Rwenzori Region

Agriculture Sector Investment Profile

2020

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Rwenzori Region
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Acknowledgements

The preparation of the Rwenzori region investment profiles was commissioned by Uganda Investment Authority (UIA) in collaboration with Operation Wealth Creation (OWC) and the National Planning Authority (NPA), with the financial and technical support of the United Nations Resident Coordinator's Office (RCO) in Uganda.

The profiles were prepared with the technical support of a team of consultants from Kisa and Associates led by Oscar Daniel Mwesigwa and Paul Kalumba, UIA Technical Team led by Sheila K Mugyenzi and Martin Muhangi and Simon Peter Nsereko of (RCO) provided the overall guidance. The Technical Team was also composed of Rita Nabateregga (UIA), Yvonne Munabi (UIA) and Derek Watima (OWC) who provided valuable support in providing technical input and coordination of the process. The team was under the overall leadership and direction of H.E. Rosa Malango, the UN Resident Coordinator and Designated Official for Security in Uganda and Mr. Lawrence Byensi, the Acting Director General of UIA.

The preparation process also benefited from the useful insights and input provided by respondents from the district technical and political leaders as well as private sector actors in the Rwenzori region.

Acronyms

AASPs	-	Agricultural Advisory Service Providers
ACF	-	Agricultural Credit Facility
ASSP	-	Agriculture Sector Strategic Plan
ATAAS	-	Agricultural Technology and Agribusiness Advisory Services
BFP	-	Budget Framework Paper
CAADP	-	Comprehensive Africa Agriculture Development Programme
CABI	-	Commonwealth Agricultural Bureaux International
CDO	-	Cotton Development Organization
COCTU	-	Coordinating Office for Control of Trypanosomiasis In Uganda
COMESA	-	Common Market For Eastern and Southern Africa
CRGS	-	Competitive Research Grants Scheme
DAP	-	Draft Animal Power
DDA	-	Dairy Development Authority
DP	-	Development Partners
DPC	-	Document Processing Centre
DSCR	-	Debt-Service Coverage Ratio
EAC	-	East African Community
EBA	-	European Banking Authority
EBIT	-	Earnings Before Interest and Taxes
EBITDA	-	Earnings Before Interest, Taxes, Depreciation, and Amortization
EU	-	European Union
FY	-	Financial Year
GAP	-	Good Agricultural Practices
GHG	-	Green House Gas
GM	-	Genetically-Modified
GMO	-	Genetically-Modified Organisms
GoU /DP	-	Government of Uganda / Development Partners
HDI	-	Human Development Index
IC	-	Investment Company
ICT	-	Information and Communications Technology
IRR	-	Internal Rate of Return
KM	-	Kilometres
LG	-	Local Governments

MAAIF	-	Ministry of Agriculture, Animal Industry and Fisheries
MDAs	-	Ministries, Departments and Agencies
MoFPED	-	Ministry of Finance, Planning and Economic Development
MoWE	-	Ministry of Water and Environment
MT	-	Metric Tonne
NAADS	-	National Agricultural Advisory Services
NAGRC&DB	-	National Genetic Resource Centre and Data Bank
NAP	-	National Adaption Plan for Agriculture Sector
NARO	-	National Agricultural Research Organization
NARS	-	National Agricultural Research System
NDP	-	National Development Plan
NGOs	-	Non-Governmental Organisations
OPEX	-	Operational Expenditure
OSBPS	-	One-Stop Border Posts
OWC	-	Operation Wealth Creation
RFSC	-	Regional Farm Service Center
SPS	-	Sanitary and Phytosanitary
TPM	-	Top Policy Management
UAIS		Uganda Agriculture Insurance Scheme
UCDA	-	Uganda Coffee Development Authority
UEPB	-	Uganda Export Promotion Board
UGACOF	-	Uganda Coffee Federation
UGADEN	-	Uganda Agroforestry Development Network
UGX	-	Ugandan Shilling
ULGA	-	Uganda Local Governments' Association
UN	-	United Nations
UNBS	-	Uganda National Bureau of Standards
URSB	-	Uganda Registration Services Bureau
URA	-	Uganda Revenue Authority
USDA	-	United States Department of Agriculture
US$	-	United States Dollars
ZARDI	-	Zonal Agricultural Research and Development Institute

01

Executive summary

1.0 Executive summary

The Agriculture sector within the Rwenzori region is one of the gateways to a full realization of ... and exploitation of the region's potential and to improve the quality of life of its inhabitants. There is a growing need to accelerate production of priority commodity value chains such as coffee, cotton, cocoa, maize and banana value chains in order to pursue commercial agriculture via agro-processing and development of product value chains to develop the industrial base of the region. The country's industrialisation is designed on the development of product-value chains which link investors, entrepreneurs to out-grower farmers to promote agro-processsing for value addition.

The achievement of this socio-economic transformation requires collective effort in the building of strong traceability systems and linkages between farmers, producers and manufacturers to guarantee product quality and standards, to secure and safe guard local and international markets, an increased volume of both public and private sector investment in the key commodity value chains within the Rwenzori region and a deliberate policy shift from government, especially in the direction of development of productive value chains.

It is on this basis that the Uganda Investment Authority together with United Nations Resident Coordinator's Office have taken lead in the development of the Agriculture sector investment profile to inform potential investors of the available sustainable investment opportunities in order to exploit the region's potential and promote socio-economic transformation in the region in support of the County's strategy of implementing private sector-led economic interventions, address unemployment and pave the way for Local Governments to generate their own revenue in order to deliver decentralized services to the people within the region.

The investment profile for the agriculture sector draws on extensive literature review as well as qualitative interviews with key informants to describe the investment opportunities in agriculture within the Rwenzori region with a focus on five key commodity value chains namely coffee, cocoa, cotton, maize and bananas. The profile also details some of the environmental and social considerations, policy legal and institutional frameworks that need to be taken into account. The profile also provides details on the enabling environment, promising production and market prospects across the different commodity value chains.

The field consultations revealed five value chains that present enormous potential for investment as well as employment potential across the various districts within the region. **The table summarises the value chains per district.**

No.	Agriculture	Kyenjojo	Kyegegwa	Kamwenge	Kasese	Bundibugyo	Ntoroko	Kabarole	Bunyangagwa
1.	Coffee	✓	✓	✓	✓	✓	✓	✓	✗
2.	Cocoa	✗	✗	✗	✓	✓	✓	✓	✗
3.	Cotton	✗	✗	✗	✓	✗	✗	✗	✗
4.	Maize	✓	✓	✓	✓	✗	✗	✗	✓
5.	Matooke	✓	✓	✗	✓	✗	✗	✗	✓

The financial models developed show the cashflows, rate of return for investments, break-even and sensitivity analysis, and the internal rate of return for an investor looking to invest within the respective value chains in the Rwenzori region. The returns derived are considered acceptable to attract both local and foreign investors into the region. Moreover, there are several government programs to incentivise investors within the agriculture value chain in the Rwenzori region.

02

Introduction

2.0 Introduction

2.1 Background to the assignment

The Rwenzori region is a border region with the Democratic Republic of Congo found in mid-Western Uganda and it is comprised of nine districts, namely, Kabarole, Kasese, Bundibugyo, Ntoroko, Kyenjojo, Kyegegwa, Bunyangabu, Kamwenge and Fort portal municipality. It has a population growth rate of 3% with approximately three million people and over 320,000 households. The Rwenzori region is endowed with diversified riches in natural resources (fertile land, minerals, forestry, wildlife, and energy as well as being contiguous to 5 countries of the Great Lakes region (Democratic Republic of Congo, Rwanda, Burundi, Tanzania and Zambia , providing significant potential for development, regional cooperation and economic integration. This potential remains under-exploited due to several factors including, among others, poor physical and economic infrastructure, persistent insecurity exacerbated by the presence of armed groups and transnational organized crime and insufficient levels of foreign and domestic private investment in the region.

The government of Uganda is desirous to transform the region from conflict to an economic zone by fully exploiting the region's economic potential in order to improve the quality of life of its people. UN in Uganda has supported the Government of Uganda to prepare evidence-informed promotional materials for investment in Rwenzori region. It is envisaged that this will contribute to the attraction of sustainable investments to exploit the region's potential and promote socio-economic transformation in the region in support of the Country's strategy of implementing private sector-led economic interventions, tackling unemployment and paveing way for Local Governments to generate their own revenue in order to deliver decentralized services to the people.

2.2 Objectives and scope

The overall objective of the assignment is to generate evidence-informed and well-packaged investment profiles/bankable investment projects (including short videos) that will attract the interest of foreign and local private sector and stimulate private investment in Rwenzori region. The assignment focuses on five areas; agriculture (including agro- industrialization and farming); extractives and mineral beneficiation; tourism; regional trade and services; infrastructure (including energy) development, and; human capital (education and Health) development. The specific scope of this report covers the agricultural sector including agro-industrialisation and farming.

