industries and Ministry of Finance, Planning and Economic.

4. Officials from UNIDO (Uganda office) and Uganda Investment Authority (UIA).

The List of people and meetings held is attached as Appendix 3.

2 EXECUTIVE SUMMARY

2.1 Client

The Uganda Government through its agent Uganda Coffee Development Authority requested U.N.I.D.O to finance a pre-feasibility study on the possibility of manufacturing soluble coffee with the facilities being installed either in Uganda or elsewhere in a selected consumer country. To this end the consultants Deloitte & Touche were contracted to carry out the pre-feasibility study.

2.2 The Pre-Feasibility Study

During the first meeting between the client UCDA and the consultants, it was agreed that the study would confine itself to the core issues of manufacturing soluble coffee but give limited attention to peripheral issues, which could influence the proposed project. In accordance with the terms of reference the following issues have been analysed and observations made namely:

- Previous attempts to establish value addition ventures for Ugandan coffee.
- Competition opportunities and trade advantages in China, North Africa, Middle East and South Africa. Options for partnerships in the soluble coffee ventures.
- Tariff and non-tariff barriers and factors influencing the success or failure of the soluble coffee venture.
- Overview of the market characteristics and opportunities in the selected countries.
- Other factors which may impact the proposed venture in Uganda

2.3 Coffee in the Country

In order to put the soluble coffee manufacturing project into perspective the consultants found it prudent to review the industry generally and also the previous work on the sector and its present status. This review has established that coffee which still contributes over 20% of exports and supports about 500,000 producers still occupies an important position in the economic development of the country and there is strong desire and political will to enhance the role that this crop plays in Uganda's economy.

A review of past programmes for adding value to Uganda's coffee before sale has been undertaken. Such programmes are being implemented covering the wet processing of Robusta in the same way as Arabica, improving grading system, milling and classification of milled coffee. Further steps have been undertaken in establishing commercial roasting and grinding for the domestic market. The private sector has also commenced manufacturing of instant coffee for the small home market. Issues affecting economics of production at farm level and the revenues accruing from green coffee sales to farmers and other stakeholders are reviewed based on the annual reports of the Uganda Coffee Development Authority. From this, conclusions are made that prices of the clean

coffee have impacted negatively on the farmers and other players who depend on coffee for poverty alleviation.

A review of the legislative and policy issues namely the Coffee Act 1991 plus 1994 amendment, the PMA and the Poverty Eradication Action Plan has established the existence of favourable environment for the implementation of further opportunities in the value adding activities for the sector.

2.4 Analysis of Past Attempts in Value Adding Through Soluble Coffee

2.4.1 Concept

The project concept was reviewed by examining past project proposals. The previous strategic programme for coffee development included among others a proposal for a joint venture between the then Coffee Marketing Board and Eurocafe S.A of Spain to build factories for a 2,000 ton soluble (spray dried) and 3,000 ton decaffeinated coffee in Uganda. The market was assumed to be in Spain and possibly some of the EU countries. While it appears that there was inadequate market evaluation the project was not implemented because:

- The Uganda government did not provide the investment guarantees stipulated in the proposal. Therefore, Eurocafe S.A. could not proceed.
- The Coffee Marketing Board was wound up and its assets later sold. There was no alternative investor for the project within Uganda.
- Changes in policy due to pressure for liberalisation whereby the government was to divest from trading activities. This meant that the government could not enter into new commercial ventures directly.
- Coffee prices increased rapidly raising costs of raw materials to uneconomic levels.

2.4.2 Investment Requirement

The project was based on the proposed investment of $8.8 million at that time with depreciation over 6 years. The favoured location of the project was based on availability of building infrastructure of the Uganda Coffee Marketing Board in Uganda and also due to peripheral economic benefits such as employment of local labour and income from utilities (electricity, water, ICT, taxes etc.). In the absence of a commitment by any specific partner in Uganda, the financing and implementing plan could not be undertaken. There was no proposal for alternative location of the project and no market survey was done as this was assumed to be the responsibility of Eurocafe S.A.

2.4.3 Market Opportunities

Analysis of the market targets or segments in different countries has not been done. A previous proposal for joint operations with Tanzania's company TANICA was made but no conclusive decisions were reached. Private sector participants in Uganda are not in favour of joining TANICA but prefer to have a manufacturing plant in Uganda. The suggested consumer countries in North Africa, Middle East, South Africa and China have not been studied adequately either for volume of available market or the market segment or the product type (spray dried, freeze dried, instant, agglomerates, or flavoured). It is therefore not possible to determine the marketing approach, which should be adopted.

2.4.4 Joint Venture Partnership

During discussions with the ministries of Tourism Trade & Industry as well as Planning and Economic Development, it is clear that as a matter of policy, joint ventures with government are not being encouraged. Instead, investments should be made by the private sector. The government will however give incentives such as duty waiver on equipment, packaging materials, tax deferment or rebate, provision of land and utilities such as energy, water and telecommunications.

The Uganda Investment Authority would assist investors by facilitating negotiations with financing and other institutions within Uganda. However, it is clear that the development of this kind of investment would depend largely on the private sector initiative both within and outside Uganda especially in the identified consumer countries. For purposes of furthering this concept, the UCDA would be expected to syndicate with UCTF and UCRA for a private sector investment promotion plan. Entry into the soluble coffee market has to either be through private label development or ingredient supply to an existing label owner willing to partner with the Ugandan group of investors.

2.4.5 Tariff and Non-Tariff Issues

A review of the existing tariff and non tariff barriers which could impact on the marketing of soluble coffee in the various proposed consumer countries reveals that bilateral trade negotiations would have to be undertaken between Uganda and each target country in order to come to suitable agreements similar to the USA-AGOA or the EU/ACP countries.

2.4.6 Present and Future Markets

A Preliminary review of the world and selected countries present and future markets has been done. This issue has not been fully covered due to obvious information constraints. The basic observation is that the global consumption has remained at 25million bags since 1990's. However, exports have been increasing to the emerging markets of Eastern Europe, Russia and Asia. It is segmented into high price, middle price, and low price

segments. The entry into each of these segments requires different approaches and possibly a variety of soluble coffee products.

2.5 Training Needs

A full assessment of training needs cannot be done at pre-feasibility stage because required managerial and workforce skills will depend on the type of soluble coffee manufacturing facility that is installed and its location. However, generally the coffee roasting and grinding processes are well understood and experienced manpower is available in Uganda. The soluble manufacturing process is highly automated/mechanised and requires specific management skills. The provider of the equipment can impart these skills to available manpower. The more challenging area of training should lie in the marketing component because a very aggressive and skilled approach will be essential for the successful launch and entry of commercial quantities of soluble coffees in the selected markets.

2.6 Environmental Impact

An evaluation of possible environmental impacts of setting up a soluble coffee plant would have to be done after a decision and location are arrived at. However, as a matter of principle, a soluble coffee processing plant location does not have significant influence on the environment so long as it complies with normal food processing requirements. The conversion of clean coffee beans to soluble releases waste ground coffee residues and this can be treated to meet environmental standards as stipulated by the National Environmental Management Authority.

2.7 Evaluation of Future Options

2.7.1 World Soluble Coffee Trade Issues

From the analysis of world soluble coffee trade, Uganda needs to note some factors as discussed in section 5 of the report.

- World consumption of soluble coffee has remained at 25million bags in the last decade and that consumption in major consuming countries is growing at less than 1% per annum.
- Over 80% of soluble coffee consumed is processed in the consuming countries.
- Although world imports have been growing the increase is from emerging nations of Eastern Europe and Russian Federation whose demand is for low quality blends of spray-dried powders and import prices are low compared to average world import prices.

- The Russian Federation accounts for 24% of world imports of soluble coffee but its import price is 48% below world average price. Most of its imports are from Brazil and India accounting for 66% of imports.
- World export prices have been on decline from the peak of over US$9/kg in 1995 to the 2001 price of US$4.50/kg, possibly explaining the fact that there has been no renewed interest to process coffee in Uganda since 1994/95.
- There is considerable change in consumer preference in the last decade. Freeze-dried and agglomerated spray-dried soluble have taken a significant share of the market from spray-dried powders. Decaffeinated coffee consumption has been on the decline and in most countries it accounts for less than 10% of consumption. Demand for new products e.g. canned, ready to drink (RTD) is growing and this is already accounting for 40% of the Japanese market.
- The success of many exporting countries is due to the development of a sizeable domestic market which offers potential for price discrimination and cushioning the exporter from fluctuations in world prices.
- Retail prices peaked at US$30.8/kg in 1995 but since then they have declined to US$25.8/kg in 2001.
- The retail prices despite their decline are still attractive for an exporter, however, the retail end of the soluble coffee business is in the hands of multinationals and supermarket chains and these create considerable barriers to entry by new suppliers.

2.7.2 Promotional Issues

In considering future options for investing in value addition processing of coffee the following promotional issues have to be taken into account:

- Creating foreign awareness of superiority of Ugandan coffee

- Rapid Development of the Domestic Market

- Foreign Roasting of Ugandan coffee and retailing under Ugandan label

- Promoting Ugandan soluble coffee processed in Tanzania under Ugandan label as test product for developing the domestic markets.

2.7.3 Market Entry Options

Obviously the starting point in design and engineering will be the minimum volume throughput which is commensurate with economics of scale. One way of achieving this would be to partner with an existing soluble coffee marketing organization, which has a significant share of the market. Alternatively, Uganda could enter into a commercial

private label manufacturing to produce a Ugandan label on contract. This option would require development of a marketing concept and investment in brand/blend promotion by the Ugandan investor.

The profits in the soluble coffee trade are in the retail markets of consuming countries. Therefore for Uganda to draw maximum benefit from soluble coffee trade, it must find a way of entering either through partnerships or long term contracts with distributor/retail chain stores such as supermarkets or 'coffee houses' and other specialized retail chains. The existing multinationals will present the biggest constraint in the struggle for penetration.

2.7.4 Technical and Marketing Issues in Investment

The following technical and marketing considerations in making specific investment decisions in a soluble coffee factory also need to be taken into account

- Changing processing technology and market segments
- Additional products and their marketing
- Detailed analysis of target markets
- Type of investment arrangements

2.7.5 Plant Location Issues as Identified in the SWOT Analysis

Analysis of Strengths show that there is a strong case to locate the factory in the country. The opportunities, which exist or can be promoted in the domestic, EAC, COMESA and other regions also support locating in the country. However, the issues as identified in the weaknesses mitigate against this. These include the non-existence of a domestic market, high investment costs, transportation logistical problems, poor development of support industries, environmental problems etc.

Major Threats include changing consumer preference and processing technology changes, surplus capacities in consuming countries, collapse of export prices and competition from other African processors amongst others.

The issues identified under the SWOT analysis can only be quantified in a detailed feasibility study to make a clear case for investment and location.

2.8 Conclusions and Recommendations

2.8.1 Location

Based on the pre-feasibility study report and findings the consultants believe that a soluble coffee manufacturing business can be established in Uganda after establishing key issues namely:

- the ownership of the business
- the identified market and
- the most likely product to be in demand.

2.8.2 Ownership Equity

The nature of ownership of the investment would best be jointly with the coffee farmers as a key investor and include other stakeholders and one or more potential importers in consuming country.

In order to facilitate the investment the government through Uganda Coffee Development Authority (UCDA) should syndicate the equity contributions. A company must be formed for that purpose of promoting the project.

Loans Finance: The syndicating body UCDA or Uganda Investment Development Authority should assist in bringing together the investors and possible loan providers.

2.8.3 The products and Capacity

It is recommended that the minimum economical processing capacity factory be developed for spray-dried coffee with an agglomeration unit. The finished product per year is 810 metric tons of agglomerated spray-dried brands. The capital costs of equipment would be $11.5 million excluding land civil works utilities and manufacturing costs in general. Based on assumptions taken in this report, the ex-factory cost would be at $3.61 per kg which is about $1.00 per kg below the current average export prices. Considering that this is better than ordinary spray-dried powders the Ugandan product would be expected to realise a higher export price.

3 INTRODUCTION

3.1 General Issues

Uganda produces two types of coffee. The robustas 'kiboko' (Coffee canephora) is the dominant type accounting for 80% of total production. Uganda is one of the centres of origin for robustas and some wild varieties are still found in some forests in Uganda. This coffee is dry-processed. The other type is the Arabica 'Bugisu' (Coffea Arabica) which is grown in Mt. Elgon highlands of Eastern Uganda and a small area in Western Uganda, and accounts for 20% of total production. It is wet-processed and fetches a higher price than the robustas.

Production of both types of coffee is by over 500,000 small holders, although some medium sized large farms and estates exist. Between 1996/97 and 2001/02 production of clean coffee averaged at 3.411 million (60kg bags) or 204,660 MT while exports averaged at 3.2million (60kg bags). Uganda has mainly exported its coffee in the green form except for some insignificant quantities of roast coffee. As such it has not enjoyed the huge benefits arising from value adding.

Coffee has played a pivotal role in the economic development of Uganda. In the decade and a half of civil strife between 1971 and 1986 it accounted for about 95% of foreign exchange earnings. Since then various diversification programmes have been put in place to develop other export enterprises while contribution by coffee has declined, mostly due to the collapse of International Coffee Agreement in 1989 and recent price declines since 1997. However, coffee still accounts for about 20% of foreign exchange earnings. In 1986 coffee earned Uganda US$397 million (97% of exports) but currently earns about US$84 million the lowest since 1965/66.

Arguments have been advanced that value adding through roasting and manufacturing soluble coffee can add more income to farmers. However, it has to be noted that world trade is dominated by a few very large multinational companies at the retail end of the chain. With an estimated annual world retail trade estimated at US$ 70 billion producers only receive US$ 5.5 billion or 8% of retail price. This is a classical situation of the developed world enjoying the coffee farmers' sweat at the lowest possible price.

The search for value-adding opportunities for coffee in producing countries has been going on since the break-up of ICA in 1989 when prices collapsed. However, prices started climbing and reached a peak in 1997 but since then prices have declined to an all time low and the search for value-adding opportunities has been intensified.

Traditionally, value adding has been viewed in terms of value adding at origin by producing roasted and soluble coffee. However, due to multinationals monopolising retail coffee trade in consuming countries, individual coffee producers have not been able to penetrate this market and where it has been done it was mostly by multinationals producing in producer countries and exporting under their brand names. During 1997/98 roasted and soluble coffee exports for producing countries were about 13,000 MT and

121,454 MT respectively. This represented 3.6% and 29% of world roasted and soluble coffee exports respectively. The countries, which have made in-road in exports, are mostly in Central and South America e.g. Colombia, Costa Rica, Dominican Republic, Guatemala, Mexico, Brazil and in recent years Vietnam. These countries mostly supplied the USA/Canada markets. In Africa, only Cote d'Ivoire, Tanzania, South Africa and Morocco have value-added soluble coffee for exports. The constraints, except for dominance of consuming markets by multi-nationals have mostly been due to

- reliability of quantity and quality,
- blending characteristics especially when a country produces only one type of coffee, and;
- high investment costs for manufacturing, that is, vacuum-packing and gas-flushing roasted coffee to maintain flavour, and freeze-drying and spray-drying of soluble coffee.

Although value-adding opportunities by processing at origin are limited, opportunities exist at value-adding of green beans by capitalising on specific flavour characteristics, stringent grading and quality, standard contract with small roasters specialising in single origin coffee and active marketing and publicity to promote uniqueness of the country's coffee as has been profitably done by Colombia. The most possible value-adding outlet for green coffee is the growing gourmet market. This outlet emphasises coffee from a single origin which can be sold directly to three market outlets namely; (i) Specialty market outlets by roasters who market through exclusive outlets, (ii) Sale direct to large companies/multinationals who specialise in premium brands sold through supermarket chains and (iii) sell to roasters who purchase from origin and are aware of uniqueness of coffee (ready to pay premium prices) and use it for blending or private label marketing chains.

In the case of Uganda the desire to add value to its products, especially coffee, has frequently been demonstrated whenever international prices fall below favourable levels due to both domestic and external factors. The realization that increased income opportunities could exist in value adding of Uganda coffee for the benefit of the country has created strong interest in efforts to explore and evaluate possibilities for investment in such activities by relevant coffee stakeholders of Uganda. The concept advanced has been that: benefits will accrue to Uganda in general and by extension to the country's coffee farmers in particular, through value adding investments in the sub sector.