The specific objectives will include, inter alia, the following;

- To document the socio-economic characteristics of the region, including Government/Local Government investments such as infrastructure;
- To document investment opportunities and the level of investment that would be required for successful business at each level and return on investment, including capital investment requirements, source and supply of equipment and raw materials, demand and market analysis, breakeven analysis, by sector;
- Detailed financial models outlining the cash flows, profit and loss and balance sheet for at least five years with internal rate of return, return on investment and all indicators given for each project;
- To carry out an actor mapping, including on-going and planned major investments (both public and private , bearing in mind their linkage to potential investmentsn
- To document the enabling environment and incentives (political, legal, institutional, Economic, social;

- To document the necessary policy, legal and institutional support services that the government will need to put in place to fully exploit the potential;
- To document major strengths, weaknesses, opportunities and threats for each of the proposed projects and risk mitigation strategies;
- To carry out a sensitivity analysis on business case scenario (worst, normal and best-case with respect to changes in macroeconomic variable's/ environment;
- To document the available financing options for the projects and the costs for such financing;
- To document the human resource options, including whether or not there is local expertise to supervise and manage the identified projects, and;
- To propose tools to be used to monitor the returns on each investment project and suggestions on the most appropriate tools with reasons fully explained.

2.3 Methodology and approach

The approach was tailored to ensure appropriate coverage of scope of work outlined in the Terms of Reference and comprised the three phases below:

- Inception/planning phase mainly characterised by understanding the business environment, and documentary review;
- Execution and fieldwork characterised by field visits and consultations with a wide variety of stakeholders within the Rwenzori region, development of detailed financial models and environmental and stakeholder analysis, and;
- Reporting involving summarisation and compilation of the report.

The approach was consultative in nature to complement the document review and data analytics. Extensive field visits were conducted with various district leaders and investors within the Rwenzori region. The inception phase involved working closely with the Uganda Investment Authority (UIA, Operation Wealth Creation (OWC, agri-LED program and other pro poor projects currently being implemented in the region.

The developement of the investment profile for agriculture commenced, including detailed finance models to support the investment profiles.

2.4 Report format

The report is structured as follows:

Section 1: Executive Summary

Section 2: Introduction and Background to the Assignment

Section 3: Social and Economic Characteristics

Section 4: Situational Analysis

Section 5: Investment Memoranda

Section 6: Stakeholder Mapping

Section 7: Policy, Legal and Institutional Framework

Section 8: Ease of Doing Agribusiness in Uganda

Section 9: Necessary Policy, Legal and Institutional Support Services

Section 10: Financing Options

Section 11: Personnel Planning

Section 12: Social, Economic and Environmental Sustainable

Section 13: Pre- and Post- investment Support

Section 14: Risk Assessments

Section 15: Appendices

The report also includes appendices to provide more information on the content.

03

Social and economic characteristics

3.0 Social and economic characteristics

3.1 Social factors

Population growth

Rwenzori is a border region with the Democratic Republic of Congo found in mid-Western Uganda. The region is comprised of eight districts, namely Kabarole, Kasese, Bundibugyo, Ntoroko, Kyenjojo, Kyegegwa, Bunyangabu, Kamwenge and Fort Portal Municipality.

The region has a population of approximately three million people and the population is expected to grow at a rate of approximately 3%. The high population growth rate in the region is also potential for a large emerging consumer market and human resource that if leveraged can provide significant growth opportunities.[1] The disadvantage, however, with the growing population is that it could decrease land availability per capita for agricultural production, causing land fragmentation given the land use patterns and land degradation in densely-populated areas within the region given that land is in use every season without replenishing the soil nutrients.

Table 2.1 Population projections for 2019 for each district within the region

Rwenzori Region	Census Population Year	Mid-Year Population Projections				
	2019	2020	2021	2022	2023	2024
Bundibugyo	256,800	263,800	270,800	278,924	287,292	295,910
Kabarole	331,100	337,800	344,500	354,835	365,480	376,444
Kasese	776,100	793,200	810,400	834,712	859,753	885,546
Kamwenge	323,600	335,200	347,400	357,822	368,557	379,613
Kyenjojo	506,500	525,400	544,800	561,144	577,978	595,318
Kyegegwa	408,700	441,000	475,600	489,868	504,564	519,701
Ntoroko	74,500	76,000	77,700	80,031	82,432	84,905
Bunyangabu	190,700	195,100	199,500	205,485	211,650	217,999
Total	2,868,000	2,967,500	3,070,700	3,162,821	3,257,706	3,355,437

Source: Uganda Bureau of Statistics 2019 Statistical Abstract

Age distribution

Approximately 51.3 % of the region's population is individuals aged between 14-64 years. [2] This requires an expansion of social services within the region and creates an opportunity to absorb the growing youth population within the labour market. Age is an important factor as it determines the various needs and demands of the population.

1 Uganda Bureau of Statistics 2019 Statistical Abstract page 188
2 2016/2017 Uganda National Household Survey page 12

Ethnicity

The Rwenzori region is multi-ethnic and comprises of the Bakiga, Basongora, Bafumbira, indigenous Batooro, Batagwenda, Banyarwanda, Bakonzo, Bamba, Banyabindi.[3]

Education

The net enrollment ratio for Primary Schools in the region for the period 2016/17 was 73.4%; the net enrollment ratio for Secondary Schools was 23.8%. There are about 67.8% people aged 18 years and above who are literate within the region.[4] The region also has two universities namely Mountains of the Moon and Uganda Pentecostal University as well as a number of learning centres for other leading universities. Education is vital for ensuring a full and productive life to all individuals and to the realization of sustainable development.

3.2 Economic factors

Land use

In Rwenzori region, there are varied forms of land use namely: cash crop farming, subsistence crop farming and cattle rearing. In regard to cash crop farming all the districts within the region grow Robusta Coffee with the exception of Ntoroko and Bundibugyo, which grow Arabica Coffee, Bundibugyo grows Cocoa, Kyenjonjo and Kabarole - Tea, Kasese grows cotton and coffee. The Basongora of Kasese and Batuku of Ntoroko and Bundibugyo are mainly cattle keepers. These are economically viable undertakings that can be developed through agro-industrialisation as well as promote trade for both local and external markets.[5]

Natural resources

Rwenzori region has a variety of natural resources such as fertile volcanic soils, ample and reliable rainfall, water bodies, rich forest cover, mineral deposits ranging from copper and cobalt in Kasese, limestone in Kamwenge and Oil deposits in the Albertine region around Lake Albert. The discovery of oil and drilling has potential to stimulate infrastructure development and increase business volume in the region. The region also has huge tourism potential with some of the leading tourist destinations such as Queen Elizabeth, Mountain Rwenzori and various other national parks. The Rwenzori region is contiguous to five countries of the Great Lakes Region (Democratic Republic of Congo, Rwanda, Burundi, Tanzania and Zambia , providing significant potential for development, regional cooperation and integration.[6]

Existing infrastructure

Electricity/power generation potential

The region has great potential of developing electricity (power) given that Kasese district is the second largest supplier of hydro electric energy in Uganda after river Nile in Jinja with five hydroelectric power plants on rivers Mubuku, Nyamwamba, Nyamughasani and Lhubiriha with a combined production capacity of at least 30 megawatts as well as the Mpanga Power Station, the 18 megawatts (24,000 hp) mini hydroelectric power project. The production of hydroelectricity within the region has the potential to spur sustainable economic development as well as increasing supply of electricity for agro-processing, industrialization and other development programs.[7]

Road network

The region can be accessed through the various districts by road for instance Kamwenge District can be accessed from Kampala via Masaka-Nyakahita-Kazo-Ibanda-Fortportal Road or via Mityana-Mubende-Kyenjonjo-Rwamanja Refugee Settlement. The region can also be accessed through use of helicopters. The railway line through Kamwenge district is no longer functional but under consideration in Uganda vision 2040.Water transport can be introduced on Lake George connecting to Rubirizi and Kasese districts. [8]

3 Environment & Development Series 15 Third World Network page 5
4 2016/2017 Uganda National Household Survey pages 31- 35
5 Contextual Analysis of conflicts in the Rwenzori Region report page 19
6 Joint MFS II Evaluation; Civil Society Strengthening page 2
7 2015/16-2019/2020 Kasese District Development Plan page 48
8 2015/16-2019/2020 Kamwenge District Development Plan page 24

04

Situational analysis

4.0 Situational analysis

4.1 SWOT analysis

The SWOT analysis is based on the agricultural sector in the Rwenzori region as detailed in the table below.

SWOT analysis	
Strengths	**Weaknesses**
1. Government will support investment in Agriculture in the region. During the period 2012-2016, the budget allocated to the agricultural sector increased from UGX 378.9 billion in 2012 to UGX 484.7 billion in 2016.[6] 2. Special incentives such as companies engaged in agro-processing may enjoy a tax holiday on corporate income for ten years, a 50% initial allowance is available in respect of plant and machinery, which is increased to 75% if such assets are outside the areas of Kampala, Entebbe, Namanve, Jinja and Njeru, During the year a new industrial building or expansion to an existing one is put to use for the first time, 20% of the related cost is available as allowance, export incentives like income tax exemptions are provided for ten years for companies exporting at least 80% of finished consumer and capital goods.[7] 3. Fertile soils with great potential for agricultural production[8] 4. Cheap labour 5. The region's location at the centre of the Great Lakes region provides access to a vast regional market 6. Regular and ample rainfall within the region, for instance in the year 2018 Kasese district within the region had 100 rain days providing a conducive environment for agricultural production[9] 7. Water resources (Lakes and rivers) within the region such as river Mubuku in Kasese district which can be utilised for irrigation[10] 8. Area-based commodity planning has been adopted by the Government to increase agricultural production and productivity within the region[11] 9. Conducive business environment enhanced by supportive policy and legal frameworks at the national, regional and international level[12] 10. Good Institutional support in the areas of registration, licensing and regulation[13] 11. Improved access to agri-inputs and agri-finance[14] 12. Liberal trade policies of the country enabling the region to be competitive[15]	1. Mechanised agriculture in primary production and post-harvest handling is still low because of costs of mechanisation, limited awareness of the scope of mechanised agriculture among rural populations. Approximately 10% of farmers employ some form of mechanisation with 8% using Draft Animal Power (DAP) and another 2% using tractors resulting in low levels of agricultural production, productivity and value addition;[16] 2. Poor road infrastructure in the region resulting in high transaction costs;[17] 3. Inefficient agricultural market inputs; 4. Inefficient implementation and enforcement of quality control and regulatory frameworks;[18] 5. Poor agronomic practices that affect production;[19] 6. Limited access to credit facilities;[20] 7. Limited extension services due to very low extension staff to farmer ratio in the FY2018/19 ; the ratio of extension worker to farmer was 1:1,800 as opposed to the recommended of 1:50021; 8. Difficulties in meeting sanitary and phytosanitary standards to Europe and the United States[22] 9. A complicated and inefficient land tenure system and water rights issues affecting water for agricultural production[23] 10. Lack of irrigation infrastructure and limited use of fertiliser which make production vulnerable to variable rainfall and pests; 11. Lack of quality packaging capabilities; 12. Lack of storage facilities; 13. High freight costs; 14. Lack of all-weather feeder roads in rural areas 15. A complicated and inefficient land tenure system 16. Limited knowledge of modern agricultural production practices;

SWOT analysis	
Strengths	**Weaknesses**
	17. Lack of access to modern production technology' 18. Linkages between government ministries, departments and other sectors seems to suffer from a lack of coordination and harmonisation resulting in duplicated roles
Opportunities	**Threats**
1. Large emerging consumer market and readily available labour force within the region given that population is expected to grow at a rate of 3% if leveraged could provide significant opportunities for growth[24] 2. Opportunities in international markets through export promotion given that Agriculture contributes to a significant portion of exports as well as government export-led growth policies like trade liberalisation, abolition of export taxes.[25] 3. There are few companies engaged in agro-processing 4. The region has a high irrigation potential with a significant proportion of her surface area covered by water resources; 5. Growing local market for agro-manufactured products via the import replacement strategy[26]; 6. Market opportunities as a result of urbanisation at an annualised growth rate of 5.4 percent and a growing middle class that demands higher value-added agro-industrial products;[27] 7. Intra-continental markets exist where the region can ably market the agricultural products produced within the region (EAC, COMESA) 8. The discovery of oil within the region provides an opportunity for increased investment in agriculture[28]	1. Extreme climatic events such as rainstorms, heat waves, droughts and floods are recorded in the region with increasing frequency which have significant implications for natural resources management, water resources, the sustainability of infrastructure and agricultural crop production;[29] 2. Overdependence on rain-fed agriculture;[30] 3. Multiple and contradictory land tenure systems, often leading to land fragmentation, land degradation and insecurity of tenure[31] 4. The discovery of oil in the region could turn attention and government investment away from agriculture[32] 5. Political instability in the region because of armed groups and transnational organised crime;

4.2 Response to the SWOT

Extreme climatic conditions

Climate change has been integrated in to agricultural planning frameworks. The 2015/16/-2019/20 Agriculture Sector Strategic Plan recognises the effects of climate change, characterised by erratic weather patterns, which impact agricultural production and productivity and advocates for mainstreaming adaptation of agricultural production technologies and practices to climate change in all sector programmes.

To increase productivity, the plan places emphasis on the use of ecologically-sound agricultural research and climate change- resilient technologies and practices across the identified priority and strategic commodities, liaising with the National Agricultural Research System (NARS) and smallholder farmers to undertake climatexsmart adaptation actions with particular focus on ''climate-smart nutrient-enriched breeds; improved high-yielding crop varieties and livestock breeds; nutrient-fortified and transgenic crops (for bananas, maize, Irish potatoes), disease, pest and drought resistant varieties. MAAIF is also committed to developing and facilitating a policy and regulatory framework for development and uptake of biotechnology in agriculture.

Furthermore, MAAIF developed the National Adaptation Plan for the Agriculture Sector (NAP-Ag) framework which presents 21 priority adaptation options in key areas of crop production, livestock production, climate information, early warning and disaster preparedness, forestry, land and natural resources management and research and knowledge management. This supports actions to reduce vulnerability to the impacts of climate change.

Over dependence on rain-fed agriculture.

The Agriculture Sector Strategic Plan 2015/16-2019/2020 acknowledges that in addition to water rights issues, over -dependence on rain-fed agriculture have affected the availability of water for agricultural production. NDP III places emphasis on Government's commitment to reduce reliance on rain-fed agriculture by extensively pursuing construction of mini-micro irrigation schemes and multi-purpose surface storage facilities/reservoirs in the NDPIII period 2020/21-2024/25.

Limited agriculture mechanisation

The Agriculture Sector Strategic Plan (ASSP) 2015/16-2019/20, priority 2 focuses on increasing access to critical farm inputs, the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) identified promotion of agricultural mechanisation as a strategic intervention area. The various interventions planned for are being implemented by the Department of Agricultural Infrastructure, Mechanisation and Water for Agricultural Production (DAIMWAP) under the Ministry of Agriculture, Animal Industry and Fisheries.

Difficulties in meeting sanitary and phytosanitary standards to Europe and the United States

The Agricultural Sector Strategic Plan acknowledges that there is inadequate capacity to both public and private sector to regulate/enforce and comply with sanitary and phytosanitary standards (SPS) that guarantees health and safety of consumers, especially for commodities destined to the EU market. Most of the Ugandan cereals on the market do not meet the agreed EAC grain quality standards, which makes it difficult to exploit the regional market, yet most of the neighbouring countries like Kenya are not grain importers. The Agro-Industrialisation Program Interventions of the NDPIII identified increasing market access and competitiveness of agro-industry products as one of the objectives with an emphasis on strengthening enforcement and adherence to product quality requirements, training farmers and manufacturers on sanitary and phytosanitary standards, renovate, build and adequately equip certification laboratory facilities in the various strategic locations.

Limited access to credit facilities

The Agriculture Sector Strategic Plan recognises access to credit facilities as a key barrier, the plan further highlights government commitment to increasing access to agriculture finance services by designing and implementing agricultural commodity-based development credit facilities with specific focus on the 12 priority and 4 strategic commodities.

The government of Uganda has further undertaken a number of reforms and actions to unlock access to credit and insurance in the agricultural sector, for instance, providing support to agricultural credit markets. The government of auganda also established a partnership with the private sector long-term funding facility (The Agricultural Credit Facility) which provides interest-free loans to participating financial institutions (PFIs) for lending to farmers and agri-processors at favourable terms. In partnership with private insurance companies, the GOU launched the Uganda Agriculture Insurance Scheme (UAIS). UAIS rapidly expanded in its initial 18 months, selling more than 67,000 policies. The insurance scheme is supported by a premium subsidy ranging between 30-80%.

Regional Farm Service Centers (RFSC).

These will be set up across the 22 sub-regions of Uganda starting with Rwenzori (in Kasese). These RFSC will form One-Stop centres for all farmers needs for a specific region or ecological zone, providing all quality agricultural inputs (such as certified seed, pesticides, acaricides, etc) and services (such as extension services, training, and micro-agri-finance. RFCs form the Government's basis for improving agri-production and productivity as well the adoption of improved agricultural production at farm level/local level for sustainable agro-industrialisation. This provides reassurance for potential investors interested in the agricultural value chains of the region as highlighted in the document.

Affordable agri-finance to MSME.

The Government of Uganda is implementing reforms to improve access to finance, including credit and insurance to complete ACF, Agricultural Insurance Scheme and Policy.

05

Investment memoranda

5.0 Investment memoranda

5.1 Coffee value chain

Location: Rwenzori Region	Applicable Districts: All
Sector: Agriculture	**Investment category/value chain:** Coffee
Area: Total 241,038KM^2; Land: 197,100KM^2; Water 43,938KM^2	**Climate: tropical:** generally rainy with two dry seasons (December to February, June to August).
Terrain: Mostly plateau with rim of mountains	**Investment instrument:** Mezzanine Debt
Land use: Agricultural land: 71.2%: forest 14.5%; other 14.3% (2019 est.)	**Targeted investor:** All
Total revenue: N/A	**EBITDA:** N/A
Value chain: Coffee	**EBITDA multiple:**

Background: *Background to coffee growing in Rwenzori region, Key types of Coffee Grown, Key Districts, Key Returns per acre, Key Players or Coffee Growers and Companies in the region, position in the value chain, investment required, ESG Impact of the Investment, expected financial return, possible financiers in the region*

Coffee is by far the largest cash crop, employing more than 50% of the households within the Rwenzori Region[1]. Coffee represents the major source of livelihood and income for the population within the region and includes both Arabica and Robusta coffee. In addition, at national level, Uganda's principal export remains coffee with a target export volume amounting to US$ 1,153 Billion by end of 2020.