3.2 Previous Work:

Previous attempts to address the issues of value addition have narrowed down the opportunities to the following specific areas:

a. Replacement of old coffee trees with selections of high yield potential and better quality characteristics. Hence the current programmes in production and supply of new coffee trees by the government to farmers through activities by UCDA and the Ministry of Agriculture.

b. Training of growers in adopting modern improved technologies in order to enhance productivity and production. An ambitious plan to increase annual production from the present 3.5 million bags to about 12 million bags by year 2006 has been prepared and is under implementation. This is expected to pave way for revival of the sub-sector and point to the need for further and widened marketing strategies.

c. Investment in value adding programmes based on post harvest processing and product diversification technologies and marketing systems. As stated already, programmes under (a) and (b) above have already been developed and are in the implementation stage. Changes in primary processing have been initiated through adoption of wet processing techniques for Robusta coffee at farm level.

Value adding opportunities through other activities under (c) above have not been fully explored but the private sector has already started to roast and grind some coffee for the domestic market. The government and its relevant agencies have decided to enhance these initiatives on a wider scale. Previous efforts in this area are poorly documented or non-existent. However, at the request of Uganda government the United Nations Industrial Development Organisation (UNIDO) under the Uganda Integrated Development Programmes, undertook a study of the coffee industry to identify ways of adding value to the green coffee beans with particular emphasis on the manufacture of soluble coffee. In the course of implementing the study the terms of reference were expanded to include revenue improvements from sale of green coffee as an option. The study recommendations were:

i. Reintroduction of washed Robusta coffee.

ii. Enhanced grading system

iii. Entry into speciality coffee trade including organics.

iv. Trials with instant coffee in conjunction with TANICA of Tanzania.

v. Commercialisation of by-products.

To date, recommendations (i) & (ii) are being implemented while recommendation (iii) is in experimental stages. Recommendation (iv) is being carried out on a small scale but not conclusively evaluated but (v) has not been implemented. Market studies are however being conducted.

The adoption of recommendations made by the Competitive Private Enterprise and Trade Expansion (COMPETE) project will go a long way in resolving production and quality improvement problems. In order to pursue in greater detail the issue of value adding

through the manufacture of soluble coffee, the Government has requested UNIDO for further assistance to carry out a pre-feasibility study specifically in this area. The government agent responsible has been designated as the Uganda Coffee Development Authority (UCDA). The object of this study therefore is to review previous work and information on this subject and to make further evaluation of the possibility for establishing a soluble coffee manufacturing plant either in Uganda or elsewhere, in order to add value to the coffee before sale and increase the national share of the coffee trade revenues.

3.3 Terms of Reference and Interpretation

During discussion with Uganda Coffee Development Authority, the client, it was agreed that the terms of reference should cover

i. Reviews of previous specific studies done in connection with value adding for coffee, the concepts selected and an identification of the principal constraints or factors, which hindered the implementation of proposed projects.

ii. Review of investment requirements for setting up a soluble coffee plant in the country or elsewhere. However a detailed proxy analysis would be done, only during the feasibility study stage.

iii. Examination of the market opportunities and key factors which impact on the various available options such as competition and consumption patterns in selected countries particularly China, North Africa, Middle East and South Africa.

iv. Explore alternative modes of investment in terms of equity and other partnership systems as well as market approaches and strategies with their merits and demerits.

v. Study tariff structures and non-tariff factors pertaining to the selected countries with a view to determine modes of entry into the soluble coffee trade therein.

The terms of reference covering environmental impact analysis and the identification of training needs were to be addressed in detail at the feasibility stage. However the generation of relevant information and data on investment and management options for a soluble coffee plant in Uganda or elsewhere would be availed by the consultants. The likely benefits to the coffee farmers and other stakeholders would be discussed and recommendations made in these respects.

4 UGANDA IN INTERNATIONAL COFFEE TRADE

4.1 Production in Relation to World Trade

Uganda is the tenth largest coffee producer in the world accounting for about 3% of world total production. This consists of 87% Robusta and 13% Arabica. In Africa it is the third largest producer accounting for 18% of production as summarised in Table 1. This production places Uganda as a significant player in the world trade.

	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02[1]
Uganda	4,297	3,032	3,640	3,097	3,200	3,200
Africa	20,216	16,340	16,100	19,591	17,671	17,773
World	103,788	97,413	108,432	113,588	117,447	115,756
% of Africa	**21.3**	**18.6**	**22.6**	**15.80**	**18.1**	**18.0**
% of world	**4.1**	**3.1**	**3.36**	**2.72**	**2.7**	**2.76**

(Source: USDA 2001 (1) Provisional)
Table 1: Uganda's **Coffee production (000/60kg bags)**

Uganda is also a major producer within the Robusta coffee producers group. Its share in production has declined from 13% in 1996/97 to 8.4% in 2001/2002 and averages at 10.4% for the period. Most of the growth in Robusta coffee production during the period has mostly been the developments in Vietnam which accounted for 19% in 1996/97 and 42% by 2000/01 and averages at 33% of Robusta production during the period as shown in Table 2.

South East Asia, especially Vietnam, Indonesia, Thailand on average account for 59% of world Robusta production and 11 other producers in the region notably Malaysia, Philippines and Laos are included. They account for 63% of world Robusta production. This has implications on Uganda as the country would face competition if it aimed at expanding exports to Asia as the regional producers have a comparative advantage in trading in the region. The table below shows production volumes of Robusta coffee in the world.

	1996/7	1997/8	1998/9	1999/00	2000/01	2001/02	Average	%
Cameroon	1,432	899	114	1,370	1505	1,550	1,312	4.3
Cote d'Ivoire	533	4,080	2,217	5,700	4,333	4,166	4,305	14.3
Uganda	3,840	2,692	3,276	2,540	2,720	2,762	3,138	10.4
Indonesia	7,900	7,000	6,950	6,660	6,494	6,280	6,681	22.1
Thailand	1,403	1,293	916	1,271	1,377	1,300	1,260	4.2
Vietnam	5,750	7,000	7,500	11,010	15,000	13,334	9,932	32.9
All others	3,901	3,300	3,756	3,314	3,522	3,641	3,572	11.8
Total	29,564	26,264	25,729	31,865	34,953	33,033	30,200	
% Uganda	13	10.2	12.7	8.0	7.8	8.4		
% Vietnam	19.5	26.7	29.1	34.6	42.9	40.3		

(Source: Compiled from USDA 2001 (i) Provisional)
Table 2: Robusta Coffee Producers (000/60kg bags)

4.2 Robusta Coffee Stock Situation

Since 1996/7 world coffee stocks have averaged at 24.2 million bags (60kg). Most stocks are mostly of Arabica type almost accounting for over 80% of closing stocks. Stocks in Robusta producing countries are comparatively lower as shown in Table 3 for 6 major producers.

	1998/9	199/00	2000/01	2001/02	% increase/decrease
Cameroon	69	67	315	460	567
Cote d'Ivoire	1,504	1,347	1,562	1,717	14
Uganda*	71	171	215	235	230
Indonesia	486	197	128	148	(70)
Thailand	245	260	167	418	71
Vietnam	1033	260	167	418	(60)

*Uganda stocks include Arabica stocks
(Source: USDA Report 2002)
Table 3: Closing Stocks for 6 Major Robusta Producers. '000 (60kg) bags

It is noted that stocks among African producers have been on the increase with Cote d'Ivoire holding very high stocks almost equal to one-third of its annual production. In South East Asia stocks have been on decline. Vietnam the world's largest Robusta producer had stocks equivalent to 3% of its annual production. The increase in stocks shows a deteriorating trade situation. South East Asian producers have managed to sell their coffee at the expense of African producers and this situation may hinder further coffee development in Africa.

4.3 Export Situation of Robusta Coffee

Between 1996/97 and 2000/01 exports of Robusta coffee by ICO members averaged at 25 million bags and accounted for about 30% of world coffee trade. The six major producers accounted for 94% of Robusta export as shown in Table 4 below.

	1996/7	1997/8	1998/9	1999/00	2000/01	Mean	%
Cameroon	1,376	787	1,027	1,272	1,152	1,123	4.5
Cote d'Ivoire	3,574	4,567	2,315	5,412	3,750	3,924	15.7
Uganda*	4,237	3,032	3,648	2,917	3,075	3,382	13.5
Indonesia	6,364	5,411	5,430	5,063	4,549	5,363	21.5
Thailand	1,103	785	417	960	1,066	866	3.5
Vietnam	5,422	6,615	6,664	10,914	14,310	8,785	35.2
All others	2,017	1,784	1,890	1,162	801	1,531	6.1
Total	24,093	22,981	21,391	27,700	28,703	24,974	
% Uganda	17.6	13.2	17.05	10.5	10.7		
% Cote d'Ivoire	14.8	19.9	10.8	19.5	13.06		
% Vietnam	22.5	28.8	31.2	39.4	49.9		

(Source: FAO statistics)
Table 4- Robusta Coffee Exports (000/60kg bags)
*Uganda exports include 13-15% Arabica

Trade in Robusta coffee has grown by about 19% during the period but most of the exports have been from Vietnam which in 1996/97 accounted for 23% of exports but by 2000/01 it accounted for almost 50% of exports. Uganda's share has declined from almost 18% in 1996/97 to 11% by 2000/01. All other countries have shown similar declines. The case of Vietnam needs serious analysis as it appears there is considerable subsidisation to enable it to compete with established exporters.

4.4 Uganda Coffee Importers and Value

Uganda exports coffee to over 30 countries but most of the coffee, about 93% go to the expanded European Union. In Europe, major importing countries are Holland (4.5%), Switzerland (4.3%), Spain (2.5%) and UK (2.3%). The Sudan, which shares a border with Uganda, imports 5% of Ugandan coffee as shown in Table 5. Among these importers, Spain and Egypt have shown some interest in value-addition of Ugandan coffee. Morocco possibly imports Ugandan coffee for blending in the Nestle soluble coffee factory.

The value of Ugandan coffee exports (Robusta and Arabica) rose from US$7.8 million in 1964/65 to US$558.5 million in 1976/77 (an increase of 627%). Since then, it has been on a downward trend and only picked slightly in 1994/95 and then started declining to the lowest level since 1964/65 i.e. US$83.9 million in 2001/02. Between 1996/97 and 2001/2002 the value dropped from US$355.13 million to US$83.94 million a drop of 323%. This drastically affected the overall performance of the economy, as coffee is a major foreign exchange earner. The performance during 2001/2002 is shown in Table 5 below.

Destination	60 kg bags	Value in USD$	%age	Cum %age
E.U*	2,222,352	59,708,438	70.6	70.6
Sudan	158,077	3,673,673	5	75.7
Holland	141,889	3,743,475	4.5	80.2
Switzerland	135,701	3,399,941	4.3	84.5
Spain	78,478	1,882,272	2.5	87
U.K	71,261	2,053,191	2.3	89.2
Germany	61,223	2,084,457	1.9	91.2
Italy	46,016	1,330,528	1.5	92.6
Hungary	45,046	1,125,088	1.4	94.1
Belgium	31,388	789,188	1	95.1
France	26,583	624,614	0.8	95.9
U.S.A	20,170	533,415	0.6	96.6
Poland	20,066	456,442	0.6	97.2
Denmark	18,650	746,046	0.6	97.8
Eritrea	12,170	335,971	0.4	98.2
Singapore	11,714	246,891	0.4	98.6
Portugal	7,984	220,112	0.3	98.8
Morocco	7,240	158,076	0.2	99
Greece	7,223	176,326	0.2	99.3
Japan	5,420	211,619	0.2	99.4
Netherlands	3,674	77,536	0.1	99.6
Israel	3,556	96,886	0.1	99.7
Canada	3,144	93,043	0.1	99.8
Egypt	2,330	49,898	0.1	99.8
All Others	5,026	119,825	0.2	100
Total	3,146,381	83,936,951	100	100

(Source: UCDA Annual Reports)

Table 5: Exports Of Uganda Coffee For Year 2001/2002.

Robusta coffee fetches lower prices than other coffees as shown in Table 6. In the decade under consideration the highest price realised by Robusta was US cents 182.95/pound (US$ 4.025/kg). This price was only 57%, 69% and 86% of Colombian milds, other milds and Brazilian/arabicas respectively. During the decade the Robusta price ranged from 38% to 85% of Colombian milds, 44% to 84% of other milds and 53% to 87% of Brazilian and other arabicas as shown in the table below.

					Robusta prices as % of		
	Robusta	Columbian milds	Other milds	Brazilian Milds	Columbian milds	Other milds	Brazilian milds
1992	43.63	67.97	63.64	56.49	64.2	68.6	77.2
1993	53.49	75.79	69.91	66.58	71.9	76.5	80.3
1994	119.72	157.27	148.53	143.24	76.1	80.6	83.6
1995	126.79	158.33	149.30	145.95	80.1	84.9	86.9
1996	82.72	131.23	119.89	119.77	63.0	69.1	69
1997	80.70	198.92	185.02	166.80	41.6	43.6	48.4
1998	83.93	142.83	132.25	121.81	58.7	63.5	68.9
1999	67.64	116.45	101.54	88.84	58.1	66.6	76.1
2000	42.12	102.6	85.09	79.86	41.1	49.5	52.7
2001	27.64	73.10	62.51	51.33	37.8	44.2	53.8
Highest Price	182.95	318.50	264.50	212.43	57.4	69.2	69.7

(Source: USDA 2001)

Table 6 Comparison of Robusta Coffee and Other Coffees (US cents/pound) (1992-2002)

4.5 Gourmet Coffee

Under the CFC/ICO/UCDA Gourmet Coffee Project and the Strategic Export Programme (SEP), Uganda hopes to certify 16,000 farmers as organic coffee producers as well as promoting other coffees from a single origin for specific specialty markets. Under the gourmet market, 'Victoria Crown' (washed Robusta from Masaka/Bushenyi and 'Elgon Pride (Bugisu Arabica) have generated interest and over 13,000 bags have been sold. The Bugisu Arabica has also been exhibited in the American specialty coffee exhibition and has generated some demand. Exports to specialty markets are as shown in Table 7

Year	60 kg bags	Destination
1994/5	0	-
1995/6	1,200	USA
1996/7	4,500	USA
1997/8	5,175	USA
1998/9	7,590	USA, Japan
1999/2000	4,010	USA, Japan, Canada

(Source: UCDA Annual Reports)

Table 7: Coffee Sales to Specialty Markets (1995/6 - 1999/2000)

5 WORLD SOLUBLE/EXTRACTS COFFEE TRADE (AN OVERVIEW)

5.1 Background

Coffee is the world's second most traded lucrative commodity, second only to oil. Until 1989, the coffee trade was governed by an intergovernmental cartel – the International Coffee Agreement (ICA) under the auspices of the International Coffee Organisation (ICO). Under the agreement, exporting and importing countries sought to regulate prices through export quotas, similar to how the Organisation of Petroleum Exporting Countries (OPEC) cartel controls the oil industry. Under this system, the international coffee market operated as a "primary commodity" trade. A commodity is a product with limited scope for quality differentiation. Quality differentiation was limited to the two natural varieties Robustas and Arabicas. Arabicas are the higher quality of the two, and are further differentiated into Colombian milds, other milds and Brazilian naturals. Beginning in the mid-80s, the cartel discipline started to wane. A new generation of coffee consumers with sophisticated tastes emerged. Known as the "Latte Revolution", and epitomised by the Starbucks Café chain, a taste for fine coffee emerged as a lifestyle statement similar to a taste for wine or designer clothes. However, this revolution has not translated into benefits to producers and the beneficiaries are roasters and retailers.

The institutional framework within which the coffee chain operates has changed dramatically following the breakdown in the International Coffee Agreement in 1989. Thus, the managed system of price stabilisation under the ICA has evolved into a market-driven system with buyer (roaster) dominance. The period since the breakdown of the ICA has also seen international traders extend their involvement in producing countries markets. In addition, new requirements have been set by roasters on the minimum quantities needed from any particular origin to be included in a major blend. In the process, a substantial proportion of total value added income generated in the coffee chain has been transferred from producing countries (Exports f.o.b.) to consuming countries. In the 1980's farmers were getting US$10-12 billion and the value of retail sales of coffee, largely in industrialized countries was approximately US$30 billion. Now the value of retail sales exceeds US$70 billion but coffee producing countries only receive US$5.5 billion. Prices on world markets, which averaged around 120 US cents/lb. in the 1980s, are now around US 50 cents/lb., the lowest in real terms for 100 years. The International Coffee Organisation estimates that the amount accruing to the farmer from the retail sales price of a cup of coffee in a coffee shop is less than 2%.