The Rwenzori region currently comprised of 9 districts is known for growing both Arabica and Robusta Coffee. Ntoroko and Bundibugyo are known for Arabica coffee whereas Kasese, Kyegegwa, Kyenjojo, Bunyangabu, Fort Portal and Kabarole are known for both Arabica and Robusta coffee comprising more than 80,000 smallholder farmers[2]. The farmers in the region are mostly women. The table below summarises the coffee grown in each of these regions and the estimated annual levels of production.

Table 1: Coffee production in Rwenzori region[3]

No.	Districts	Coffee Variety grown
1.	Kasese	Arabica + Robusta
2.	Bundibugyo	Arabica
3.	Ntoroko	Arabica
4.	Kyegegwa	Arabica + Robusta
5.	Kyenjojo	Arabica + Robusta
6.	Bunyangabu	Arabica + Robusta
7	Kabarole	Arabica + Robusta
8.	Fortportal	Arabica + Robusta
9.	Kamwenge	Arabica + Robusta
	Total	120,000 MT

Investor Business Model: The key to success in the coffee value chain is the ability to produce in large quantities as a farm, as well as bulkanising coffee from the farmers in the region. This requires the investor to work through the established farmer groups/farmer organisations as well as establishing new farmer groups to fully consolidate all farmers within the region. An average farmer group may have up to 100 members led by a "Group Leader." The number of coffee farmers within the district shall determine how many FGs will represent a district. Each district should appoint a regional leader (1) that reports directly to the Investment Company. This helps in multi-directional information transfer in terms of quality requirements, prices, inputs, agronomic practices and coffee handling both at the farm and at the stores. The Group Leaders have the responsibility of ensuring that the members are active and participate in group activities and also supply quality coffee to the Investment Company. The IC shall in turn appoint a dedicated Technical/Production Manager to coordinate the various regional leaders and also receive all the coffee produce from the farmers.

Coffee produce shall be tested using the IC laboratory for quality purposes through weighing and determining moisture levels before it is graded as either commodity coffee, premium coffee or speciality coffee. Currently, the coffee produced in Uganda is 70% Commodity Coffee *(Cap score <60%),* 20% Premium Coffee *(Cap score >60%<79%),* and 5% Speciality Coffee *(Cap score > 80%).* This is attributed to coffee post-harvest handling practices both at the farm, in transit, and at the stores. The IC may invest in improving this to tilt coffee towards more speciality coffee by financing good agronomic practices, post-harvest handling, mulching and stamping of coffee since producing good quality requires going an extra mile. The table below summarises the production capacity of one acre per tree for both Robusta and Arabica coffee.

Table 2: Production capacity for Arabica and Robusta coffee

	Kg/ Tree	Trees/ Acre	Kg/ Acre	Out Turn	Hulling Out Turn	Grading Out Turn Rate	Graded Volume	Price/ Kg	Gross Income	Gross Margin	Net Margin
Robusta	5	480	2,400	20%	90%	92.50%	400	5,400	2,157,840	90.70%	70%
Arabica	5	650	3,250	20%	90%	92.50%	541	7,500	4,058,438	90.70%	70%

The net margin considers all other associated administrative costs like personnel costs, welfare costs, medical costs, licencing related with operating the Investment Company.

The various grading for the coffee are summarised below:

Arabica Grading	Robusta Grading	Classification
AA	18-17	One Grade
A	16	One Grade
B	15	
PB	14	
C	12-13	One Grade
UG	UNDER 12	

After the grading, the cap score is determined to finally categorise it into either commodity coffee, premium coffee or specialty coffee.

Product description: *description/list of all types of coffee, differences and proportions for export for Uganda,*

The product is both Arabica and Robusta coffee. The description for each is as follows:

Arabica coffee:

Arabica Coffee can grow up to 12m high in the wild; its leaves are dark green and oval or oblong. A bright red berry is produced which contains two seeds. The fruits contain less caffeine than Robusta. Arabica Coffee grows well in warm, temperate environments, usually at altitudes between 1,300 and 2,500 metres. The plants can grow to around 5 metres in height, although commercial plants are usually kept short. The leaves of the plant are dark green and it produces white flowers and deep red berries. Arabica Coffee farmers pick the berries and remove the flesh, leaving only the bean. The beans are then washed, dried before being sold. In Uganda the four recommended and authorized Elite Arabica Coffee varieties are SL 14, SL28, KP423 and KP162.

Benefits of growing Arabica coffee include:

- Quality and price are rated much higher and is thus, more competitive on the international market because of its superior quality;
- Most gourmet/premium coffee is produced from 100% Arabica beans;
- Can be well integrated with other crops on the farm hence increasing returns to the farmer, and;
- It is a beverage with documented health benefits.

Robusta coffee:

The Robusta plant grows as a shrub or as a small tree up to 10 m in height. Generally, it is planted at lower densities than Arabica because of the larger plant size. Robusta exists in many different forms and varieties in the wild. The cross-bred strains of this variety of coffee are often hard to identify, but two main types are generally recognized: Erecta, or upright forms, and Nganda, or spreading forms. The cherries are small, but larger in number per node than Arabica, varying from 40 to 60 or more. They mature in about 10 to 11 months and are generally ready for harvest two months later than Arabica[4]. Robusta beans are smaller than Arabica beans. Depending on the plant strain, the bean shape is round, oval or elliptical with pointed tips. The colour of the beans depends on the method of processing — grey when washed and golden brown when prepared by the dry cherry or natural method of preparation. The caffeine content of Robusta beans is nearly twice as high as that of Arabica beans (2%-2.5% versus 1.1%-1.5%). Robusta coffee possesses several useful characteristics such as high tolerance to leaf rust pathogen, white stem borer and nematode invasion, and the potential to give consistent yields. For these reasons, the cost of Robusta cultivation is relatively low compared to the arabica variety. On the other hand, inability to endure long drought conditions, late cropping, late stabilization of yields and slightly inferior quality compared to arabica, are some of the negative attributes of Robusta coffee. In general, Robusta is hardier than arabica and grows well at low altitudes, in open humid conditions, with the cost of production being lower than the arabica variety. In some countries (Uganda and India, for example) Robusta is also cultivated at fairly high altitudes (above 1,200 m) and under shade. These features have helped in the production of dense beans, with better cupping characteristics than those normally expected in the Robusta cup, which could aid in the preparation of specialty and possibly exemplary coffees.[5] The production levels and pricing for each variety is shown in table 1 and table 2 above.

For both varieties, the planting season is between March and May (first rains) and September to November (second rains).

Market analysis

The destinations of Uganda's coffee exports are Italy, Germany, Belgium and Sudan. Europe remains the main destination for Uganda's coffees with a 72.33% imports share. However, there is a growing market in China and the East for Uganda's coffee. The table below summarises the market share:

Country	Market Share
Italy	36
Germany	17
Belgium	9
Sudan	8
Others	30
	100

The coffee produced is graded and exported without roasting. The actual roasting takes place in Europe and USA. In addition, there is no roaster in the Rwenzori region leading to lost benefits of value addition. The top five exporters of coffee in Uganda include: 1) Kyagalanyi Coffee Factory Limited, 2) UGACOF, 3) IBERO/Kaweri Coffee, 4) Ideal Quality Commodities and 5) Kawacom. These organisations also have a network of farmers that provide them with the coffee necessary to continue in business. However, offering competitive prices to farmers and value addition through roasting and packaging of coffee presents the largest opportunity to reap the full benefits of coffee growing.

Sector description: *key highlights of the agricultural sector in Uganda, historic/trends, challenges for the sector as a whole, relevant regulation that impacts the sector, ethical/social/environmental issues, competitors: describe who the company is competing with; industry rivalry, leading companies.*

Coffee contributes 19% of total exports in Uganda and the Rwenzori region is a major producer of coffee for export and is the major cash crop in Uganda. There has been a positive trend in the volume exported averaging 15% increase per annum year-on-year. This presents an opportunity for investment at various levels within the value chain. The government charges a 1% levy on all coffee exports by exporters. Specifically, for the Rwenzori region, coffee remains the major cash crop that provides a source of income for more than 80,000 households, and mostly women and vulnerable groups. All coffee exporters have an active presence in the Rwenzori region.

Competition among processors is stiff especially over the farm gate prices offered to farmers as a way of maintaining control over the source of the coffee. This comes as good news for the farmer who will in turn be able to get a fair price for the produce in a market where farmers have always earned so little from their produce.

Financial summary:

Appendix 15.1 – Coffee value chain sets out the financial statements for the coffee value chain that focuses primarily on value addition. The projections indicate that with a minimal investment up the value chain, the returns are attractive for an investor. The table below summarises the average returns across the value chain.

	Year 1	Year 2	Year 3	Year 4	Year 5
Net profit ratio	38%	17%	18%	19%	20%
Return on capital employed	37%	13%	14%	14%	14%
Leverage ratio	36%	22%	12%	5%	0%
Free cash flows	545,204,900	70,483,500	93,385,820	733,922,246	983,433,585
Project IRR	13%				
Equity IRR	9%				
Debt IRR	5%				
Payback period (years)	12				
EBITDA margin	54%	33%	33%	33%	33%
Gross margin		82%	82%	82%	82%
DSCR		1.24	1.96	3.94	29.77
Interest coverage		5.91	8.51	13.78	29.77
Asset turnover	1.08	0.79	0.75	0.73	0.7
Debt/EBITDA multiple	0.38	0.36	0.39	0.18	-
WCR/sales	-0.06	0.05	0.05	0.04	0.04

The details are contained in the appendices.