The decline in the coffee price on international markets over the past 10 years is the result of four main factors:

- excess production over consumption, partly linked to the emergence of new producing countries (Vietnam and Indonesia now represent 15% share of the world production);
- accumulation of stocks in consuming countries;

- exchange rate depreciation in many producing countries (Brazil, Indonesia, Uganda, and Vietnam...)e.t.c
- productivity advances in coffee production and marketing.

The World Bank predicts a 1% per annum growth in total coffee consumption to the year 2005. A threat for the future can be the lower consumption by young people, aged between 18 and 29, and also a concern about health, which leads to a reduced place for coffee in the diet. At the same time, the quality required is higher and the consumer market is becoming segmented, giving more place to consumers' new requirements like specialty coffees, light, organic or low-caffeine coffees. While the general trend in the consuming countries is to ask for more quality, the ICO argues that the current low prices paid to producers are in fact detrimental to quality.

5.2 Coffee Market Segments

The world coffee market segments include: (i) green beans trade (ii) roast/ground coffee trade, (iii) soluble/instant coffee (iv) decaffeinated coffee (v) canned iced coffee and (vi) Gourmet coffee

5.2.1 Green Beans Market Segment

World green beans exports average at 5 million. MT valued at about US$5.5 billion dollars with Colombian and other milds accounting for 41.6%, hard Arabicas 26% and robustas 32.4%. The three largest exporters i.e. Brazil, Vietnam and Colombia account for 51% of all green bean trade. Europe (All Europe) accounts for 54% of imports, North America (USA, Canada) for 27.4% and Japan for 7.5%. Coffee is imported for roasting and producing instant coffee for local consumption and re-export.

5.2.2 Roast/Ground Coffee Market Segment

About 81 million bags of all coffee consumed in the world, or 77%, is roast and ground and 88% is roasted in-country. In 2001, exports of roast/ground coffee were about 360,000 MT valued at US$1.3 billion. Producing countries only accounted for 15,420 MT (about 4.3% of exports), Germany, Italy and Belgium accounted for 48% of export trade while USA/Canada accounted for 17.2% of the total. Major importers are France, USA/Canada, Germany and Netherlands accounting for almost 50% on world trade.

5.2.3 Soluble/Instant Coffee Market Segment

World soluble coffee exports are about 420,000 MT valued at US$1.92 billion. Coffee producing countries accounted for 39% of this export trade with Brazil as the largest exporter accounting for 15% of total export trade. The largest importers are Russian Federation (23.7%), USA/Canada (10%), Germany (7.3%) and Japan.

The market is dominated by multinational firms: Nestle, Sarah Lee, Folgers and Mon Maxwell which control over 50% of the market. The multinationals manufacture soluble coffee in their plants and very rarely obtain soluble coffee from suppliers outside the group.

There are several specialist packers of soluble coffee for own-label products in consuming countries. Some operate their own processing plants. They often purchase soluble coffee for blending purposes from other sources to fulfill contracts that are beyond their capacity, or when imported soluble is cheaper than their own product. Other specialist packers have no processing capacity and merely blend and repack. The retail market for soluble coffee has three general segments:

Premium brands of freeze-dried soluble

Multinationals are dominant in this segment but there is some participation by other brands and supermarkets' own labels. Both Brazil and Colombia supply freeze-dried coffee to this market, which is still growing but not at the same rate as in the late 1980s. In general, freeze-dried coffee has made the most progress of all types of soluble coffees in those countries with some tradition of consuming good-quality coffee, although these markets for soluble products are not always large. Important gains have been made in countries that are reckoned to be mass markets for soluble products. Freeze-dried coffee accounts for 40% of the soluble market in Japan, and in the United States, 30% in Spain, 20% in Australia and one fifth in the United Kingdom. Extra premium blends of freeze-dried coffee composed solely or mainly of Arabica are also marketed in the sector.

Standard brands of spray-dried soluble

These generally consist of coffee that has been agglomerated. Agglomeration is a process that not only improves solubility but also transforms the coffee powder into more attractive granules. Agglomerated coffee has taken a substantial market share from the standard powder within the sector.

Cheap blends of spray-dried Powder

This is often coffee that has been imported from origin and repacked. Considerable over-capacity in manufacturing has resulted in extreme price competition. Brazil almost accounts for 50% of exports but prices are about 50% lower.

Freeze-dried soluble

Freeze-dried soluble has made rapid strides during the last 10 years. Processing is however comparatively expensive and product quality demands a high proportion of Arabica. The process is unsuitable for countries that produce only Robusta. The market has been built up by multinationals and is now being further developed by producers of other brands and own-label products. Brazil and Colombia are important suppliers, with Brazil already facing excess processing capacity. There is also surplus capacity for

freeze-dried coffee in consuming countries, especially Germany, but it is not as large as the surplus capacity for the spray-dried product.

Freeze-dried coffee takes over one quarter of the market for soluble coffee. In the opinion of the trade, the soluble coffee market as a whole is likely to grow only slowly over the next 10 years; by contrast the market for freeze-dried coffee will increase significantly. The opportunity for new suppliers must be weighed against the current over-capacity, which is probably sufficient to cover most, if not all, the anticipated increase in demand. Although most exports of freeze-dried coffee are as a finished product (in primary, not retail packaging), some sales are made as frozen concentrate for finishing in the country of destination.

5.2.4 Decaffeinated coffee

The decaffeination process is applicable to either spray-dried or freeze-dried soluble, in addition to roasted coffee. Decaffeinated coffee enjoyed a considerable rise in popularity during the 1980s, especially in the United States. However, as growth has now slowed and in places stopped, the opportunities for new suppliers are very limited. In most countries consumption is below 10% of total consumption and 'light coffees' with low caffeine have been introduced.

5.2.5 Canned Ice-Coffee and Ready to Drink (RTD)

This originated in Japan by the Ueshima Coffee Company and has made rapid inroads in that country accounting for 40% of the market and a market is beginning to develop in North America and Western Europe. A requirement for success is the ownership of vending machines and vending sites. As a result, soft drinks manufacturers have entered the market. The manufacture of concentrates has meanwhile already extended to producing countries such as Brazil and Colombia. In other Far East countries "3-in-1" beverages i.e. coffee, non-dairy creamer and sugar are gaining popularity.

5.2.6 Potential for Gourmet Coffee

The gourmet coffee industry has always existed in Europe and USA but it has developed very rapidly in USA since the 1980's with the 'Latte revolution' which promoted coffee as a lifestyle similar to good wine and designer clothes. There are two components of the gourmet coffee trade in USA i.e. specialty coffees and premium brands.

Speciality coffees are of single origin and roasted by comparatively small firms and marketed by exclusive outlets such as retail coffee outlets and up market delicatessens. Such companies as Starbucks Café Chain and Sweet Maria coffee of USA and Monmouth Coffee of London are in this group. 'Fashion' drinkers are ready to pay US$4/cup against US$2/cup in non-speciality stores in over 17,000 outlets in the USA. By 2000, there was an estimated 17,000 speciality outlets controlling about 21% of the US market, up from 12% in 1987. Starbucks currently controls 7% of the US coffee

market (1% outside US), and owns over 6,000 cafes worldwide, and is targeting 10,000 cafes by 2005. Starbucks Frappuccino, its leading brand is priced at US$4.75 a cup. From Colombia to Costa Rica, producers of mild arabicas realised that the ground had shifted. Commodity was out, brands were in. Columbian growers invented the **"Juann Valdez"** label, a little fellow who has become the "Johnnie Walker" of speciality coffee. Jamaica capitalised on her **"Blue Mountain"** coffee, India on **"Monsoon"**, Guatemala on **Antigua**, Hawaii on **"Kona"** and so on. Between 1996 and 2000, Jamaica's **Blue Mountain**, easily the most successful brand in the world, commanded a premium of US$14.50 per kilo over the benchmark prices for Colombian milds. This is despite the commodity grading system according Jamaican coffee a lower quality than Colombian.

5.3 World Green Beans Production and Trade

World coffee production by major regions is shown in table 8 below. Coffee production in North and Central America averaged 19.964 million bags (1.2 million MT) between 1996/97 and 2001/02 and in 2001/02 the region accounted for 17% of total world coffee production. The major coffee producers in North and Central America are Mexico, Guatemala, Honduras and Costa Rica. South America is a major producer of coffee, accounting for 43% of the world production in 2001/02 with an average annual production of 46.51 million bags (2.8 million MT). Brazil, Colombia and Peru are the largest producers of coffee in South America. Africa's coffee production averaged 17.95 million bags (1.1 million MT) and in 2001/02 it accounted for 15.3% of world production. The major producers of coffee in Africa are Cote d' Ivoire, Ethiopia, Uganda, Cameroon and Kenya. Between 1996/97 and 2001/02, Asia and Oceania's coffee production averaged 24.96 million bags (1.5 million MT) and accounted for 24.6% of world production in 2001/02. The largest producers of coffee in the Asia/Oceania region are Vietnam, Indonesia and India.

	1996/7	1997/8	1998/9	1999/0	2000/01	2001/02	%
N/c America	19,413	19,586	18,777	22,227	20,001	19,778	17.1
S. America	43,198	40,165	51,215	51,215	49,526	49,786	43.0
Africa	20,216	16,340	16,100	16,100	17,671	17,733	15.3
Asia/Oceania	20,961	21,322	22,341	22,341	30,248	28,419	24.6
World (million bag)	603.79	97.41	108.43	113.59	117.45	115.76	100
World (million MT)	6.23	5.85	6.51	6.82	7.05	6.95	

(Source: FAS/USDA Dec. 2001)

Table 8 : Regional Coffee Production (million bags/60 kg)

As shown table 8 above, the largest increase in coffee production has occurred in Asia/Oceania, notably Indonesia and Vietnam, while production in Africa has declined. The ten largest coffee producers in the world are shown in table 9 (those producing more than 3 million bags). It was noted that these ten countries accounted for over 75% of the world coffee production in the period under consideration. Brazil, mostly producing hard arabicas, has remained the world's largest coffee producing country accounting for about 29% of the world coffee production in 2001/02. While production in most countries has almost remained stagnant or declined, Vietnam has increased production almost threefold. Vietnam and Indonesia now account for over 15% of world coffee production. Africa's major producers, namely Cote d'Ivore, Ethiopia and Uganda, which accounted

for about 13% of world coffee production in 1996/97, currently account for 9.6%. Production in Ethiopia has remained stagnant while production in Cote d'Ivoire and Uganda has declined by about one million bags in each country during the period 1996/7 to 2001/02.

Million bags

	1996/7	1997/8	1998/9	1999/00	2000/01[1]	2001/02	%2001/02
Brazil	28,000	23,500	35,600	30,800	34,100	33,700	29.1
Vietnam	5,750	7,000	7,500	11,010	15,000	13,334	11.52
Colombia	10,779	12,043	10,868	9,512	10,500	11,000	9.5
Indonesia	7,900	7,000	6,950	6,660	6,495	6,280	5.43
Mexico	5,300	4,950	5,010	6,193	5,300	5,500	4.75
India	3,417	3,805	4,415	4,870	5,020	5,000	4.32
Cote d'Ivoire	5,333	4,080	2,217	6,700	4,333	4,166	3.6
Guatemala	4,141	4,200	4,300	4,364	4,494	3,827	3.31
Ethiopia	3,800	3,833	3,867	3,833	3,683	3,800	3.28
Uganda	4,297	3,032	3,640	3,097	3,200	3,200	2.76
Total	**78,719**	**73,443**	**84,367**	**87,039**	**92,125**	**89,807**	**77.58**
World Total	**103,788**	**97,413**	**108,432**	**113,588**	**117,447**	**115,756**	**100**
% World total	**75.85**	**75.39**	**77.81**	**76.63**	**78.44**	**77.58**	**77.58**

(Source: FAS/USDA Dec.2001)

Table 9: Ten largest Coffee Producers (mi. bags)

5.3.1 Coffee Beans Exports

Total exports of green beans in producing countries has increased from 57.86 million bags (3.47 million MT) in 1980/81 to 87.439 million bags (5.25 million MT) in 2001/02 and as shown in table 10 below, annual exports averaged 84.3 million bags between 1996/97 to 2000/01. In 2001, FAO figures showed that exports and re-exports totaled 5.33 million MT valued at US$ 5.5 billion or an average of US$1,033/MT (US$ 1.033/kg).

Coffee exports by ICO exporting members averaged 84.35 million bags (5 million MT) between 1996/7 and 2000/01. In 2000/01, Colombian milds accounted for 13% of total coffee exports by ICO members, with Colombia and Kenya being the major exporters. Other milds accounted for 28.6% with India, Mexico, Peru, Honduras, Guatemala and Costa Rica being the major exporters. Brazilian and other arabicas (hard arabicas) accounted for 26% with Brazil and Ethiopia as the major exporters. Robustas accounted for 32.4% with Vietnam, Indonesia, Cote d' Ivoire, Uganda and Thailand as the major exporters (See table 10). Between 1996/97 and 1999/2000, exports of Colombian mild declined by 13.2% while exports of other milds increased by 20%. Exports of other milds then declined by 12% between 1999/00 and 2000/01. Hard Arabica exports and exports of Robustas increased by 19% during the period. The most rapid increase in robustas exports has been by Vietnam, which increased exports from 5.4 million bags in 1996/97 to 14.3 million bags in 2000/2001, representing a 164% increase. This increase has caused decreases in exports by traditional robusta exporters like Uganda, Cote d' Ivoire,

[1] Estimates

Vietnam and Indonesia now accounting for 66% of all robusta coffee exports. Table 10 below summarises the quantity and type of coffee exports by ICO members.

	1996/97	1997/98	1998/99	1999/00	2000/01	% 2000/01
Colombian Other milds	13.263	12.388	12.066	10.978	11.514	13.0
Hard arabicas	24.240	24.759	25.693	29.082	25.344	28.6
Robustas	20.480	18.434	24.696	20.830	23.101	26.0
	24.093	22.981	21.391	27.770	28.703	32.4
Total (million)	**82.076**	**78.562**	**83.846**	**88.590**	**88.662**	**100**

(Source I.C.O statistics)
Table 10: Coffee Exports by ICO members and Type of Coffee

Coffee exports and value for major exporters are shown in table 11 below.

Country	Exports (000 MT)	Value (million US$)	US$/MT	Quantity/World
Brazil	1,252.23	1,207.74	964.5	23.5
Vietnam	931.0	391.33	420.3	17.5
Colombia	560.0	768.57	1,372.5	10.5
Indonesia	249.2	182.9	733.9	4.7
Guatemala	246.83	306.45	1,241.6	4.6
Cote d' Ivoire				
Mexico	180.3	212.75	1,180.4	3.4
Peru	162.15	241.75	1,490.9	3.6
India	159.73	180.14	1,127.8	3.0
	150.94	151.9	1,006.4	2.8
Total	**3,712.08**	**3,643.53**	**1,060**	**69.7%**
World	**5,329.41**	**5.51**	**1,033**	

(Source: ICO statistics)
Table 11: Coffee Exports by major exporters and value (2001)

The ten largest coffee exporters in the world account for 70% of exports and 66% of export value. The Colombian mild fetches US 1,373/MT and other milds range from US$ 1,000 to US$ 1,490/MT. Robusta export prices range from a low of US$ 420/MT in Vietnam to US$ 1180/MT in Cote d' Ivoire. Brazilian arabicas are exported at US$ 965/MT. The export price for Vietnam is extremely low and there is a possibility of providing subsidies to farmers and setting low prices to capture a larger market share.

5.3.2 Coffee Beans Imports

As per FAO statistics, coffee imports in 2001 totaled about 5 million MT valued at US$6.3 billion (US$1242/MT). The main importers mostly comprised of EU and rest of Europe, USA, Canada and Japan. In 1999, EU accounted for 42% of the 82.2 million bags consumed by importing countries, while the rest of Europe accounted for 12%, USA 23.4%, Japan 7.7%, Canada 4% and the rest of the world 11%. Growth in consumption has been about 2% per annum between 1995 and 1999, as shown in table 12 below. EU consumption of coffee has grown by about 1%, whole of Europe 1.5%, Japan about 2%, USA 2.5%, and Canada at about 8%. However, since 1999 there has been a decline in

coffee consumed by all the main importers. Table 12 below shows the major consumers of coffee between 1995 and 1999.

Million bags (60kg)

	1995	1996	1997	1998	1999	% of 1999
EU	33.082	34.635	34.688	34.428	34.514	42.0
Europe (All)	41.535	42.887	44.482	44.172	44.406	54.0
USA	17.363	18.049	17.771	18.549	19.204	23.4
Japan	6.224	5.922	6.096	6.122	6.343	7.6
Canada	2.510	2.763	2.864	3.410	3.315	4.0
World	**75.154**	**78.065**	**80.013**	**81.33**	**82.200**	
% growth rate	-	**3.9%**	**2.5%**	**1.6%**	**1.1%**	

(Source: ICO Reports)

Table 12: Coffee Consumption by major Consumers

Table 13 below shows the importation of coffee in 2001 by major importing countries and the value of imports. It was noted that the eleven importers accounted for 77% of world imports and 73% of the total value of imports. USA and Canada are the major importers of coffee accounting for 25.4% of world coffee imports. Seven major importers are in the European Union and account for 42% of imports. Japan accounts for 7.5% while Poland the only other significant importer, accounts for 2.3%.

Country	Imports (000 MT)	Value (ML US$)	US$/MT	% of World total
U.S.A	1,157.6	1452.0	1,254	22.8
Germany	834.7	1018.3	1,220	16.5
Japan	381.75	543.8	1,425	7.5
Italy	369.0	455.3	1,234	7.3
France	312.4	346.4	1,109	6.2
Spain	222.7	202.3	908	4.4
Belgium	138.0	174.5	1,264	2.7
Canada	132.9	217.9	1,639	2.6
Netherlands	120.9	176.7	1,461	2.4
UK	119.5	138.6	1,160	2.4
Poland	117.8	81.6	693	2.4
				2.3
Total/Average	**3907.6**	**4,589.5**	**1,215**	
World	**5,071.41**	**6.2995**	**1,242**	
% World	**77%**	**73%**		

(Source: FAO Database)

Table 13: Coffee Imports by Major Importing Countries (2001)

The average price in major importing countries is US$1215/MT but ranges from US$ 693/MT in Poland to US$1639/MT in Canada. These prices don't reflect the price differentials arising from different types and quality of coffee. Compared with export prices in table 11 the average world import price is 20% higher than the export prices while average import price in major importing countries are 17% higher than the average export price by major producers. These prices are reflective of composite ICA price indicators.

5.4 Roasted/Ground Coffee

5.4.1 Exports and Re-Exports

Both producing countries and importing countries produce roasted coffee for both domestic consumption and the export market. Data on roast coffee is usually quoted in green coffee equivalent or as roast coffee and one kilogram of roast coffee requires 1.19 kg of green coffee.

Production in producing countries can be analysed in three phases.

- For the period between 1980/81 to 1987/88, production grew from 10,740 MT to 20,220 MT representing an annual growth rate of 12% and an average annual production of 16,305 MT per annum.
- In 1988/89, production dropped by almost 50% to 9,720 MT and by 1993/94 it stood at 6,480MT. During this period, the average annual production was 6520 MT.
- In 1994/95 production increased by 113% to 13,800 MT and by 2001/02 it was estimated at 15,420 MT. During this period, production averaged at 13,433MT per annum. Exports of roasted coffee accounted for 0.25% of total coffee exports.

5.4.2 Exports of Roast and Ground Coffee (R&G)

In 2001, exports of roasted coffee were estimated at 359,994 MT valued at US$ 1.284 billion or US$ 3.57/MT (FAO 2001). Exports include both coffee producing and consuming countries but as discussed above coffee producing countries only exported 15,060 MT in 2001 which is only about 4% of world exports. Most of roasting and exporting is concentrated in consuming countries, which import coffee beans and then roast these beans for both domestic use and export.

Thirteen countries (exporting over 5,000 MT) dominate the roasted coffee trade accounting for over 87% exports. There is no coffee producing country among the thirteen exporters as shown in table 14.

European countries dominate the trade with the eleven major exporters accounting for 70% of the export trade. Germany, Italy and Belgium account for 48% of roasted coffee exports and USA and Canada account for 17% of the trade. Export prices range from US$ 2430/MT in Spain to US$ 4737/MT in Italy and average at US$ 3348/MT for major exporters which is 94% of average world export price. Due to the dominance of these consuming countries, producing countries have very little opportunity to penetrate the market.

Country	Exports (000 MT)	Value	US$/MT	Country's exports as %

		(Million US$)		of world
Germany	70.1	206.7	2,948	19.5
Italy	57.4	271.9	4,737	15.95
Belgium	45.5	121.9	2,677	12.6
USA	40.9	178.9	4,375	11.4
Canada	20.8	87.0	4,177	5.8
Australia	20.2	51.2	2,541	5.6
Poland	12.5	29.4	2,357	3.5
Denmark	10.7	34.6	3,234	3.0
Sweden	8.6	30.4	3,516	2.4
France	7.6	28.95	3,700	2.2
Spain	6.9	16.7	2,430	1.9
Finland	6.3	17.8	2,834	1.75
Portugal	5.4	21.6	3,995	1.5
Total/Average	**313.1**	**1097.0**	**3,348**	
World Total	**359.95**	**1284.4**	**3,568**	
% of world total	**87%**	**85%**	**93.8%**	**87%**

(Source: FAO Database 2002)
Table 14: Major Exporters of Roasted Coffee (2001)

5.4.3 Roast Coffee Imports

In 2001 roasted coffee imports totalled 329,672 metric tonnes, valued at US$ 1194.4 or US$ 3622/MT (FAO 2001). Fifteen countries accounted for most of the imports as shown in table 15. The United States and Canada were the major importers accounting for 23% of imports while France, the largest single country importer, accounted for almost 16% of total imports. It was noted that these countries, with the exception of the East European countries, are also the major exporters of coffee as shown in table 14.

These countries are also the major importers of coffee beans. Value adding is done by roasting. These countries imported coffee at an average price of US$1,215 (see table 9) and exported it at an average price of US$ 3,348, thus value adding by 175%. Retail prices in these countries also indicate the huge margins realised in the trade.

Country	Exports (000 MT)	Value (Mil. US$)	US$/MT	Export % World
France	52.3	145.6	2,784	15.9
USA	38.2	166.7	4,364	11.6
Canada	37.9	137.9	3,641	11.5
Germany	21.3	71.1	3,340	6.5
Netherlands	20.0	65.91	3,290	6.1
UK	14.1	68.3	4,831	4.3
Italy	13.1	31.5	2,409	4.0
Belgium	12.8	51.7	4,051	3.9
Austria	12.1	30.6	2,514	3.7
Poland	9.1	23.8	2,521	2.9
Lithuania	8.9	26.3	2,937	2.7
Estonia	6.1	16.7	2,723	1.9
Spain	5.8	23.2	3,985	1.8

Czech Republic	5.4	10.5	1,954	1.6
Luxembourg	5.4	34.6	6,462	1.6
Total/Average	**262.9**	**904.3**	**3,454**	
World	**329.7**	**1194.3**	**3,622**	
% World	**79.7%**	**75.7%**	**95%**	

(Source: FAO Database)
Table 15: Major Roasted Coffee Importers (2001)

5.4.4 Retail Markets for Roasted/Ground Coffee

Retailing of roasted coffee is dominated by multinational large and small roasters/packers and most of it is blended. This makes it impossible for single origin roasters to enter the trade with the exception of Colombia, which has a large production of coffee. Roasted coffee also looses flavour unless it is vacuum-packed or gas-flushed and properly packaged. Retail prices for some major countries are shown in table 16 below.

US$/Pound

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
USA	2.58	2.47	3.4	4.03	3.43	4.11	3.76	3.43	3.44	3.09
Netherlands	3.13	2.80	3.26	4.03	3.65	3.67	3.67	3.11	2.81	2.55
Spain	3.50	2.79	2.76	4.45	4.18	3.57	3.62	3.23	2.69	2.54
Italy	5.43	4.58	4.61	5.7	5.92	5.45	5.53	5.16	4.44	4.30
Belgium	3.05	2.78	3.42	4.88	4.04	4.0	4.2	3.55	3.22	3.00
Germany	4.48	4.12	4.63	5.80	5.03	4.76	4.96	4.33	3.46	3.18
France	2.59	2.25	2.67	4.0	3.51	2.85	2.94	2.61	2.19	2.01
Mean	**3.54**	**3.11**	**3.54**	**4.70**	**4.25**	**4.06**	**4.1**	**3.63**	**3.18**	**2.95**
US$/kg	**7.78**	**6.85**	**7.8**	**10.34**	**9.35**	**8.93**	**9.01**	**8.0**	**7.0**	**6.50**

(Source: ICO Statistics)
Table 16: Retail Prices for Roasted Coffee

It was noted that retail prices for roasted coffee peaked in 1995 at US$ 10.34/kg but since then they have been on a downward trend, reaching the lowest level in the decade at US$6.50/kg in 2001. However, as noted above, the average import price in 2001 was US$ 3.348/kg and coffee traders would still have a mark-up of 94% above the import price at the lowest retail price level.

5.5 Soluble Coffee/Extracts

5.5.1 Exporting Countries and Value

The world's soluble coffee market is dominated by multi-nationals i.e. Nestle and Kraft – General Foods and has a presence in every consuming country. Other local large companies also participate in the markets.

The retail market has three general segments: (i) Premium brands of freeze-dried soluble, (ii) Standard brands of a spray-dried soluble and (iii) Cheap blends of spray-dried powder. In the case of Premium brands, the multinationals are dominant. Some major growing countries e.g. Colombia and Brazil also supply this market. Freeze-dried coffee has become dominant in many countries. This type of coffee requires a high proportion of arabicas and is unsuitable for countries, which produce robustas.

Standard brands of coffee consist of coffee which has been agglomerated i.e. process of transforming coffee powders into granules to increase solubility.

Cheap blends of spray-dried powders are coffee powders, which are imported from origin and repacked. Prices for these blends are low fetching around 50% of premium brands.

World soluble coffee trade is about 400,000 MT of powder and coffee producing countries account for 25% of this trade. Exports of soluble coffee from producing countries averaged at 2.907 million bags (67,000 MT of powder) between 1980/81 and 1991/92. Since 1992/93 production has averaged at 4.5 million bags (104,160 MT of powder). In 2001/02, it is estimated that production will be 121,454 MT of soluble coffee. In 1985-1990, Brazil accounted for 69% of exports, Colombia 10%, Ecuador 5%, India 4%, Cote d'Ivoire 8% and others 4%.

World soluble coffee exports have risen from 232,059 MT in 1995 when average export price was US$9.11/kg to 418,000 in 2001, an increase of 80% but prices have fallen to US$4.60/kg, a decrease of 50%. Most of export growth has been in newly emerging markets of Eastern Europe, which import cheap blends.

Exports in 2001 were estimated at 418,243 MT valued at 1.922 billion dollars or US$ 4,596/MT. Exports are by both producing and consuming countries. The major 19 exporting countries (with over 5,000 MT of powder) accounted for almost 90% of world exports. Among the 19 countries only 7 were coffee producers i.e. Brazil, Colombia, Equador, Cote d'Ivoire, India, Malaysia and Mexico which accounted for 38.5% world trade as shown in Table 17.

	Exports (000 MT)	Value (Million US$)	US$/MT	Exports % World
*Brazil	64.2	204.5	3,184	15.4
Germany	47.2	340.5	7,217	11.3
Singapore	34.2	87.2	2,550	8.2
*Malaysia	31.2	59.8	1,914	7.5
*India	23.7	89.5	3,772	5.7
Spain	19.7	98.6	5,007	4.7
Poland	17.9	55.4	3,096	4.3
USA	17.3	94.7	5,468	4.1
France	16.0	106.6	6,681	3.8
UK	15.5	90.8	5,856	3.7
*Colombia	13.9	89.6	6,456	3.3
*Mexico	10.3	48.7	4,736	2.5
*Cote d'Ivoire				
China	9.3	45.2	4,883	2.2

*Equador	9.2	13.5	1,462	2.2
Switzerland	8.5	28.7	2,365	2.0
Canada	8.4	55.1	6,602	2.0
Netherlands	7.0	39.2	5,583	1.7
Belgium	5.8	62.2	10,785	1.4
	5.9	50.4	8,618	1.4
Total/Average	365.2	1,660.2	5,065	
World	418.2	1922.1	4596	
% World	87%	86%	110%	

* Producer countries
(Source: FAO Database)
Table 17: Major Exporters of Soluble/Extract Coffee (2001)

The average world export price is US$4,596/MT but for the major exporting countries, it is US$5,065/MT due to the high prices in Europe. Prices in Malaysia, Singapore and China are low because of the use of robustas for the regional markets. Colombia exports soluble coffee as 'a 100% Colombian' which is unblended and it fetches a higher price.

5.5.2 *Importing Countries and Value*

World imports totalled 442,881 MT valued at US$ 1.91 billion or US$ 4,315/MT. The major 19 importing countries accounted for 78.5% of world imports and 71% of imports value. The Russian Federation was the major importer accounting for 24%, but its import price of US$2,069/MT was 48% of the world average import price implying imports of cheap blends of spry-dried powders. Import prices in Europe, USA, Japan and Australia were generally higher than the average world price. Australia's import price was 169% higher than the average world import price, possibly implying importation of premium brands as shown in Table 18 below.

Comparing the average world import prices with average export prices, it can be noted that the price differential is US$281/MT implying that an importer – exporter can get a 7% margin on import price. Comparing Table 18 and Table 19, it can be noted that major exporters like United States and Germany can get 10% and 60% respectively over their import prices. Countries like Netherlands and Belgium can get 71% and 92% respectively by re-exporting their imports.

Country	Imports	Value	US$/MT	Imports % World
Russian Federation	105,130	217,489	2,069	23.70
U.S.A	34,189	169,682	4,963	7.70
Germany	32,389	146,049	4,509	7.31
Japan	25,337	111,427	4,398	5.7
United Kingdom	19,481	113,577	5,830	4.4
Singapore	16,367	39,492	2,413	3.7
France	15,216	100,064	6,576	3.4
Poland	14,996	59,768	3,986	3.4
Canada	10,169	41,909	4,121	2.3
Greece	8,930	40,121	4,493	2.0
Belgium	8,807	39,448	4,479	2.0
Czech Republic	8,478	51,582	6,084	1.9

Korea Republic of	8,153	12,853	1,576	1.8
China	7,903	34,177	4,325	1.8
Netherlands	7,782	48,975	6,293	1.8
Spain	7,012	29,260	4,173	1.6
Hungary	6,165	21,515	3,490	1.4
Malaysia	5,743	17,554	3,057	1.3
Australia	5,388	62,550	11,609	1.2
Total Imports	347,635	1,357,492	3,905	78.5
World Imports	442,881	1,911,030	4,315	
% of World Imports	78.5	71.03	90.5	

(Source: FAO Database 2002)

Table 18: Major Coffee (Soluble/extracts) Importers (2001) (Metric Tonnes)

5.5.3 Retail Markets for Soluble Coffee

The retail price of soluble coffee is heavily influenced on which market segment it follows under i.e. Premium brands of freeze-dried coffee, Standard brands of spray-dried or cheap blends of spray-dried powder. Multinationals who dominate the trade promote 'brand image' by heavy advertising while some specialised packers pack for supermarkets under 'supermarket private labels'. The retailing end of coffee creates considerable barriers to entry for producing countries and most of imported spray-dried coffee falls under cheap blends category which fetch a price of below 50% of premium brands.

Retail prices for solubles have averaged at US$10.625/pound in USA for the period between 1995 and 2001, while in the United Kingdom, they averaged at US$13.79/pound, which is 29% higher, than in the USA. Japanese retail prices are higher than those of the USA and UK averaging at US$ 14.82/pound which is 39.5% and 7.5% higher than that of USA and UK respectively as shown in Table 19.

	USA	UK	Japan	Average for countries
1992	-	10.01	12.62	11.32
1993	-	8.44	14.57	11.51
1994	-	11.36	14.69	13.03
1995	10.559	13.79	17.72	14.02
1996	9.959	13.35	15.24	12.85
1997	10.346	14.90	14.23	13.16
1998	10.483	15.42	13.52	13.14
1999	10.386	14.33	15.32	13.35
2000	11.005	12.91	12.92	12.28
2001	11.636	11.85	-	11.74
Average	10.625	13.79*(12.64)	14.82*(14.53)	13.01

(Source: ICO statistics)

Table 19: Retail Prices of Soluble Coffee (US$/Pound)

*Figure 1995-2001 for UK and 1995 to 2000 for Japan

Figures in ( ) are for period indicated

In the USA, retail prices have been stable but in the UK, prices were increasing during the period peaking in 1998 and since then, they have been on a downward trend. In

Japan, the prices peaked in 1995 but have been on the decline. Generally, it can be observed that prices have fallen to their pre-1994 levels following the general trend in the coffee industry in general.