Investment detail

Key profitability drivers

- Specialty coffee is a driver of market growth
- High quality coffee coupled with supply chain control command a higher margin
- Control over the value chain eliminates layers of costs from middlemen who would otherwise be getting their profits all along the chain thus ensuring a low cost of exported coffee.
- Maintaining and expanding farmer network ensuring supply growth

Investment opportunity

The investment in coffee within the Rwenzori region presents opportunities across the entire value chain from the farmer to the actual consumer. An investor looking to maximise gains would invest in developing a farmer network that guarantees traceability and quality of production, develop the processing ability for the coffee produced as well as providing the ability for actual roasting of the coffee. Value addition is the key profitability driver in the coffee value chain for the investor and provides an opportunity for the farmer to obtain better prices.

Roasters, both local and foreign can have an opportunity for backward linkages as they look to sell high quality traceable coffee to the world market while making a positive social impact in the lives of millions of Ugandans. Much of Uganda's coffee is roasted in Europe and USA but roasters looking for backward linkages with guarantee of traceability would present an opportunity. In addition, forward linkages of those farmers and local processors that would look to invest in roasters (local/foreign) present an opportunity since actual profitability and impact lies in value addition.

The keys to success here include:

- Establishing a vibrant farmer network across the region;
- Empowering the farmer network to produce high quality coffee by providing farmer inputs, GAP and PHHP;
- Purchasing coffee at a premium price – with a focus on producing more speciality coffee;
- Processing, and grading the coffee;
- Roasting the coffee to final products. This could be done locally or in Europe, and;
- Actively marketing the coffee to potential buyers worldwide.

Investment in coffee is aligned with Uganda's Vision 2040, the National Development Plan 2025, the Comprehensive Africa Agricultural Development Plan, the Agricultural Sector Development Plan for Uganda as well as the Local Government Investment Plans for the 9 districts within the Rwenzori region. It also presents an opportunity for the investor to have hands-on control over the entire value chain, thereby maximising returns while providing positive social impact to the lives of the people of the Rwenzori region.

Production process

Sourcing

The investment company will source coffee directly from its farmer network located in the Rwenzori region. Farmers will receive hands-on training and equipment from investment company to increase crop yield and quality. The company will supervise production, test quality, purchase the coffee on site and arrange transport to partner export grading factory for processing. The company can contract local coffee exporters like Kyagalanyi, to handle the storage, processing, packaging ready for export.

Farmer groups

Famers can be organized in groups of 50/100. Each group is headed by a team leader and a youth coordinator who liaises with leading agronomist, who will be responsible for organizing, equipping, training, remunerating farmers all in the bid to ensure coffee production standards and tonnage is met.

Farmers groups will be governed by a constitution and code of conduct. Will hold regular meetings to discuss coffee production and these groups usually double as savings associations. The investment company will provide equipment like pulping machines that have a capacity of 3,500kg per hour, to each group. Other support like pesticides use, health and safety can be provided.

Admission to the farmer network will be based on selection criteria and member approval. Criteria are based on production capacity of the farmer (minimum of 70kg), cultural fit, and can include a production capacity of over 90kgs and take a 2-year vetting process. On average farmers have 10k trees producing 30 kgs of beans. Farmers can be given targets to increase production by 50 tonnes a year as they reinvest earnings in land and plant more trees. Investment companies should have financial means or access to off-take all farmer produce and given fluctuating supplies wider farmer groups should be formed.

Coffee growing

Coffee seedlings/nursery are grown by one farmer in each group who is certified by the Uganda Coffee Development Authority as a nursery planter. The plant needs 2.5 years to grow and produces on average 5 kgs per tree for a period of 8 - 10 years. Manure and pesticides used are organic, being a concoction of herbs and ash.

Post-harvest will be handled and managed by the investment company. Farmers will be given quality standards to achieve and be guaranteed a higher price to that offered by local brokers to incentivise performance and a set price that doesn't fluctuate akin to a contracted forward price. Current practise is that brokers offer them lower prices that fluctuate a lot which affects their incomes and de-incentivises them to produce more coffee. The consultant recommends a forward price of $2.27 per kilo; fixed while during the last season the average price on the market was $1.72. The higher price is justified given the higher value add (farmers pulp, wash, float and dry, grade beans to the standards set, the beans not selected are sold off to other brokers at market price or lower and all other vendors). Comparatively, Kenya cooperatives offer better prices and has led to better price differentials to Ugandan coffee fetching higher premiums in the international market.

Payment terms

Investment companies can pay farmers within 1 to 3 months: 30% paid at harvest, 50% after quality assessment at store and 20% at 3 months after harvest. This ensures Investment company management of liquidity as it balances inventory, receivables and sales

Market opportunity

International clientele are paying 20% to 50% and higher premiums on speciality coffee that have 90% rating and above. Currently Uganda coffee fetches a rating of 80% and below. Coffee origination mapping and tracing technology can be employed to increase speciality premium appeal. The customer segmentation can be based on product offering; customers are split into the coffee shop/cup customers, the green coffee beans customers and the roasted coffee beans customers.

Pricing

Ugandan average price per cup is $2.7; in the US $4.9. Starbucks average cup is $5.5.

Loyalty programs

Investment company can adopt client loyalty programs to increase client retention rates.

Client acquisition

Advertising, website presence.

Substitutes

A number of product substitutes like tea and other types of coffee from regions in Uganda, Kenya and Ethiopia. Methods of sourcing, processing, milling and brewing differentiate coffee and determine the quality achieved that enhances client experience.

Coffee price sensitivity

Coffee volatility reduces the higher you go on the value chain. Currently the coffee industry is an over supplied market, with an increase of production slated to increase this year and next year this may not persist due to cyclicality. Target price offer in can be lower by 15% to the average Starbucks price. Attaining an average gross margin of 67%, and EBTIDA margin of 19% leaves adequate room to absorb price volatility. Better strategy on top of value chain control that reduces OPEX cost to generate higher EBITDA margin to cover 4 times debt service.

5.2 Cocoa value chain

Location: Rwenzori Region	Applicable Districts: All
Sector: Agriculture	**Investment Category/value chain:** Cocoa
Area: Total 241,038KM^2; Land: 197,100KM^2; Water 43,938KM^2	**Climate: tropical:** generally rainy with two dry seasons (December to February, June to August).
Terrain: Mostly plateau with rim of mountains	**Investment instrument:** Mezzanine Debt
Land use: Agricultural land: 71.2%: forest 14.5%; other 14.3% (2019 est.)	**Targeted investor:** All
Total revenue: N/A	**EBITDA: N**/A
Value chain: Cocoa	**EBITDA multiple:**

Background: *Background to cocoa growing in Rwenzori region, Key types of Cocoa Grown, Key Districts, Key Returns per acre, Key Players or Cocoa Growers and Companies in the region, position in the value chain, investment required, ESG Impact of the Investment, expected financial return, possible financiers in the region*

Cocoa is primarily grown by smallholder farmers within the Rwenzori region in Bundibugyo district. Ugandan farmers enjoy a competitive advantage in the production of cocoa due to adequate rainfall (1,000-1,500mm) and fertile soils in the cocoa growing areas such as Bundibugyo which produces 90% of Uganda's cocoa exports. Uganda straddles the equator and this also gives local farmers a competitive advantage in terms of suitable humidity for cocoa production.

Ugandan cocoa is reputed to have special aromatic properties that are favoured by chocolate manufacturers. This increases the demand of Ugandan cocoa by the large chocolate companies that manufacture special flavour chocolates. In the first three years, farmers intercrop cocoa with food crops, especially bananas. From the fourth year onwards, cocoa trees develop a canopy and intercropping with food crops is no longer possible. Unless farmers have access to additional land for production of food crops, household food production can be threatened. Cocoa pods can be used to produce manure which enhances soil fertility and productivity of the trees and reduces the use of inorganic fertilisers.

Investor Business Model: The key to success in the cocoa value chain is the ability to produce in large quantities as a farm, as well as bulkanising cocoa from the farmers in the region. This requires the investor to work through the established farmer groups/farmer organisations as well as establishing new farmer groups to fully consolidate all farmers within the region. An average farmer group may have up to 100 members led by a "Group Leader." The number of cocoa farmers within the district shall determine how many FG will represent a district. Each district should appoint a regional leader that reports directly to the Investment Company. This helps in multi-directional information transfer in terms of quality requirements, prices, inputs, agronomic practices and coffee handling both at the farm and at the stores. The Group Leaders have the responsibility of ensuring that the members are active and participate in group activities and also supply quality cocoa to the Investment Company. The IC shall in turn appoint a dedicated Technical/Production Manager to coordinate the various regional leaders and also receive all the cocoa produce from the farmers.

Product description: *description/list of all types of cocoa, differences and proportions for export for Uganda,*

A cocoa pod (fruit) has a rough, leathery rind about 2 to 3 cm (0.79 to 1.18 in) thick (this varies with the origin and variety of pod) filled with sweet, pulp (called baba de cacao in South America) with a lemonade-like taste enclosing 30 to 50 large seeds that are fairly soft and a pale lavender to dark brownish purple color.