5.6 Tariffs and Taxes

In most countries especially the European Union and North America, tariffs on green coffee have become lower or are zero-rated. However, in many other countries tariffs are still in existence but as globalisation continues they will become less. Tariffs and internal taxes exist for processed coffee. For major consuming countries they have been on the decline as shown in table 20 below comparing 1991 and 2001 tariff levels.

Country/ Trade Block	Roasted		Decaffeinated roasted		Soluble	
	1991	2001	1991	2001	1991	2001
U.S.A	0	0	0	0	0	0
EU	12% MFN 11.5% GSP	7.5% MFN 2.6% GSP	15% MFN 12.5% GSP	9% MFN 3.1% GSP	18% MFN 9% GSP	9% MFN 3.1% GSP
Canada	4.41cts/kg MFN 0% GSP	4.15cts/kg MFN % GSP	4.41cts/kg MFN 0% GSP	4.41cts/kg MFN 0% GSP	15.43cts/kg MFN 0% GSP	14.32 cts/kg MFN % GSP
Japan	- 20% MFN 10% GSP	20% general 16% WTO 10% GSP0.69	- 20% MFN 10% GSP	20% general 16% WTO 10% GSP	- 12.3% MFN -	12.3% general 13.2% WTO 9% GSP
Switzerland	0.9SF/kg MFN 0.55 SF/kg GSP	F/kg MFN 0.69F/kg GSP	0.9 SF/kg MFN 0.55 SF/kg GSP	0.69F/kg MFN 0.69F/kg GSP	2.6SF/kg MFN 1.5SF/kg GSP	2.13 F/kg MFN 2.13F/kg MFN

(Source: ICO Reports)

Table 20: Tariff Structures in Major Consuming Countries (1991, 2001)

MFN – Most Favoured Nation (normal tariff)
GSP-Generalized System Preference (preferential tariff)

It is noted that during the decade MFN and GSP have been on decline but with the failure of the recent WTO meeting in Mexico some countries might increase them. However, African Caribbean countries (ACP) under the Cotonou agreement are exempt from EU import tariffs but may be subject to internal taxes. In newly emerging economies, which are consumers of these products, bilateral negotiations are necessary to encourage trade.

5.7 Legal Restrictions

The U.S.A is in the process of enacting a law, "The coffee Purity Act" which will regulate the purity standards for both Robusta and Arabica green coffee to match with the ICO Resolution 407. This resolution limits the coffee defects level to no more than 86 per 350 grammes of Arabica coffee and 150 per 375 grammes sample of Robusta beans. Countries marketing pure and high quality coffees will benefit from this legislation, as it is likely to be adopted by many consuming countries.

5.8 Manufacturing of Instant Coffee In Uganda

5.8.1 Introduction

Uganda produces two types of coffee. The robustas 'kiboko' *(coffea canephora)* is the dominant type accounting for 90% of total production. Uganda is of the centre of origin for robustas and some wild varieties are still found in some forests in Uganda. This coffee is dry-processed. The other type is the Arabica 'Bugisu' (coffea Arabica) which is grown in Mt. Elgon highlands of Eastern Uganda and accounts for 10% of total production. It is wet-processed and fetches a higher price than the robustas.

Production of both types of coffee is by over 350,000 smallholders, although some medium sized large farms and estates exist. Between 1996/97 and 2001/02 production of clean coffee averaged at 3.411 million (60kg bags) or 204660 MT while exports averaged at 3.2mi (60 kg bags). Uganda has mainly exported its coffee in the green form except for some insignificant quantities of roast coffee. As such it has not enjoyed the benefits due arising from value adding.

Arguments have been advanced that value adding through roasting and manufacturing soluble coffee can add more income to farmers. However, it has to be noted that world trade is dominated by a few very large multinational companies at the retail end of the chain. With an estimated annual world retail trade estimated at US$ 70 billion producers only receive US$ 5.5 billion or 8% of retail price. This is a classical situation of the developed world enjoying the coffee farmers' sweat at the lowest possible price.

The search for value-adding opportunities for coffee in producing countries has been going on since the break-up of ICA in 1989 when prices collapsed. However, prices started climbing and reached a peak in 1997 but since then prices have declined to an all time low and the search for value-adding opportunities has been intensified.
Traditionally, value adding has been viewed in terms of value adding at origin by producing roasted and soluble coffee. However, due to multinationals monopolizing retail coffee trade in consuming countries, individual coffee producers have not been able to penetrate this market and where it has been done it was mostly by multinationals producing in producer countries and exporting under their brand names. During 1997/98 roasted and soluble coffee exports for producing countries were about 13,000 MT and 121454 MT respectively which accounted for 3.6% and 29% of world roasted and soluble coffee exports respectively. The countries, which have made an inload in exports, are mostly in Central and South America e.g. Colombia, Costa Rica, Dominican Republic, Guatemala, Mexico, Brazil and in recent years Vietnam. These have mostly supplied the USA/Canada markets. In Africa, only Cote d'Ivoire, Tanzania, South Africa and Morocco have value-added soluble coffee for exports. The constraints, except for dominance of consuming markets by multi-nationals have mostly been due to reliability of quantity and quality, blending characteristics especially when a country produces only one type of coffee and high investment costs for manufacturing that is - vacuum-packing and gas-flushing roasted coffee to maintain flavour, and freeze-drying and spray-drying of soluble coffee.

Although value-adding opportunities by processing at origin are limited, opportunities exist at value-adding of green beans by capitalising on specific flavour characteristics, stringent grading and quality standard contract with small roasters specialising in single origin coffee and active marketing and publicity to promote uniqueness of the country's coffee as has been profitably done by Colombia. The most possible value-adding outlet for green coffee is the growing gourmet market. This outlet emphasises coffee from a single origin which can be sold directly to three market outlets (i) Speciality market outlets by roasters who market through exclusive outlets, (ii) Sell direct to large companies/multinationals who specialise in premium brands sold through supermarket chains and (iii) sell to roasters who purchase from origin and are aware of uniqueness of coffee (ready to pay premium prices) and use it for blending or private label marketing chains.

5.8.2 Processing Technologies: An Overview

Different manufacturers favor various coffee blends and buy their beans from countries producing the required coffee types. The manufacturer then custom-blends products for special market outlets. The various stages are as described below.

Preliminary Steps in Processing

Roasting:
During roasting, the characteristic flavor of coffee is developed and highlighted (preserved). Both batch and continuous roasting equipment is available. Newer types of continuous roasters can automatically control temperature and humidity, re-circulate roaster gases, and control residence time of beans in the roaster. Some are being fed with green bean blends that are formulated and combined under computerised control.
Much research has been done on the roasting step since various blends require different heat treatments to develop optimum flavor. Further, a given blend roasted to various degrees will yield coffees of different color and taste qualities favored by different markets. Current roasting practices employ gas temperatures of about 260°C for about 5 min. The bean temperature rises to about 200°C during roasting. All of the free moisture is removed from beans during roasting; in addition beans lose about 5% more of their green bean weight as volatile chemical substances. One of the newer roasting processes employs heated nitrogen under pressure; among the advantages claimed is improved flavor due in part to removal of oxygen.

Grinding:
Following roasting, the beans are cooled and ground to specific grain sizes. This is not as simple a step as might appear. The size to which coffee is ground depends upon its intended end use; home use in a vacuum, drip or percolator brewer; restaurant use in a larger urn; vending machine use where extremely fast brewing may be required; or use in the manufacture of instant coffee. In each case, average particle size and particle size distribution affect the brewing time, the degree of turbidity in the cup, and other properties of the brewed beverage. Since the aroma and flavor properties of ground coffee are highly unstable to oxygen ad loss of volatiles, coffee that is to be stored for

long periods generally is packed in hermetically sealed cans and jars under vacuum or under inert gas. Coffee for restaurants, which is consumed more rapidly, may be packed in sealed bags. Storage stability in each case also is affected by grind particle size.

Brewing:

The brewing of coffee to the correct strength and flavor depends upon several variables. These include the ratio of coffee to water, particle size of the ground coffee, temperature of the water, mixing action in the brewer, and time. All will affect the amount of coffee solubles that are extracted from the ground bean. There is an optimum degree of extraction for best flavor; extraction beyond this point removes bitter constituents from the bean and ruins the brew.

Optimum extraction can be measured by determining the soluble solids in the brew. This is done by measuring the brew density with a floating hydrometer. Such a hydrometer has been calibrated by the Coffee Brewing Institute and a chart has been developed relating extracted soluble solids to coffee strength. Such measurements are very useful in developing brewing equipment, of which there are scores of designs, and in quality control measurements on brewed coffee.

Instant Coffee Processing

The biggest development in coffee technology of this century has been the development and gradual improvement of instant coffee. Instant coffee is made by dehydrating the brew; manufacture of this product is carried out in plants that incorporate the most advanced extraction, dehydration, and essence-recovery equipment to be found anywhere in the food industry.

Extraction:

Extraction of roasted ground beans is accomplished in an extraction battery that may consist of as many as six to eight percolators connected to be operated as a single unit. Percolators are run at different temperatures, and the extract is pumped from one to another at various stages of the brewing operation. Conditions are set to obtain maximum extraction without heat damage or over-extraction of bitter constituents. Extraction also is designed to filter the brew through the coffee grounds and thereby remove fats and waxes which otherwise would adversely affect subsequent drying and storage stability. Efficient extraction using a temperature profile decreasing from about 150° to 70°C removes most of the readily soluble solids and hydrolyses less soluble coffee bean carbohydrates resulting in a total extraction of about 40% of the weight of the roasted and ground bean.

Without high-temperature hydrolysis (150°C), only about 20% of the bean weight would be extracted, which is about what is obtained in home and restaurant brewing.

The extract from the percolators is rapidly cooled and when possible dehydrated immediately, since coffee aroma and flavor can deteriorate somewhat in as little as 6 hours even when cooled to 4°C.

Dehydration:

The principal method of dehydrating the extract has been spray drying, and spray driers have been designed especially for coffee. As in spray drying of other products, the size,

shape, density, moisture content, solubility, and flavor properties of the dried particles depend upon the droplet size sprayed into the drier, the time required for the particle to descend, the temperature exposure, the trajectory of the droplet to prevent sticking to the drier wall, etc. Spray-dried particles commonly are agglomerated to appear more like roasted and ground coffee and to improve solubility and minimize foam in the cup. Spray-dried particles also may be heated between rollers to produce fused particles, which are cooled and ground to give a crystalline flake-like appearance. Since the late 1960s, increasing quantities of coffee extract have been dehydrated by freeze-drying to retain maximum flavor and aroma. This has included the use of freeze concentration to produce very high quality concentrated extracts for the freeze-drying process. Currently, close to half of all instant coffee produced in the United States is freeze-dried.

Aromatization:

Even the best instant coffee from the drier lacks the full flavor and aroma of freshly brewed coffee. An enormous amount of work has been done to develop treatments of various kinds to improve flavor and aroma: these are referred to as aromatization. This generally involves adding back flavor and aroma constituents recovered during processing to the dry state. These flavor and aroma constituents have been trapped and recovered during roasting, grinding, and extracting, and have been obtained from oils pressed from the coffee bean. Hundreds of patents have been granted in this area alone. One interesting technique involves extraction of roasted and ground coffee with a coffee oil solvent such as liquid carbon dioxide. The cold CO_2 does not damage flavor and aroma compounds in the coffee oil, and is easily separated from the extracted oil for recompression and reuse. The extracted oil is then sprayed onto the instant coffee. Such an aromatization scheme, currently being used commercially, is shown in fig.2.1. After CO_2 removal of the oil, the roasted and ground coffee is still highly suitable for extraction of water-soluble solids in the regular extraction battery operation.

Spray Drying Process

By far the most important kind of air convection drier is the spray drier. Spray driers turn out a greater tonnage of dehydrated food products than all other kinds of driers combined. There are various types of spray driers designed for specific food products.

Spray driers are limited to foods that can be atomized, such as liquids and low-viscosity pastes and purees. Atomisation into minute droplets results in drying in a matter of seconds with common inlet air temperatures of about 200°C. Since evaporative cooling seldom permits particles to get warmer than about 80°C, and properly designed systems quickly remove the dried particles from heated zones, this method of dehydration can produce exceptionally high quality with many highly heat-sensitive materials, including milk, eggs and coffee.

In typical spray drying, the liquid food is introduced as a fine spray or mist into a tower or chamber along with heated air. As the small droplets make intimate contact with the heated air, they flash off their moisture, become small particles, and drop to the bottom of the tower from where they are removed. The heated air, which has now become moist, is withdrawn from the tower by a blower or fan. The process is continuous in that liquid

food continues to be pumped into the chamber and atomized, along with dry heated air to replace the moist air that is withdrawn, and the dried product is removed from the chamber as it descends.

Freeze-Drying Process

In recent years, freeze-drying has been developed to a highly advanced state. Much of the development work has been aimed at optimizing the process and equipment to reduce drying costs, which still may be two to five times greater per weight of water removed than other common drying methods. Freeze-drying can be used to dehydrate sensitive, high-value liquid foods such as coffee and juices, but it is especially suited to drying solid foods of high value such as strawberries, whole shrimp, chicken dice, mushroom slices, and sometimes food pieces as large as steaks and chops. These types of food, in addition to having delicate flavors and colors, have textural and appearance attributes that cannot be well preserved by any current drying method except freeze-drying.

Coffee liquor is frozen into 6cm thick cakes on a moving conveyor at a temperature of -45°C. The frozen cake is then broken into small particles and ice crystals are removed under very high vacuum, being converted directly to water vapour by a process known as sublimation. Freeze-drying is more energy expensive but is gentler on the product as less heat is applied to evaporate the water content. Consequently, freeze-drying is used for the finer tasting and more expensive blends of instant coffee.

Today, food companies wishing to install freeze-drying equipment on a major scale must consider the process from an overall systems approach. This includes material handling, the freezing operation, loading of drier trays, the drying operation, high vacuum and condenser requirements, unloading of trays, packaging requirements, and of course equipment, labor, and utility costs. Many equipment companies have designed total systems that can be custom-engineered for a specific product and the needs of the manufacturer. It is common for such equipment companies, working with food manufacturers, to design and install entire freeze-drying plants. Seldom are two such plants quite the same. One type of plant layout is illustrated in fig. 10.21. It also is sometimes advantageous to combine freeze-drying with air-drying. Vegetable pieces may be air-dried to about 50% moisture and then freeze-dried down to 2-3% moisture, giving a high-quality product at a lower cost.

5.8.3 Soluble Coffee Manufacture

Technologies

The manufacture of soluble coffee has been highly developed over the last fifty years and a variety of technologies are now available from different equipment manufacturers.

Complete process lines are available for the manufacture of any of the following soluble coffee products: -

a) Canned/liquid coffee
b) Spray dried coffee with possible additional agglomeration
c) Freeze dried coffee
d) Combination of (a), (b) and (c) above.

For each case/finished product a complementary packaging system has to be included.

Capacities

For a new entrant in the soluble coffee trade it is recommended that the minimum economic size of a processing plant be selected with provision for expansion.

The smallest viable industrial plant has been set at 125 kgs per hour finished product. Assuming operation for 6,500 hours per year the plant will produce 800 tons of instant coffee powder.

Larger production units of 1,600 tons and 3,200 tons are available depending on the market size that the investor can command.

Components

Apart from civil works, namely the site acquisition, preparation, building construction, supply of electricity, water, communications etc the major components of investment are:

- Green coffee cleaning unit
- Coffee roasting unit
- Roast coffee grinding unit
- Extraction unit
- Extract concentration unit
- Extract treatment unit
- Spray drying section
- Freeze drying section
- Agglomeration section
- Packaging section
- Jar system or canning system.

In addition there should be a general section for services, spares and storage.
For sections B, D, E, F, G and H there are alternative options of equipment and process as indicated below: -

B. (i) Batch roasting alone or
(ii) With recirculation to minimize the emission of products to the atmosphere. This prevents environmental pollution.

D. The extraction process can either be: -
(i) Traditional single-stage extraction with aroma recovery system or

(ii) A two-stage system automatically operated fast processing which improves quality of extract and enhances aroma retention.

E. The extract concentration units are available in three different systems namely: -

(i) Thermal evaporation with falling-film or rotary thin-film evaporation including aroma recovery components.
(ii) Reverse osmosis system.
(iii) Freeze-drying/concentration with complete aroma retention.

F. The Extract Treatment section system is chosen on the basis of the Extract concentration system adopted under (E) above.

G. Spray-drying system has also got two alternatives in machinery and equipment namely: -

(i) Tall-form dryer of single stage type with nozzle atomization or
(ii) Two –stage dryer with nozzle atomization. This type of dryer works at lower temperatures and therefore produces a better product in taste and aroma. The product is also a slightly agglomerated powder.

H. Freezing and freeze drying section has four different alternatives in machinery and equipment thus: -

(i) Batch freeze dryer with drum freezer (ROTA-FREEZE).
(ii) Batch freeze dryer with belt type freezer (CAB-FREEZE).
(iii) Continuous freeze drying (CONRAD) with drum freezer.
(iv) Continuous freeze drying with belt freezer.

The alternatives have to be selected with the help of engineering expertise and knowledge.

Cost-Estimates for Spray Dried Coffee

It is not possible to estimate the costs of civil works until a site is selected and acquired. This will also influence the costs of accessing and installing utilities.

With regard to machinery and equipment the following cost indicators may be used in estimating investment finance levels. Depending on local ambient conditions the different plant sizes will process the indicated amount of green coffee, which converts to, indicated coffee powder yields.

(a) 7,150 kgs per day green coffee to produce 3,000 kgs soluble powder
Cost of machinery/equipment ex factory = EUR 5.3 to 8 million.

(b) 14,130 kgs per day green coffee to produce 6,000 kgs of soluble powder

Cost of machinery/equipment ex factory = EUR 8.1 to 12 millions.

(c) 28,620 kgs per day green coffee converting to 12,000 kgs soluble powder
Cost of machinery/equipment ex-factory = EUR 10.5 to 15 million.

The above estimates cover all equipment and machinery except agglomeration units whose costs will be extra and range from EUR 1.5 million for a 150 kgs per hour unit to 2.5 million for a 500 kgs per hour unit.

Cost-Estimates for Freeze Dried Coffee

The following cost estimates are indicative and relate only to machinery and equipment. Civil works and utilities cannot be covered at the pre-feasibility stage:

Raw Capacity (kg/day)	**Product Output/day (Freeze dry granules)**	**Cost EUR (million)**
7,150 batch type	3,000 kgs	8.6 to 9.8
16,630 (continuous)	6,900 kgs	16.2 to 17.0
27,710 (continuous)	11,500 kgs	20.6 to 22.0

Utilities, Energy and Labour

The energy consumption from green coffee to finished product, i.e. roasting, extraction, concentration and drying, is in the magnitude of 1 kg fuel oil per kg instant coffee. This considerable amount of calories can be reduced by 20 – 40% by installing various types of recuperators, and for the large plant sizes a spent grounds incineration unit followed by a steam boiler creating sufficient steam for the extraction, evaporation and a substantial part of the heat to be used for the drying process.

Further a power consumption of 1 kWh/kg spray dried instant coffee powder and 4 kWh/kg freeze dried instant coffee should be taken into consideration.

Suppliers of equipment should be in a position to offer the client the assistance of engineers for supervision of the erection and start-up of the plant. However, the erection of the plant is normally undertaken by local fitters, welders etc.

Approximately 15 workers and a foreman are necessary to operate the plant in each shift. Besides, the client will need some people to take care of the maintenance of the plant and some unskilled workers for cleaning, loading and unloading during day shifts.

Based on the above given information we suggest that you consider what type of equipment is most suitable for your requirements during the feasibility study.

Observations on Processing Technologies and Associated Costs

Spray-dried and freeze-dried coffee processing technologies have differing equipment costs as shown in table 21 below.

Spray-Dried Coffee				Freeze-dried Coffee			
Costs	MT/Yr.	Cost ($million)	Cost/MT ($)	Costs	MT/Yr	Cost ($million)	Costs $/MT
1	810	6.572	8113.6		810	10.664	13165.4
2	1620	10.044	6200		1863	20.088	10782.6
3	3240	13.02	4018.5		3105	25.544	8228.3
Energy	1KWh/kg			Energy	4KWh/kg		
Fuel	1 kg/kg			Fuel	1 kg/kg		

1 Euro = 1.24US$

Table 21 :Cost comparison for soluble coffee processing

Several points can be noted about processing technologies and costs.

(i) Costs of equipment for freeze-dried soluble coffee are higher than those of spray-dried options ranging from 62% above the lowest option to 104% in the highest option.
(ii) In both cases, the costs are lower when capacity is increased, decreasing by a half in the case of spray-dried and by 40% in the case of freeze-dried implying economies of scale.
(iii) Electricity costs are four times in freeze drying than in spray-drying while fuel consumption is the same for the two options.

For the investor, these comparisons are critical in deciding on technology, depending on capital availability. However, the choice of the production capacity will ultimately depend on the availability of the market.

Preliminary Estimates of Costs of Processing utilizing the Lowest Viable Capacity

At this level of analysis only preliminary estimates can be made based on the following assumptions:

i) Blending at 30% Arabica and 70% Robusta
ii) Manufacturing costs at 75% of equipment costs (to cover building utilities, manufacturing costs)
iii) A loan/grant calculated at 175% of equipment costs and payable in ten years.
iv) For agglomerated coffee an additional US$1.86mi is required.
v) Material costs are calculated at US$0.75/kg
vi) Conversion factor is 2.383kg or green coffee to 1kg instant coffee.

Based on the above assumptions the cost per kilogram of spray-dried, agglomerated spray-dried and freeze-dried coffee is analyzed below:-

	Spray-dried powder	Agglomerated spray-dried	Freeze-dried
Installed capacity MT/Yr	810	810	810
Capital (Equipment + manufacturing)	$11.501mi	$14.756	18.662
Annual Repayment (10 yrs)	1.1501mi	1.4756	1.8662
Repayment/kg	1.42	1.82	2.30
Raw materials (0.75x2.383)	1.79	1.79	1.79

Ex-factory price sh/kg	3.21	3.61	4.09
10% interest payments	3.53	3.97	4.50

Table 22: Preliminary Estimates of Ex-factory Costs ($/kg)

It is noted that the lowest cost is US$3.53/kg for spray-dried, US$3.97/kg for agglomerated to US$4.50/kg for freeze-dried instant coffee. These ex-factory costs are below the average export price of US$4.60/kg, which implies that Uganda can export its coffee. There are other costs to be met before the products reach the consumers in the domestic and export markets.

Based on the above, it is recommended that the country invest in the minimum plant of 810MT/yr based on agglomerated powder as it produces a product which can be domestically and internationally marketed.

Possible Sources of Finances

In the proposal for 1995 various financiers had indicated willingness to participate by providing loans. These included:

a. African Development Bank
b. European Investment Bank
c. Nordic Development Fund
d. Commonwealth Development Corporation
e. IFC

Others, which can be contacted, include the East African Development Bank or any financial institution from any country, which has shown any interest in Uganda coffee. However, a full feasibility has to be done as outlined below for any financial consideration.

Feasibility Study

The principal components of the full feasibility study shall include the following aspects:

1. Executive summary

2. Project background and basic idea as described in detail under the pre-feasibility study report

3. Detailed market analysis and concept.
- Market identification
- Research and its report
- Project strategy
- Marketing concept and approach
- Costs and revenue forecasts

4. Raw material availability, supply and costs

- Selection of raw material – Robusta and Arabica
- Specifications
- Availability parameters
- Cost analysis

5. Location and site considerations
- Location analysis
- Environment and impact
- Socio-economic policies
- Infrastructure issues
- Selection and cost estimates

6. Engineering and Technology
- Available options and their costs
- Comparative analysis and choice
- Technology acquisition and transfer
- Plant layout and engineering costs and procedures. Procurement approaches
- Civil engineering works and cost estimates
- Maintenance and replacement plans
- Estimates of project costs

7. Organisation and Financing plan options
- Equity

8. Human Resources
- Technical Specialization
- Costs
- Training

9. Budgeting issues and plan outlays

10. Financial Analysis and Appraisal

11. Conclusion and Recommendations

The estimated costs to cover the feasibility study outlined above can be covered under a budgetary provision of US$30,000 over a 2 man/month period considering the work already done in the pre-feasibility study.

5.9 Factors to be noted by Uganda in relation to the world trade in soluble coffee

In making the decision to invest in soluble coffee, Uganda needs to note some factors as discussed in the sections above namely:

- World consumption of soluble coffee has remained at 25 million bags in the last decade and that consumption in major consuming countries is growing at less than 1% per annum.

- Over 80% of soluble coffee consumed is processed in the consuming countries.

- Although world imports have been growing the increase is from emerging nations of Eastern Europe and Russian Federation whose demand is for low quality blends of spray-dried powders and import prices are low compared to average world import prices.

- The Russian Federation accounts for 24% of world imports of soluble coffee but its import price is 48% below world average price. Most of its imports are from Brazil and India accounting for 66% of imports.

- World export prices have been on decline from the peak of over US$9/kg in 1995 to the 2001 price of US$4.50/kg, possibly explaining the fact that there has been no renewed interest to process coffee in Uganda since 1994/95.

- There is considerable change in consumer preference in the last decade. Freeze-dried and agglomerated spray-dried soluble have taken a significant share of the market from spray-dried powders. Decaffeinated coffee consumption has been on the decline and in most countries it accounts for less than 10% of consumption. Demand for new products e.g. canned, ready to drink (RTD) is growing and this is already accounting for 40% of the Japanese market.

- The success of many exporting countries is due to the development of a sizeable domestic market, which offers, potential for price discrimination and cushioning the exporter from fluctuations in world prices.

- Retail prices peaked at US$30.8/kg in 1995 but since then they have declined to US$25.8/kg in 2001.

- The retail prices despite their decline are still attractive for an exporter, however, the retail end of the soluble coffee business is in the hand of multinationals and supermarket chains and these create considerable barriers to entry by new suppliers.

6 REVIEW OF PAST ATTEMPTS IN VALUE ADDITION FOR UGANDA COFFEE.

6.1 Grading system

The proposal made to increase the number of grades of clean coffee in 1999 as a desirable move to add value was adopted by UCDA and is still in experimental stages. It is advisable to accelerate this work and carry out commercial trials. This would lead to making recommendations for adoption by the trade.

6.2 Roasted Coffee Business

During the field visit and consultative meetings it became clear that several attempts have been made in the past to identify ways and means of adding value to coffee by transforming the green beans through roasting/ grinding and improved packaging mainly for the domestic market. These efforts were accelerated after the coffee sector was liberalized. As a result there are 12 licensed roasters for Robusta and also the Bugishu co-operative Union for Arabica coffee. The outputs are confined to the rapidly growing domestic coffee market. Opportunities now exist for growth in this business which seems to have excess processing capacity and is poised for export into the regional markets. However there is need now to carry out a market study for the roasted and ground coffee on a wider scale in order to assess the quantity and value potential. The report of September 1999 reveals an estimated roasting and grinding coffee capacity of 1000 kg per year finished product while sales for that coffee year amounted to only 560 kgs. It was also reported that an unspecified amount of coffee is imported into the country. This competes with local products to the detriment of the market opportunity. The efforts and investment in coffee roasting, grinding and packaging business has been almost exclusively through the private sector, which is now organised under the recently formed Uganda Coffee Roasters Association (UCRA). The promotion of roasting outlets in consumer countries e.g. China by the UCDA should be carefully evaluated and its market size assessed.

6.3 Soluble Coffee

6.3.1 Proposal by Eurocafe S.A. and SEDA 1994

Due to the desire by the government and coffee exporters and roasters to add more value attempts have been made to evaluate possibilities for making and marketing soluble coffee.

In previous strategic programmes for coffee under the coffee marketing Board a proposal was made for a venture with a Spanish producer of soluble coffee for the construction of a coffee factory in Kampala funded in part by Spain. The project proposal by Eurocafe S.A. in 1994 was to be a 50/50 joint venture between a designated Ugandan partner specifically the Coffee Marketing Board on the one hand and Eurocafe S.A. which is the largest coffee trader in Spain. Eurocafe S.A. had obtained assurance of investment by its

principals SEDA as a shareholder. The concept was that soluble and decaffeinated coffee would be produced in Uganda based on lower grade coffees and exported to Spain for distribution in the European markets especially Russia as a new growing coffee market frontier which would accommodate an alternative brand(s) in competition with established multinational brands. Arguments in favour of Uganda were that the quality of its Robustas and Arabicas was better than other origins and that SEDA was in favour of locating its expansion plans there rather than in Spain due to cheaper labour availability and other utilities such as electricity costs. Also the likely cheaper transport of spray dried coffee than green beans was anticipated. Only a very small percentage of the annual coffee crop would be utilised and as such it would not affect the country's green coffee trade. It appeared at the time that the project met the key conditions of the Uganda investment code (Section 13) requireme

project by SEDA/ICONACAFE and South African interests and this needs to be explored further.

6.3.2 Proposal of Partnership with TANICA- Tanzania

The other proposal made was a partnership with the existing instant coffee factory in Tanzania, TANICA. This was tested by a private investor Star Coffee Co. Ltd. in Uganda. The experience as disclosed by the investor revealed that the export of clean coffee, roasted, ground or raw to TANICA and the re-export of soluble to Uganda is costly and logistically inefficient thereby making the product too expensive. Direct exports from Tanzania would prevent the value adding benefits from going back to Uganda since the product would be exported as "produce of Tanzania" The information based on the 1999 report indicated that TANICA and its market share of the soluble coffee trade was dwindling. The idea of Uganda investment in the old TANICA factory was not attractive and somewhat contrary to the investment policies at that time. It was also important to consider the validity of the 30-year-old factory.

The problems alluded to in the previous reports regarding handling of soluble coffees can be resolved by adoption of modern technologies for packaging and transport to consumer countries and storage in the distribution chain.

With the changes which have now occurred in the government policy for the coffee sector it seems inevitable that a detailed feasibility for the establishment of a soluble coffee project must be undertaken afresh particularly to assess the market and the cost /benefit factors accruing from such investment. As the world soluble coffee trade accounts for only about 25 million (60kg bags), which is only 20% of the total traded coffee annually, a crucial point to determine is how much of the Uganda's coffee should be converted into these products every year and which of the market segments are available for entry. This question is even more critical in view of the proposal to increase annual production from the present 3.5 million (60kg bags) to around 12 million by the year 2006/2007. These issues are discussed in detail under the market analysis section 5 of this report.

6.3.3 Market Considerations

The 1994 Eurocafe' S.A/Coffee Marketing Board and the 1999 UNIDO proposals did not include any marketing analysis either domestic/regional or international. It was assumed that the 2,000 MT of spray-dried coffee and the 3,000MT of decaffeinated coffee would be exported to Spain to be distributed by Eurocafe/S.E.D.A distribution system in Spain and other European countries.

Although no marketing analysis was done we can put forward some factors which may have influenced the renewed interest in soluble coffee manufacture. These include: i) Robusta coffee prices were at their lowest between 1989/90 and 1992/94, ii) Soluble coffee market was growing, iii) Spain's imports and exports were expanding and iv) retail prices were increasing while ACP imports were exempt from import tariffs. These factors are discussed below.

(i) Low prices of Robusta coffee after collapse of ICA in 1989

Between 1990 and 1993 the price of Robusta fell from US$1.17/kg to a low price of US$0.94/kg in 1992 and averaged at US$1.08/kg. This situation is almost similar to the 1998 to 2003 situation where prices have averaged at US$0.87/kg. This implies that the prices of raw materials for manufacture of soluble coffee are low.

(ii) Growth in Consumption of Soluble Coffee

Imports of soluble coffee grew rapidly between 1989 and 1994 rising from 166,678 MT to 255,177 MT an annual growth rate of 10.6%. Since then they have grown rapidly to 442,881 MT in 2001 an annual growth rate of 12% p.a. However, whereas import prices were on average lower than re-export prices before 1995, they have declined and currently an importer-re-exporter would not realise reasonable profits. This may explain the situation since 1995 when there has been no interest in manufacturing soluble coffee in Uganda.

(iii) Coffee Consumption in Spain

Net consumption in Spain has grown from 168,118 MT in 1995 to 194,349 MT in 1999, an increase of 15% but since then it has declined by 13% to 172,172 MT in 2001 (FAO). Spain's imports of soluble coffee rose from 3,795 MT in 1995 to 7,012 MT in 2001 an annual growth of 14%. Exports of soluble have also increased from 4,337 MT to 19,690 MT during the same period, an annual increase of 59%. However the import value has declined from US$9.9/kg in 1995 to US$4.2/kg in 2001 while the export value has also declined from US$16.5/kg to US$5/kg during the same period. At the time of the proposal (1994/95) Spain could import soluble coffee and re-export at a margin of US$6.6/kg or a 67% margin over import prices. In 2001, the margin is only US$0.8/kg or 19% over import price and this may not justify involvement in manufacturing in Uganda.