During harvest, the pods are opened, the seeds are kept, and the empty pods are discarded and the pulp made into juice. The seeds are placed where they can ferment. Due to heat buildup in the fermentation process, cocoa beans lose most of the purplish hue and become mostly brown in color, with an adhered skin, which includes the dried remains of the fruity pulp. This skin is released easily by winnowing after roasting. White seeds are found in some rare varieties, usually mixed with purples, and are considered of higher value.

Market analysis
Most of the buyers of cocoa are local traders spread in the different sub counties in Bundibugyo. They buy cocoa at farm gate and sometimes at the stores they have established at the different collection centres or the agents to reach farmers. The buyers later aggregate the cocoa at main stores at the district from where cocoa is later transported to Kampala for further cleaning and aggregation before export. The key cocoa buyers then transport the produce to the cocoa clients outside the country for further processing into finished products. No cocoa processing is currently being conducted in the country though Uganda Cocoa and Commodities Ltd has a processing project in the pipeline and is still resource mobilising as the investment is very expensive. Cocoa is harvested and sold year-round to farmer organizations and private buyers. The biggest buyers of cocoa in Bundibugyo included; ESCO (U) Ltd, OLAM, UGADEN, Agro Crop, Vanish, UCCL Brukam and ICAM. ESCO takes the biggest percentage of about 40%, Olam about 30%, and the balance of 30% is shared amongst the remaining exporters. However of recent some of the cocoa producers (Bundibugyo Cocoa Association (BCA), Western Bundibugyo Farmers Development Association (WEBUFADA), Bundibugyo Improved Cocoa Farmers Co-op Society) have been able to link up directly with international buyers (from Switzerland) and have managed to sell to them. In addition, these organized farmer groups have been able to attract trade financing, with low interest rate from Rabo Bank in the Netherlands, to a total tune of at least UGX 350,000,000 per farmer organization for procurement of cocoa. The above groups are the only ones that have been able to upgrade in the chain and as such they have caused intense price wars and competition to prevailing buyers after realising that the export companies were reaping off big margins. This though is at the benefit of the farmers who have received record highs in prices.
Sector description: *key highlights of the agricultural sector in Uganda, historic/trends, challenges for the sector as a whole, relevant regulation that impacts the sector, ethical/social/environmental issues, competitors: describe who the company is competing with; industry rivalry, leading companies.*
Bundibugyo produces 90% of Cocoa exports in Uganda as a major cash crop. There has been a positive trend in the volume exported averaging 15% increase per annum year-on-year. This presents an opportunity for investment at various levels within the value chain. The government charges a 1% levy on all cocoa exports by exporters. Specifically, for the Rwenzori region, coffee remains the major cash crop that provides a source of income for more than 10,000 households, and mostly women and vulnerable groups. All cocoa exporters have an active presence in the Rwenzori region. Competition among processors is stiff especially over the farm gate prices offered to farmers as a way of maintaining control over the source of the cocoa. This comes as good news for the farmer who will in turn be able to get a fair price for the produce in a market where farmers have always earned so little from their produce.

Financial summary:

Appendix 15.2 – *Cocoa value chain* sets out the financial statements for the cocoa value chain that focuses primarily on value addition. The projections indicate that with a minimal investment up the value chain, the returns are attractive for an investor. The table below summarises the average returns across the value chain.

	Year 1	Year 2	Year 3	Year 4	Year 5
Net profit ratio	7%	14%	10%	10%	10%
Return on capital employed	13%	31%	20%	19%	18%
Leverage ratio	49%	21%	10%	4%	0%
Free cash flows	**(746,321,000)**	**(574,258,900)**	**2,088,366,028**	**3,173,584,870**	**3,887,985,220**
Project IRR	16%				
Equity IRR	12%				
Debt IRR	4%				
Payback period (years)	8%				
EBITDA margin	**14%**	**23%**	**16%**	**16%**	**16%**
Gross margin	20%	27%	20%	20%	20%
DSCR	**0.68**	**2.64**	**2.88**	**5.77**	**43.66**
Interesr coverage	4.06	12.55	12.48	20.21	43.66
Asset turnover	1.84	2.15	2.01	1.83	1.67
Debt/EBITDA mulitple	1.23	0.3	0.27	0.12	-
WCR sales	**-0.01**	**0.06**	**0.08**	**0.08**	**0.08**

The details are contained in the appendices.

Investment Opportunity

The investment in cocoa within the Rwenzori region (especially in Bundibugyo) presents opportunities across the entire value chain from the farmer to the actual consumer. An investor looking to maximise gains would invest in developing a farmer network that guarantees traceability and quality of production, develop the processing ability for the cocoa produced as well as providing the ability for actual roasting of the cocoa. Value addition is the key profitability driver in the cocoa value chain for the investor and provides an opportunity for the farmer to obtain better prices.

Roasters, both local and foreign can have an opportunity for backward linkages as they look to sell high quality cocoa to the world market while making a positive social impact in the lives of millions of Ugandans. Much of Uganda's cocoa is processed and transformed into finished products in Europe and USA but any manufacturers

looking for backward linkages would present an excellent opportunity.

The keys to success here include:

- Establishing a vibrant farmer network across the region;
- Empowering the farmer network to produce high quality cocoa through providing farmer inputs, GAP and PHHP;
- Value addition on the cocoa;
- Actively marketing the cocoa to potential buyers worldwide.

Investment in cocoa is aligned with Uganda's Vision 2040, the National Development Plan 2025, the Comprehensive Africa Agricultural Development Plan, the Agricultural Sector Development Plan for Uganda as well as the Local Government Investment Plans for the 9 districts within the Rwenzori region. It also presents an opportunity to the investor to have hands-on control over the entire value chain, thereby maximising returns while providing positive social impact to the lives of the people of the Rwenzori Region.

Production process

The production process and model is exactly similar to the coffee production process highlighted above.

5.3 Cotton value chain

Our research found that the cotton value chain presents the following opportunities across the value chain:

- Cotton ginning with cotton seed oil, animal feed and absorbent cotton wool production;
- Cotton yarn spinning;
- Cotton ginning with absorbent cotton wool production, and;
- Cotton ginning with cotton seed oil and animal feed production.

(a) Ginning with cotton seed oil, animal feed and absorbent cotton wool

Cotton seed edible oil is used in cooking and confectionery in Uganda. Nalubega (2012) reported that Uganda's edible oil demand stands at 120,000 MT against a production capacity of 40,000 Mt leaving a deficit of 80,000 MT annually. There is, therefore, still much growth to gain in consumption of edible oil in Uganda. B-Space Ltd (2014) observed that although World Health Organization (WHO) stipulated per capita consumption of edible oil as 19.21 Kg per person per annum, in Uganda it is about 3.2 Kg (16%).

The proposed project will add more value to seed cotton in one facility by processing it into (a) Cotton lint for export; and (b) Absorbent cotton wool, cotton seed oil and animal feeds for the domestic market. Seed cotton is ginned to cotton lint and fibre/ cotton waste (up to a maximum 42% depending on the type of ginnery and seed cotton quality) and cotton seeds (up to a maximum of 58%. Cotton lint is normally processed to yarn and textiles. Cotton seeds can be further processed to get cotton seed oil, animal feeds, husks and fibre. Cotton lint and cotton waste can also be processed into medical grades absorbent cotton wool.

Appendix 15.3 Cotton Value Chain provides the detailed financial model for this opportunity. The table below provides the summary ratio analysis.

There is, therefore, still much growth to gain in consumption of edible oil in Uganda. B-Space Ltd (2014) observed that although World Health Organization (WHO) stipulated per capita consumption of edible oil as **19.21 Kg** per person per annum, in Uganda it is about **3.2 Kg (16%).**

Ratio analysis

	Year 1	Year 2	Year 3	Year 4	Year 5
Net profit ratio	12%	19%	23%	25%	25%
Return on capital employed	12%	21%	25%	26%	22%
Leverage ratio	94%	51%	26%	12%	5%
Free cash flows to firm	327,823	486,802	1,527,845	2,022,763	2,372,075
Free cash flows to equity	(177,938)	412,672	1,468,541	1,978,285	2,342,423
Project IRR	30%				
Equity IRR	26%				
Debt IRR	4%				
Payback period (years)	3				
EBITDA Margin	30%	34%	37%	40%	39%
Gross Margin	39%	42%	44%	45%	45%
DSCR	0.60	1.05	1.93	3.69	7.21
Interest Coverage	13	22	39	68	102
Asset Turnover	1.02	1.08	1.09	1.03	0.85
Debt/EBITDA Multiple	1.59	0.91	0.49	0.26	0.13
WCR/Sales	(0.12)	(0.17)	(0.05)	(0.04)	-

(b) Modern Cotton yarn spinning mill

The Project involves establishing a state-of-the-art cotton yarn mill capable of producing annually 5,000MT of combed cotton yarn of Counts 20/1, 30/1 and 40/1 for export to the COMESA, European and Asian markets. Seed cotton is ginned to cotton lint and fibre/ cotton waste (up to a maximum 42 percent depending on the type of ginnery and seed cotton quality) and cotton seeds (up to a maximum of 58 percent. Cotton lint is normally processed to yarn and textiles. Cotton seeds can be further processed to get cotton seed oil, animal feeds, husks and fibre. Cotton lint and cotton waste can also be processed into medical-grade absorbent cotton wool.

Appendix 15.3 Cotton Value Chain provides the detailed financial model for this opportunity. The table below provides the summary ratio analysis.