(iv) Retail Prices and Taxes

Domestic processing industries enjoy sufficient protection; however, with globalization taxes are being dismantled. In the EEC, the taxes were initially set at 18% MFN and 9% GSP. Imports from ACP countries were exempt from import tariffs. However, even at this level of taxation an importer with a retailing chain as Eurocafe/S.E.DA could still make a reasonable profit as retail prices of soluble coffee rose from US$24.9/kg in 1992 to US$30.8/kg in 1995. Since then they have declined to US$25.8/kg in 2001. In 1995 if Spain imported at US$9.9/kg and paid all taxes, the price would be US$12.57/kg and could still make a profit re-exporting at US$16.5/kg or retailing at US$30.8/kg.

6.4 Factors impinging on the project

It is appreciated that during the period prior to 1999 the situation in Uganda was characterised by social strife and the support for economic activities was minimal. Similarly the policy for the agricultural and other sectors was undergoing transformation

especially due to the pressure by World Bank and other agencies to liberalise the economy. For these reasons it was not possible to syndicate the necessary funding for the soluble coffee project or even identify the composition of equity participation and type of ownership which would guarantee success. Also there was the problem of inadequate information on the most suitable technology and end products with the highest chances of success in the available market which is very dynamic both in volume and product types. The issue of what technology and product to use is critical. It has been stated that consumption is divided over spray dried and freeze dried products. Similarly issues of flavour additives were not addressed. Within the now understood policy in which the government would not be a financial participant but a facilitator with limited incentives to the investors it will be necessary to identify the options available for participation by the private sector.

To satisfy consumer tastes and demands, soluble coffees are often sourced from different origins for raw materials in order to develop blends. Apart from the inadequate market information at present it is critical that the activities by the stakeholders in the private sector be brought into harmony by co-ordination of UCDA as recommended previously by UNIDO within the framework of Enhanced competitiveness and sustainability of Industrial development in Uganda. The suggestion for co-ordination by UCDA should be fully incorporated in order to benefit from government facilitation and enhance the spin-offs to be gained. The issues of excess clean coffee processing capacity and the high degree of outside funding should be addressed through increased production of coffee under the Strategic Exports Programme (SEP) and entry into new markets with new approaches for funding.

From the report of surveys to assess the extent and impact of Coffee Wilt Disease in East and Central Africa (March 2003) it is indicated that Uganda's income from coffee has been reduced by about US$ 9,644,279 during the year 2001/2002 due to CWD. The extent to which this disease will impact on the coffee industry during implementation of the strategic plan for coffee exports has not been fully evaluated and therefore more research work is needed at both national and regional levels.

6.5 Capacity and Engineering Aspects

The proposals by Eurocafe S.A. for a 2,000 tons capacity for soluble coffee alongside another 3,000-ton capacity for decaffeinated coffee have not elaborated the basis of choice. However a number of assumptions were used to arrive at these figures for business and the technology for processing. In particular it was assumed that the 2000-ton production would find a market at a f.o.b. price of $ 9/Kg of soluble coffee using spray-drying technology. Calculations for investment costs of machinery were based on ruling prices and depreciation over 6 years. The raw material costs at $2,500 per metric ton converting at the rate of 2.5 tons per ton of soluble, which is equal to 5,000 tons of green coffee, did not provide for variation in coffee farmers prices which are known to vary widely as shown by the UCDA reports.

Similarly costs of energy and utilities were assumed to be fixed a position which could easily lead to under estimation of processing costs. Needless to say, therefore, that a

much more detailed analysis would be necessary before developing profitability forecast. A review of the soluble coffee world prices for the period 1989 through to 2001 does not show any time when f.o.b. prices reached $9 per kg except in 1995 when the peak was $10.50. The fact that the structures in which the factories were to be installed have been sold means that completely new engineering plans and costs have to be worked out possibly necessitating dedicated/designed new buildings. It is therefore not possible to address the engineering aspects at this stage. The logical approach would have first to establish available reliable market size with clear specifications for the products followed by determination of the minimum economic factory unit which can pay back over a specified period of time.

Evidence available indicates that new entrants to the soluble coffee business have to face stiff competition from established multinational manufacturers and traders with known brand names. To overcome this huddle, new comers tend to go for private label partnerships in order to avoid the heavy capital investments in brand promotion and processing machinery.

In conclusion, therefore, the available information and analysis for the possibility and option of a soluble coffee manufacturing facility has revealed some key aspects which have not been adequately addressed in previous studies. So as to discern their impact and influence in determining pre-investment decisions these aspects must be addressed at a full feasibility level. In particular the following are considered to be critical:

- Determination of the products to be manufactured. As there are different types of soluble coffee and extracts it is important to decide on the product or products to be manufactured. There is evidence that different countries or market segments require either spray dried, freeze dried, agglomerates or flavoured soluble coffees. From an engineering point of view such products require a variety of equipment and technology. This notwithstanding, that some processes are common.
- From a marketing point of view the packaging and approach to the specific markets shall differ. The need for developing a 'private label' approach or any other alternative has not been explored. This approach could be more appropriate for penetrating Uganda's soluble coffee into the retail chain institutions, which are increasing in number and size in various consumer countries.
- Determination of the volume of the market potential in the selected countries of North Africa, Middle East, Southern Africa and the Far East. This is necessary and should include visits to conduct market surveys. Based on information acquired it shall be possible to determine the size of the manufacturing plant and other engineering aspects.
- Determine the most appropriate financing plan including equity and ownership. This issue will influence decision on the management structure to be adopted.
- Proxy analysis to determine the most sound investment in terms of location and market opportunities for the identified soluble coffee products.

6.6 Comparative Analysis of Uganda and other African Soluble coffee Producers

A statement of key issues affecting the soluble coffee project was made in the 1999 report.

The disadvantages for Uganda were highlighted as basically the long distance from harbours (Mombasa and Dar Es Salaam) thus having to meet higher transport costs and possibly exposing the coffee to risks of quality loss or damage in transit. The other disadvantage is the absence of a domestic market to take a commercial share of the products both internally or within the region. The third disadvantage is the absence of a thriving modern industrial activity to offer complementary services such as machinery, repairs, printing and packaging and transport. The fourth disadvantage is the high costs of energy (electricity, fuels) and other supportive infrastructure utilities (roads and modern information technologies) and water. Marketing issues have not yet been covered.

Advantages include the better quality of Robusta coffee which avails good but comparatively low priced coffee in the lower grades for conversion to soluble. Potential for growing other crops which would be used in the manufacture of soluble coffee has not been studied. This concept could lead to development of new soluble coffee blends with unique characters and tastes imparted by flavours and powders. This approach together with adoption of a modern technology of using multipurpose product lines such as instants, agglomerates and liqueurs could result with new images, products and market segments in which the over 30 year old TANICA cannot supply because of technology limitations.

7 EVALUATION OF OPTIONS FOR SETTING UP A SOLUBLE COFFEE PLANT

7.1 Factors Considered in Determining Investments in a Soluble Coffee Factory

During the interviews, there was no indication of the size of the factory required. However realising that there are critical factors which influence investments, the approach used is to analyse factors which include:- i) Raw materials availability, ii) Investment promotion, iii) availability of captive markets, iv) logistics and v) technology and capacity.

7.1.1 Raw Materials Availability

Uganda has the unique advantage of producing both Robusta and Arabica coffee, in adequate amounts and of good quality. In 2001/02, Robusta coffee exports totaled 2.716 million bags (60 kg) of which 561,165 bags were Screen 12 and below (Screen 12, BHP 1199, BHP 1013, Black beans and others). Their average price was US$0.48/kg. During the same year, exports of Arabica were 430,426 bags of which Bugisu grade B and below totaled 264,212 bags at an average price of US$1.38/kg, currently at US$1.07/kg.

These raw materials are available for manufacture as in any case some of this would be held back under ICC Resolution 407 of 2002. Robusta availability totals 33,670 MT while Arabica availability totals 15,853 MT. If all Robusta was to be used for processing, it will require 14,430 MT of Arabica (70% Robusta and 30% Arabica) giving a total of 48,100 MT. This is capable of yielding 18,500 MT of soluble coffee (at a conversion factor of 2.6kg green: 1kg soluble). It can therefore be argued that utilising low grades Uganda has a potential of 18,500-20,000 MT of soluble coffee.

7.1.2 Availability of a Captive Competitive Market

Availability of markets is possibly the most constraining factor in investing in a soluble coffee factory in Uganda. In analysing the market we have to consider the domestic market, regional markets like EAC, COMESA and other Africa countries which have shown interest in Uganda coffee.

Domestic Market/East African Community

It is estimated Uganda's total domestic consumption of coffee is 80,000 – 100,000 bags (60kg) or 4,800 MT – 6,000 MT most of which is home roasted/ground. Recent developments in commercial roasting/grinding are about 1,000MT of

installed capacity but utilisation is about 100 MT while the newly introduced instant coffee packaging has hardly penetrated the market. Imports in 2001 were given as 20 MT at US$2.55/kg. With the introduced local packaging the total consumption of instant coffee is possibly between 25-50 MT.
Other East African countries even consume less than Uganda with Kenya at 1,380 MT (ground/roast and soluble) and Tanzania at 1,020 MT of which about 100 MT is instant locally produced plus 26 MT imported. In 2001, Kenya imported 405 MT of soluble coffee from Tanzania and Ivory Coast. Considering Kenya and Uganda markets, the potential is about 450-500MT. Tanzania is already producing soluble coffee so it will not give a good market outlet.

COMESA Region and Other African Countries

In 2001, total African imports were about 6,300 MT with the COMESA region accounting for about 1,500 MT. Major importers are in West and North Africa accounting for over 3000 MT but the market is saturated as there are factories in Morocco and Cote d'Ivoire which in 2001 exported about 11,000 MT. In the Southern African region, S. Africa has a factory and exports over 900MT (2001) so basically in the African region, Uganda can possibly capture a market of 500-1,000 MT but will face competition from existing factories.

Countries which have expressed interest in Uganda coffee

Several countries have shown some interest in Ugandan coffee or in instant coffee processing (Algeria, Egypt, Morocco, Tunisia, Russian Federation, Poland, Spain, Saudi Arabia, S. Africa, Japan and China). Their combined net imports rose from 52,250 MT in 1995 to 111,217 MT in 2001, an increase of 112% or a 19% annual growth rate. The Russian Federation is the fastest growing market, with imports increasing from 27,558MT in 1995 to 103,936 MT an increase of 277% or 46% per annum. These markets are discussed in details in section 5.2. With aggressive market promotion, Uganda can possibly penetrate these markets and possibly get a market of 1000-2000MT per annum.

7.1.3 Technology and Capacity

The analysis of lower priced grades of Robusta and Arabica show that Uganda has the potential to produce 18,000 – 20,000 MT from these raw materials. However, when constraints in marketing are incorporated, it is noted that Uganda can only manage 2,000-3,000MT and this, with very active promotion both domestically and internationally.

The required investment for this type of operation is between US$10-15million and the production costs can vary from US$3.5-4.0/kg. Tanzania is currently producing at US$6.2/kg and export at US$5.5/kg however its domestic

consumption is about US$9.50/kg which absorbs most of foreign exchange losses. The calculated Ugandan packed instant coffee is about US$15/kg (calculated from Starcafe's retail price). If Uganda could promote a domestic market of 150-300 MT this would almost make the project attractive and offset considerable costs.

7.2 Proxy analysis of prices of processed instant coffee from Uganda using various options and comparison with world price

7.2.1 Coffee/Raw Material Prices

In the last decade the highest price realised by Uganda robustas was US$2.99/kg (Nov. 1994) and the lowest was US$0.352/kg (Feb. 2002). The annual average price was about US$1.32/kg and the highest was US$2.64/kg (1995). During the same period the highest world Robusta group price was US$2.76/kg (1995) and the lowest US$0.66/kg (2002). Uganda's arabicas realized the highest price of US$4.56/kg (Nov. 1994) and lowest at US$0.92/kg (Nov. 2001). During the period the annual average was US$2.02/kg with the highest annual average of US$3.50/kg (1997). In 1997 the related Arabica world prices were Colombian milds (US$4.36/kg), other milds (US$4.16/kg), Brazilian and hard arabicas (US$3.67/kg), Kenyan arabicas (US$4.06/kg) and Tanzanian Arabica (US$2.61/kg).

The prices of the two coffee are important, as manufacturers prefer blending to get the required flavours. As discussed above the premium market segment requires high proportions of arabicas. Uganda produces arabicas and these can be blended with robustas or can buy the highly priced Kenyan Arabica milds to get a distinct flavour. It has also to be noted that the Robusta producing countries only produce about 10-15% of soluble coffee and the rest is mostly from other milds, Brazilian naturals and blended types.

7.2.2 Options for Proxy Analysis in Processed Ugandan Instant Coffee

In analysing the options various assumptions have to be made-:

1. The conversion factor for green beans to instant coffee is 1:2.6 (i.e. 1kg of instant coffee requires 2.6 kg of green beans)
2. Current prices are Screen 12 at US$0.57/kg and Bugs B at US$1.18/kg.
3. In the absence of calculated manufacturing costs, they are assumed at 75% of materials costs for spray-dried coffee
4. Freight and insurance are assumed at 20% of manufactured coffee prices
5. Taxes are assumed at 25% over C.I.F prices
6. For blending purposes it is assumed that the blending will include 30% of arabicas at current prices.

7.2.3 Tentative Costs of Processing Option

This option includes two sub-options

a. Current Robusta price i.e. Screen 18 (US$0.79/kg) and Screen 12 (US$0.57/kg) + 75% of coffee price as manufacturing costs.

b. Calculation in sub-section (a) with 30% Arabica for blending calculated at current (US$1.18/kg)

The tentative calculation is as shown in Table 21

	Current (US$)	Conversion x 2.6	Spray (75%)	Total	Remarks
a_1	0.792	2.06	1.54	3.6	R at current
b_1	0.75	1.95	1.46	3.4	R+A at current

(Source: D & T Analysis)

Table 23: Tentative costs of Processing Instant Coffee (US$/kg)

a1= Robusta only (screen 18)

b1= 70% Robusta (screen 12) + 30% Bugisu (Bugisu B)

It is noted using Robusta at current price with 75% manufacturing (a_1) gives a tentative f.o.b. cost of US$3.6/kg but when blended with Arabica at 30% (b_1) at current prices costs using Bugisu B and Screen 12 costs are US$ 3.4/kg costs.

7.2.4 Costs of Processing + Insurance + Freight (C.I.F Option)

This option assumes insurance and freight at 20% of costs of processing costs and when these are added they are as shown in table 22 below.

Processing Option	US$/Kg	Ins. + Freight	Total C.I.F
Robusta at current price (a1)	3.6	0.72	4.32
Robusta (70%) + Arabica (30%) at current (1)	3.4	0.68	4.08

(Source: D & T Analysis)
Table 24: Tentative C.I.F Prices of Instant Coffee

It is noted that the lowest C.I.F price is US$4.32/kg of Robusta coffee only at current price and spray-dried. Blending with 30% Arabica at current prices gives a C.I.F price of US$4.08/kg.

7.2.5 C.I.F Price plus Internal Taxes/Tariffs

Many consuming countries levy taxes on processed coffee to protect local manufacturers. In the analysis below internal taxes are assumed at 25% above C.I.F prices as shown in Table 23. However as noted in Section 5.6 tariffs have been on decline and this favours the exporters. The table below shows prices inclusive of taxes.

Processing Options	C.I.F Price	Taxes at 25%	Price
Robusta at Current Prices	4.32	1.08	5.4
Robusta/Arabica blend at current price	4.08	1.02	5.1

(Source: D & T Analysis)
Table 25: Tentative Prices of Instant Coffee with Internal Taxes at 25%

With inclusion of internal taxes the Robusta only option reaches a price of US$5.4/kg. Blended instant coffee at current prices is US$5.1/kg.

7.2.6 Comparative analysis of Uganda Instant Coffee Prices in International Markets

Based on the above proxy price calculation three comparisons will be made:

a. Processing costs against export costs
b. C.I.F prices against import costs
c. C.I.F prices plus taxes against retail prices

Average prices for freeze and spray dried coffee will be used.

7.2.7 Processing costs vis-à-vis Export Costs

The calculations will be based on current prices, as the historic high prices would not justify any processing. The prices used in Table 24.