Ratio analysis

The table below shows the ratio analysis

	Year 1	Year 2	Year 3	Year 4	Year 5
Net profit ratio	10%	14%	17%	18%	18%
Return on capital employed	6%	9%	12%	13%	13%
Leverage ratio	109%	73%	45%	25%	11%
Free cash flows to firm	4,237,156	1,457,853	5,419,568	5,942,888	6,089,955
Free cash flows to equity	752,097	(1,931,997)	2,205,488	2,904,578	3,227,415
Project IRR	8%				
Equity IRR	-10%				
Debt IRR	18%				
Payback period (years)	13				
EBITDA margin	37%	39%	40%	40%	40%
Gross margin	53%	53%	53%	53%	53%
DSCR	0.39	0.57	0.88	1.38	2.65
Interest coverage	3	5	7	10	15
Asset turnover	0.59	0.67	0.74	0.75	0.72
Debt/EBITDA multiple	2.38	1.60	1.04	0.65	0.33
WCR/sales	(0.03)	(0.24)	(0.03)	(0.01)	-

(c) Cotton ginning with absorbent cotton wool production

The project will add more value to seed cotton in one facility by processing it into (a) cotton lint for export; and (b) absorbent cotton wool and cotton seeds for the domestic market. Seed cotton is ginned to cotton lint and fibre/ cotton waste (up to a maximum 42% depending on the type of ginnery and seed cotton quality) and cotton seeds (up to a maximum of 58%. Cotton lint is normally processed to yarn and textiles. Cotton seeds can be further processed to get cotton seed oil, animal feeds, husks and fibre. Cotton lint and cotton waste can also be processed into medical-grade absorbent cotton wool.

Appendix 15.3 Cotton Value Chain provides the detailed financial model for this opportunity. The table below provides the summary ratio analysis.

Ratio analysis

	Year 1	Year 2	Year 3	Year 4	Year 5
Net profit ratio	17%	22%	25%	27%	27%
Return on capital employed	17%	21%	24%	25%	21%
Leverage ratio	85%	47%	24%	12%	5%
Free cash flows to firm	608,214	670,824	1,517,205	1,932,759	2,221,604
Free cash flows to equity	30,880	110,824	989,205	1,436,759	1,757,604
Project IRR	38%				
Equity IRR	23%				
Debt IRR	15%				
Payback period (years)	4				
EBITDA margin	17%	22%	25%	27%	27%
Gross margin	53%	53%	53%	53%	53%
DSCR	2.88	3.34	4.70	6.23	6.59
Interest coverage	8	10	18	30	45
Asset turnover	0.99	0.94	0.96	0.92	0.77
Debt/EBITDA multiple	1.20	0.85	0.48	0.26	0.13
WCR/sales	0.12	0.16	0.05	0.04	-

(d) Ginning with cotton seed oil and animal feed production

The project will add more value to seed cotton in one facility process it into (a) cotton lint for export; and (b) cotton seed oil and animal feeds for the domestic market. Seed cotton is ginned to cotton lint and fibre/ cotton waste (up to a maximum 42% depending on the type of ginnery and seed cotton quality) and cotton seeds (up to a maximum of 58%. Cotton lint is normally processed to yarn and textiles. Cotton seeds can be further processed to get cotton seed oil, animal feeds, husks and fibre. Cotton lint and cotton waste can also be processed into medical-grade absorbent cotton wool.

Appendix 15.3 Cotton Value Chain provides the detailed financial model for this opportunity. The t able below provides the summary ratio analysis.

Ratio analysis

	Year 1	Year 2	Year 3	Year 4	Year 5
Net profit ratio	12%	19%	21%	23%	23%
Return on capital employed	10%	18%	21%	23%	20%
Leverage ratio	100%	58%	31%	15%	6%
Free cash flows to firm	321,925	421,529	1,089,962	1,364,352	1,612,493
Free cash flows to equity	(232,459)	(116,211)	582,950	888,068	1,166,937
Project IRR	29%				
Equity IRR	12%				
Debt IRR	17%				
Payback period (years)	8				
EBITDA margin	34%	35%	36%	37%	37%
Gross margin	53%	53%	53%	53%	53%
DSCR	1.95	2.62	3.58	4.66	35.97
Interest coverage	5	8	13	22	33
Asset turnover	0.83	0.93	1.00	1.00	0.85
Debt/EBITDA multiple	1.77	1.09	0.63	0.35	0.17
WCR/sales	(0.12)	(0.17)	(0.05)	(0.04)	-

Capital expenditure

The table below shows the projected capital expenditure for the proposed projects.

	Ginning	Spinning	Ginning & Absorbent	Ginning & lint & oil & feeds
ITEM	USD	USD	USD	USD
Land and site preparation	100,000	500,000	100,000	90,000
Civil works and buildings	696,000	3,000,000	621,000	631,000
Production line	1,720,000	15,050,000	1,395,000	1,139,000
	1,720,000	**15,050,000**	**1,395,000**	**1,139,000**
Equipment	20,000	30,000	20,000	20,000
Office furniture	10,000	250,000	10,000	10,000
Vehicles	40,000	60,000	10,000	40,000
Computers	15,000	20,000	8,000	15,000
Total capex	2,601,000	18,910,000	2,164,000	1,945,000
Pre-operating costs	35,000	1,200,000	35,000	35,000
Working capital				
Purchase of raw materials	1,600,000	5,000,000	1,801,000	1,861,000
Total funding requirements	4,236,000	25,110,000	4,000,000	3,841,000

5.4 Maize value chain

Maize in the Rwenzori region is predominantly grown in Kamwenge and is the primary source of livelihood in the district. In other districts within the region, maize is grown by small-scale farmers for household, food and income security. It has also become an increasingly important non-traditional export crop. It is also an industrial crop for the animal feeds industry and it has high potential for value addition to support the agro-processing industry.

Maize production in 2019 amounted to 2.9 million MT, of which 134,903 MT were exported. This generated US$ 43.567 million for the country. The sector aims to annually produce 10 million MT by 2020. Exports are projected to increase to US$ 105 million annually. The main challenges in the maize sub sector are the generally low yields (2.2-2.5 mt/ha, compared to the potential of 5 MT/ha) and high post harvest losses (up to 15%), which often lead to low farm gate prices due to poor quality. The prevalence of pests and diseases has also affected production in maize.

In order to achieve the above set targets, the sector should increase production and productivity of maize through: producing and distributing 60 MT of improved maize seed (30 MT hybrid, 30 MT OPV); multiplication and distribution of foundation seed, improving access and use of fertilisers, increasing pest and disease control measures; promoting mechanisation, improving extension services, providing support to post-harvest handling through training traders and farmers on quality standards and post-harvest handling technologies practices;

The investment opportunities include:

- The construction of the factory complex with bulk storage capacity up to 10,000MT made up of;
  - (a) 3 storage silos with capacity 3,000MT each
  - (b) 1 Warehouse with storage capacity of 1,000MT
- Purchase and installation of a drying system with capacity of 15 metric tonnes per hour depending on the crop condition and ambient temperature;
- Cleaning and grading system for up to 15 metric tonnes per hour;
- Bagging system able to bag up to 25 tonnes per hour.

Appendix 15.4 Maize Value Chain provides the detailed financial model for this opportunity. The table below provides the summary ratio analysis.

Maize production in 2019 amounted to **2.9 million** MT, of which **134,903** MT were exported. This generated **US$ 43.567** million for the country. The sector aims to annually produce 10 million MT by 2020. Exports are projected to increase to **US$ 105 million** annually.

Ratio analysis

Ratio Analysis	Year 1	Year 2	Year 3	Year 4	Year 5
Net profit ratio	6%	8%	9%	10%	10%
Return on capital employed	21%	21%	22%	22%	18%
Leverage ratio	61%	29%	13%	5%	0%
Free cash flows to firm	(1,030,085)	3,517,373	3,524,939	4,323,431	4,840,789
Free cash flows to equity	(1,368,626)	3,197,178	3,284,792	4,163,334	4,760,740
Project IRR	28%				
Equity IRR	25%				
Debt IRR	2%				
Payback period (years)	4				
EBITDA margin	13%	14%	15%	16%	15%
Gross margin	22%	22%	22%	22%	22%
DSCR	7.88	41.00	25.74	50.67	375.96
Interest coverage	8	12	21	39	78
Asset turnover	10.22	4.31	3.27	2.66	2.15
Debt/EBITDA multiple	0.86	0.45	0.24	0.10	-
WCR/Sales	**(0.14)**	**0.01**	**(0.02)**	**(0.02)**	**(0.00)**

5.5 Banana/matoke chain

Banana production in 2019 amounted to 4.6 million MT, of which 3,070 MT were exported. Banana exports generated US$ 587,000 for the country in 2019. The sector targets to produce 13 million MT by 2020. The key activity will be addressing the productivity of the three major banana types (cooking, juice and dessert bananas). The region presents opportunities for growing of bananas for sale in Congo and other regional markets.

Banana production challenges in Uganda include declining soil fertility, pressure from pests and moisture stress. Interventions to address these challenges will include:

1. Promoting the use of organic and inorganic fertilisers and soil-moisture conservation techniques;
2. Disseminating knowledge and information on improved agronomic practices such as soil fertility and moisture conservation, supplementary irrigation, tissue culture and traceability;
3. Enforcing good agricultural practice, product quality and food safety standards;
4. Strengthen efforts to control the banana wilt and others pests and diseases;
5. Promote adoption of high-yielding and drought-resistant banana varieties released by NARO.