- Robusta only US$4.32/kg
- Robusta/Arabica blend US$ 4.08/kg

	Robusta only		Robusta/Arabica blend	
Uganda	US$4.32/kg	Difference	US$4.08/kg	Difference
World Average	4.6	+0.28	4.6	0.52
Leading 19 exporters (87%)	5.1	+0.78	5.1	1.02
Brazil	3.2	-1.2	3.2	-0.88
Germany	7.2	+2.88	7.2	3.12
France	6.7	+2.38	6.7	+2.62
Cote d'Ivoire	4.9	+0.58	4.9	+0.82
Morocco	6.2	+1.88	6.2	+2.12
S. Africa	2.8	-1.54	2.8	-1.26

(Source: D & T Analysis)
Table 26: Uganda Tentative Prices Compared to Export Prices (2001)

It is noted that using the two options, the Uganda C.I.F prices are competitive except for cases of Brazil and S. Africa.

7.2.8 C.I.F Prices vis-à-vis World Import Prices

World imports in 2001 were 44,281 MT valued at US$1.9 billion (US$4,315/MT). The Russian Federation was the major importer accounting for 24% of imports but its import price of US$ 2,069/MT was only 48% of average world price implying imports of very cheap spray-dried coffee. Ugandan spray dried coffee prices are used.

- Robusta only US$4.32/kg
- Robust/Arabica blend US$ 4.08/kg

	Robusta Only		Robusta/Arabica blend	
Uganda	US$4.32/kg		US$4.08/kg	
World Average	4.3	0	4.3	+0.22
African Average	5.8	+1.48	5.8	+1.72
Middle East Average	8.5	+4.18	8.5	+4.42
USA	4.9	+0.58	4.9	+0.82
Germany	4.5	+0.18	4.5	+0.42
France	6.6	+2.28	6.6	+2.52
Czech Republic	6.1	+1.78	6.1	+2.02
China	4.3	0	4.3	+0.22
Netherlands	6.3	+1.98	6.3	+2.22
Senegal	4.9	+0.58	4.9	+0.82
Tunisia	5.1	+0.78	5.1	+1.02
S. Africa	4.9	+0.58	4.9	+0.82
Kenya	4.1	-0.18	4.1	+0.02
Egypt	6.3	+1.8	6.3	+2.22
Turkey	7.8	+3.48	7.8	+3.72
Saudi Arabia	10.9	+6.58	10.9	+6.82
Omani	6.9	+2.58	6.9	+2.82
Israel	9.8	+5.48	9.8	+5.62

(Source: D & T Analysis)
Table 27: Comparison of Spray-dried Uganda coffee with others in Import Prices

The table shows that using Robusta only, Uganda would be able to export to most countries with higher gains in Middle East and Europe with blended coffee gains can be realised in all countries. Some of the price variations in different countries are due to the use of additives and flavours, which reduce the actual amount of coffee, utilised in blending the final products. The actual composition of the soluble coffee product may not be publicly known.

7.2.9 Comparison of Ugandan Prices at Retail Level

The 2001 retail prices averages at US$25.8/kg with USA at US$25.6/kg, UK at US$26.1 and Japan (2000) at US$28.4/kg. Comparing these prices with C.I.F prices plus an internal tax shows that Uganda can export to most countries. Even if taxes were 100% of C.I.F price the product will still be competitive. However, it has to be noted that, due to various barriers this retail segment is the most difficult to enter.

7.2.10 Comparison of Proxy Prices with Import Prices of some Countries where Uganda has shown interest

Uganda has shown interest in promoting coffee in N. Africa notably Algeria and Egypt. Spain and S. Africa have shown interest in processing coffee in Uganda and Uganda has a joint venture in roast coffee with China. Other markets may be Middle East, Japan and emerging markets of Eastern Europe e.g. Russian Federation and Holland. An analysis of these markets shows that they have net imports of soluble coffee amounting to 109,818 MT about 25% of world imports. Most of it is accounted for by the Russian Federation as shown in table 26 below. Import prices in these countries have been on the decrease. However, except for the Russian Federation which imports at a very low price of US$2.1/kg as shown in table 5.7 all other prices are comparable to proxy prices calculated for Uganda and Uganda can export to these countries with aggressive market promotion.

The table below shows imports of soluble coffee by countries, which have expressed interest in Uganda coffee.

	1995	1996	1997	1998	1999	2000	2001
Algeria	49	1	5	7	1	-2	23
Egypt	281	813	2449	350	415	354	336
Morocco	-773	-1,276	-1,767	-1,959	-1,585	-1,871	-1,664
Tunisia	334	338	415	396	451	526	656
Russian Federation	27,558	14,778	49,302	62,120	54,477	65,412	103,938
Poland	158	2,187	2,674	398	-1,771	-2,618	-2,903
Spain	-542	-2,006	-1,511	-1,646	-1,783	-4,744	-12,678
S. Arabia	856	1,013	1,283	1,170	660	1,142	1,531
S. Africa	-484	-764	-533	-848	-739	0	-242
Japan	22,925	24,686	25,628	20,473	20,691	20,322	20,821
China	1,888	-407	-777	-3,967	-2,802	-796	-1,303

(Source: Calculated from FAO Database 2002)

Table 28: Net Imports of Soluble Coffee in some countries (MT)

The table below shows the prices of soluble coffee imported by countries, which have shown interest in Uganda coffee.

	1995	1996	1997	1998	1999	2000	2001
Algeria	6.4	3	13	8.9	7	23.5	4.3
Egypt	8.3	2.6	3.2	12.1	6.5	7.8	6.3
Morocco	14.7	10.8	16.9	14.8	17.2	13.2	11.3
Tunisia	11.8	11	8.5	8.9	8.2	6.5	5.1
R. Federation	6.45	5.4	4.1	3	2.14	2.14	2.1
Poland	8	7.8	7.5	6.9	5.4	4.3	4
Spain	9.9	8.3	5.8	6.9	6.3	5.6	4.2
S. Arabia	10.9	14.8	11.7	14.2	12.4	13.2	10.9
S. Africa	9.39	8.28	7.83	8.4	9.3	8.32	4.9
Japan	6.4	5.6	5	6.09	5.2	4.79	4.4
China	8.25	7.03	6.79	6.13	5.82	4.42	4.32

(Source: Calculated from FAO Database 2002)

Table 29: Import Prices of soluble coffee in specified countries (US$/kg)

7.3 Evaluation of Potential Location of Processing Plant

The availability of markets for soluble coffee is the major criteria of determining location for a plant. Almost 65% of the export business is concentrated in major consuming countries mostly in Europe and North America. However, some producing countries have penetrated the market notably Brazil, Equador, India, Malaysia, Colombia, Mexico, Cote d'Ivoire. In determining the location we have to consider these successful countries as well as re-exporters and consumers.

Issues Influencing Local Processing by Producers/Exporters

Several points can be noted about these producers:-

a. They are among the world's large producers implying that they can guarantee raw materials supply for their processing industries.
b. All except Cote d'Ivoire produce mostly arabicas and it has to be noted that of the 63% of soluble coffee imported from producing countries to USA, robustas account for less than 1% mostly from Vietnam.
c. These countries have developed a considerable domestic market (Brazil 30%, Equador 24%, India19%, Colombia 12% and Mexico 18% of total coffee supply). Only Cote d'Ivoire has very low domestic market consumption and its success may have been influenced by markets in France and EU notably Greece.
d. The North American market has influenced the market for most of the producers.
e. All have infrastructural logistics suitable for export of large volumes of coffee especially seaports.
f. Comparatively well developed industrial-wise to support coffee processing e.g. packaging industries.
g. Can enjoy economies of scale in processing.

Some like Brazil, Colombia and Mexico have funded large promotion campaigns in international markets.

Considering the Ugandan situation in relation to these countries, we find that except for adequate availability of both robustas and arabicas it has no other favourable attributes similar to other producers/exporters.

Issues influencing Processing in Consuming Countries

h. Major coffee consuming countries in Europe account for 54% of consumption, United States/Canada for 27% and Japan for 8% of world's total consumption, but consumption has remained stagnant at 25million bags per year for the last decade.
i. Soluble coffee manufacture in consuming countries is for the large domestic markets and for re-exports.
j. Major re-exporters are Germany, Spain, UK, France, Switzerland, Netherlands and Belgium which enjoy the free-trade status of the European Union; USA/Canada which re-export to other countries in the Pacific region, China, Singapore, Malaysia and China which exploit the large Far East market.
k. In the recent years, markets for soluble coffee have emerged in former communist countries e.g. Russian Federation, Poland, Czech Republic Hungary and China which accounts for almost one third of the world imports of soluble coffee. Other markets have developed in Japan, Korea Republic, Australia and Malaysia, which account for 10% of imports. These markets are growing and are not fully exploited by multinationals and could be a destination of Uganda exports.

l. In most of Europe there is excess capacity in processing and many countries are not ready to invest in new facilities.
m. Free-trade blocks like EU favour domestic processors in terms of duties and tariffs and new entrants may not be competitive.
n. Multinationals control most of the markets utilising high investments in promoting their brands and discriminating against soluble coffee from origin.
o. Recent trends in investments in freeze-drying technology to produce premium brands of soluble coffee. This discriminates against spray-dried coffee from producing countries.

As a conclusion, it can be said that the existence of large markets, availability of processing capacity, free-trade blocks and heavy promotion by multinationals all mitigate against direct entry into the lucrative retailing segment of the market. A new entrant into the market would need to go into joint venture with international soluble coffee processor/retailer who can provide the market infrastructure under its brand name albeit at the expense of losing the origin identity.

Packaging Technology and Costs

The packaging technology and material availability is currently rudimentary and may be unsuitable for packaging soluble coffee. Normally investment in packaging industries requires a large consumer base to serve a multipurpose consumer demand.

This is essential in maintaining low or affordable costs to avoid overpricing of the product. The existing soluble coffee manufacture has to import cans and barrier proof paper from outside Uganda and this factor has to be included in the pricing of soluble coffee for the domestic market.

In comparison most consuming countries have very large and sophisticated packaging industries which can easily and quite cheaply serve the soluble coffee packaging needs. These include labeling for advertising purposes and image projection as well as protecting the product and giving it good shelf life.
It is for the above reason that the consultants would recommend a joint venture with a partner in a consuming country who would be technically involved in procuring suitable packaging which is favourable for the consuming country's market.

Manufacturers of export products have often been importing pre-printed packaging containers such as paper bags, jars and cans in order to minimise costs and meet quality specifications of consumers. For purposes of entering the market Uganda's soluble coffee may have to use the "private label" concept in a joint venture with marketers in targeted consuming countries.

7.3.1 SWOT Analysis of Uganda Soluble Coffee Manufacture in relation to location of the plant

Based on discussions with key informants and data collected and analysed, a SWOT (Strength, Weakness Opportunity and Threats) analysis of the proposed Uganda Soluble Coffee Manufacture has been undertaken as shown in Figure 1. From the SWOT analysis, it is shown that manufacture of soluble coffee in Uganda has various strengths i.e. strong government support, a core transitioning industry, availability of adequate raw materials and a suitable investment environment, which favour the projects. However, the weaknesses indicate that the project may not be undertaken immediately due to the lack of a fallback domestic market, no clear definition of ownership amongst others. However, these can be sorted out in the short-term. Opportunities exist or can be created for market penetration but this would require heavy spending in promotion for penetrating various market segments, which require time and a product to be promoted. An opportunity has been created by using Tanzanian processed Uganda coffee.

The major threats are the availability and dynamics of the international market characterised by changing consumer preferences necessitating change in technology, excess capacity acting as a barrier to new entrants, declining prices, dominance by large processors/retailers with own brands and competition by existing exporters from Africa and elsewhere.

Strength	Weaknesses	Opportunities	Threats
- Strong Government support at all levels o Programme for Modernisation of Agriculture (PMA) o Strategic Export Promotion (SEP) o Value-addition at all levels o Quality improvement - Availability of adequate and quality Robusta and Arabica coffee - Fits very well in investment code • Transitioning industry • Potential for technology transfer • Expertise development • Employment creation - Potential to develop coffee consumption culture	- Low consumption, no domestic market as fall back situation - High investment costs even for cheap spray-dried systems - Country landlocked, increasing costs and lowering competitiveness. - Supporting industries especially packaging not well developed. - Size cannot enjoy economies of scale to lower production costs. - Environmental problems due to huge amounts of grounds and other products - Capital limitation may not allow utilisation of full	- Opportunities in increasing market through up-coming market chains and packaging in appropriate packs. - Potential for creating and capturing markets in free-trade areas of East African Community and COMESA region. - With aggressive promotion to create potential to enter other African markets, Middle East, emerging markets of Eastern Europe and Asia. - Potential to utilise low quality beans to meet specifications set by ICC Resolution 407.	- Consumer preference changes e.g. from soluble to roast and from spray-dried to premium freeze-dried. - Surpluses and excess capacity in consuming countries mitigating against new entrants. - Collapse in export prices as happened between 1995 and 2001 falling from US$9/kg to US$4.6/kg. - Increases in raw materials prices making processed coffee uncompetitive to green beans exports. - Competition in EAC by Tanzania, West and North Africa by Cote d'Ivoire and Morocco and Southern Africa by S. Africa which are

7.3.3 Quality Assurance

The world market has now become very sensitive to quality assurance standards due to consumer awareness and demand. In view of this fact any existing or new investor is required to install a quality assurance system with verifiable benchmarks and documentation covering such recognised systems as ISO, HACCP, EUREPGAP, and FAIR TRADE.

To this end any factory design must include the specifications required by the consuming countries for the quality assurance.

7.4 Options for Investing in Value-addition processing of Coffee

As suggested in the SWOT analysis, penetrating the international market is the single most important constraint in development of value-addition in coffee. Due to limitations of massive promotion finances our analysis shows that Uganda can use a seven pronged cost-effective approach: -

(i) Investment Planning.
(ii) Determining the product and factory size.
(iii) Creating foreign awareness of the superiority of Ugandan coffee through the gourmet coffee segment.
(iv) Rapid development of domestic market through roasted and soluble coffee.
(v) Foreign roasting and retailing of Ugandan coffee.
(vi) Promotion of Ugandan own label instant coffee.
(vii) Promotion of processing with specialist packer. These options are discussed below.

7.4.1 Investment Planning

Following the cessation of the Uganda Coffee Marketing Board and sale of its assets a void was created and no specific body/institution assumed the role of investing in a soluble coffee manufacturing venture.

The formation of UCDA and its mandate may include the responsibility of pursuing this project. Nevertheless, it is advised that mechanisms be developed for the establishment of a business organisation, a company that should assume ownership of the project and provide a development plant/strategy.

The company should be incorporated in Uganda and/or in a major targeted consumer country. Equity options are:

(i) Uganda Government through UCDA
(ii) Local stakeholders such as UCRA, UFA, UCTF

(iii) (a)+ (b) plus foreign investor in a consuming country. He should also be the principal marketing agent.

The equity ratios should be negotiated between the interested parties. A possible facilitator would be the Uganda Investment Authority.

7.4.2 Suggested Product and Factory Size

Product: Considering the noted gradual shift from spray dried to freeze dried soluble coffees in the major markets it is suggested that the first phase of investment should be the minimum commercially viable 7,150 kgs/day green coffee capacity producing 3,000 kgs of soluble instant coffee provider. The design should include provision for extension to install both freeze drying unit and agglomeration unit in future. The capital outlay should be EURO 8 million.

7.4.3 Creating foreign awareness of the superiority of Ugandan coffee

The days of promoting coffee as just another Robusta coffee are gone and Uganda coffee has to be promoted as a **'superior quality brand with emphasis of its uniqueness'**. Uganda has made considerable headway in various fora notably the Sino-Ugandan coffee venture, Seber Elgon Cooperative Union – Denmark venture Bugisu – Australian contact, joint-venture attempts with Spain/S. Africa (SEDA-ICONACAFE) amongst others. Ugandan Trade delegations to North Africa (Algeria, Egypt) and to the Speciality Coffee Conference in the USA as well as the promotion of coffee by H.E the President to various countries have started to bear fruit with various enquiries.

Domestically, the promotion by East African Fine Coffees Association (EAFCA) of cupping contests and sales by Internet, the holding of Uganda coffee week/conferences and exhibition and the promotion of organic coffee growing are steps towards creating awareness. Uganda has a unique opportunity in promoting its unique coffee when it holds the 3rd International IFOAM Organic coffee conference in April 2004 as it can exhibit all its coffee products.

Creating awareness to the international coffee trade community on Uganda's huge production potential and availability of high quality Robusta and Arabica coffee will not only promote overall sales of green beans but also promote interest in value-addition in roasting and soluble coffee production. However, it has to be noted that promotion is not a one shot affair but a continuous process with follow-up on contacts. This is possibly a major value-addition option than all others.