06

Stakeholder mapping

6.0 Stakeholder mapping

6.1 Stakeholders

The key stakeholders in the Agricultural sector include:

- Ministry of Agriculture, Animal Industry and Fisheries (MAAIF)
- The Agricultural Sector Working Group (AgSWG)
- Uganda Coffee Development Authority (UCDA)
- Bilateral Development Partners
- Multi-Lateral Development Partners
- Uganda Investment Authority
- District Local Governments, and Sub-Counties
- Farmer Organisations and Farmer Groups
- National Agricultural Research Organisation
- Regional Trade Blocks like COMESA, EAC
- Universities and Agricultural Training Institutions
- Private Sector Companies
- Other Semi Autonomous Agencies like NAADS
- Ministry of Trade, Industry and Cooperatives
- Financiers and Private Equity Firms in Uganda and abroad

These stakeholders work together to strengthen both Intra-Sectoral and Multi-Sectoral coordination and linkages through the use of existing coordination mechanisms, platforms and other institutional innovations.

6.2 Policy documents

The Rwenzori region agricultural sector investment profile should be closely aligned with the national priorities and Uganda's strategic direction. Therefore, the profile has been designed to ensure alignment with the following key strategic and policy documents:

- Vision 2040
- United Nations Sustainable Development Goals
- National Development Plan III
- Comprehensive Africa Agriculture Development Programme
- Agricultural Sector Strategic Plan
- Operation Wealth Creation
- National Agriculture Policy
- Agricultural Sector Development Strategy and Investment Plan
- District Local Government Development Plans

6.3 Stakeholder map and coordination

During ASSP implementation, MAAIF will seek to strengthen both intra-Sectoral and multi-Sectoral coordination and linkages through the use of existing coordination mechanisms and platforms and other institutional innovations. Given the centrality of the sector in the achievement of national development objectives, functional and collaborative linkages between the sector agencies and with other government MDAs, LGs and other stakeholder institutions (such as the civil society, private sector and development partners) will be strengthened.

The approach taken will be guided by the important principle and understanding that many of the outcomes and successes of the ASSP implementation will lie outside the agricultural sector itself and, hence, the policies and strategies of other sectors and institutions will need to be taken into account in the implementation process. In this regard, the provisions of the NDP III will provide the overall strategic framework within which the ASSP will be implemented.

In practical terms, MAAIF will continue to take a SWAP approach to the sector development working mostly through the Agriculture Sector Working Group (AgSWG), a multi-stakeholder platform, which will meet at least once every quarter to transact, among other matters, the following:

- Coordinate and harmonize ASSP implementation to ensure that it is in line with the NDP III goals and objectives;
- Ensure ASSP investment programmes are aligned with sector priorities;
- Pursue solutions to structural, institutional and other constraints to effective ASSP implementation at national, zonal, and local levels;
- Review mechanisms for enhancing stakeholder participation in implementing ASSP;
- Review the Agriculture BFP as a basis on which the annual budget for the sector is compiled;
- Provide the main forum for the sector-wide approach to planning and budgeting for the agriculture sector;
- Identify, on the basis of sector expenditure and investment plans and the BFP, policy issues for consideration and action by the TPM;
- Provide information for the Joint GoU/DP reviews, and;
- Monitor budget implementation vis-a-vis the aims and objectives set out in the BFP.

The AgSWG is composed of MAAIF TPM and includes heads of all MAAIF sector agencies, AgDPs, MOFPED, and representation from private sector, NGOs, civil society, ULGA and the Agricultural Council of Uganda. In addition, the sector will have fully-established and robust coordination mechanisms at central, zonal, district and sub-county levels. These will include:

- At national/ multi-sector level: Parliamentary Committee on Agriculture; AgSWG; Conditional Grant Utilisation Agreement – Joint Technical Committee; Joint Annual Review on Decentralisation; Joint Sector Annual Review; and National Farmers' Forum;
- At Sector management level: TPM – Technical Committee; Planning and Budgeting Committee; ATAAS; and strategic partnership framework agreements (agency to agency);
- Inter-Agency Coordination Committee; and At Local level: District Farmers Forum; Regional/ Zonal Coordination Committees; Sub - County Farmers' Fora; ZARDIS; Cooperatives; Production and Marketing Committees; Technical Planning Committees; and Parish Coordination Committees.

07

Policy, legal and institutional framework

7.0 Policy, legal and institutional framework

7.1 Policy framework

The main policies in Uganda's Agricultural Sector include:

The Agriculture Sector Strategic Plan (ASSP) of 2015/16-2019/20

The ASSP is Uganda's basic tool for implementing the Comprehensive Africa Agriculture Development Programme/Malabo commitments. (CAADP) with a major target of achieving a sustainable annual agriculture growth rate of 6 percent.[9] ASSP aims to increase production and productivity, increase access to critical farm inputs, improve value addition and marketing, strengthen MAAIF's institutional capacity and agencies as well as the production sector in Local Governments. ASSP analyses current and future challenges and opportunities and identifies national targets of key value chains that will make the country food secure and transform agriculture by 2020.[10]

Plant Health Investment Plan for Uganda

CABI with support from PARM developed a comprehensive Plant Health Investment Plan for Uganda to upgrade the Uganda Plant Pest management system and make it sustainable. The plan has three pillars as listed below:

- Building cost-efficient information systems to detect and monitor plant pests and diseases and providing timely information for a rapid response;
- Improving access to pest management services by smallholders and other value chain actors;
- Strengthening the capacity of government, mainly MAAIF to monitor, analyse and combat the threat of plant pests and diseases and diseases.

The National Adaptation Plan for Agriculture Sector 2018

The National Adaptation Plan for Agriculture Sector (NAP-Ag) contributes to the third National Development Plan (NDPIII) priority of strengthening ecologically-sound Agricultural research and climate change-resilient technologies and practices. The main objective of the NAP-Ag is to increase resilience of the Agricultural Sector to the impacts of climate change, through coordinated interventions that enhance sustainable agriculture, food and national security, livelihood improvement and sustainable development. The adaptation actions presented in the NAP-Ag target to boost production and productivity for all agriculture sub-sectors-crop, livestock, fisheries, forestry, land and natural resources. Ultimately the plan is to ensure a resilient agriculture sector across sub-sectors through gender-responsive actions guided by knowledge, evidence and information change, experience and information on climate change.

National Agricultural Extension Strategy 2016/17-2020/21

The National Agricultural Extension Strategy (NAES) was derived from the National Agricultural Extension Policy 2016 and works alongside the five-year NDPIII. The strategy aims to establish a well-coordinated, harmonised, pluralistic agricultural extension delivery system for increased efficiency and effectiveness, regulate and quality assure extension services provided to farmers, empower farmers and other value chain actors to effectively participate and benefit equitably from agricultural extension processes and demand for services, develop a sustainable mechanism for packaging and disseminating appropriate technologies to all categories of farmers and other beneficiaries in the agricultural sector and to build institutional capacity for effective delivery of agricultural extension services.[11]

9 CAADP Biennal Review Brief page 2
10 Agriculture Sector Strategic Plan 2015/16-2019/20
11 National Agricultural Extension Strategy 2016/17-2020/21

National Irrigation Policy and National Irrigation Master Plan for Uganda (2010-2035)

The National Irrigation Policy and National Irrigation Master Plan for Uganda (2010-2035) aims to " ensure poverty alleviation and economic growth as a result of the sustainable realisation of the country's irrigation, potentially mitigating the effects of climate change and contributing to the transformation of Uganda's society from a peasant to a modern and prosperous country" are in line with the NDPIII.[12] Specifically, the irrigation policy is to ensure improved and expanded irrigation infrastructure and practices contributing to poverty alleviation and economic growth in Uganda as a result of farmer-managed, smallscale schemes and best practice service delivery as well as an enabling investment environment for irrigated crop production, value addition and/or service provision. The irrigation policy focuses on smallholder farmers who practice subsistence farming, emerging farmers who are shifting from subsistence farming to commercial farming and commercial farmers who grow cash crops to increase agricultural production and productivity. Irrigation contributes to sustainable food production and food security, poverty alleviation and increase economic growth when the schemes focus on improved yield of high value crops, value addition and livelihood differentiation accruing to increased trade goods and market activity.[13]

The National Agriculture Policy 2013

The Agricultural Sector in Uganda is influenced by the National Agriculture Policy (NAP) which was approved in 2013 by the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF).The vision of NAP is "A Competitive, Profitable and Sustainable Agriculture Sector", and the mission is "To transform subsistence farming to sustainable commercial agriculture". "The policy aims to achieve food and nutrition security and improve household incomes through coordinated interventions that focus on enhancing sustainable agricultural productivity and value addition, providing employment opportunities and promoting domestic and international trade. NAP also aims to increase incomes of farming households from crops, livestock, fisheries and all other agriculture related activities, promote specialization in strategic, profitable and viable enterprises and value addition through agro-zoning, promote domestic regional and international trade in agricultural products, develop human resources for agricultural development and ensure sustainable use and management of agricultural resources. NAP therefore plays a big role in providing the necessary frameworks upon which strategies and programs for developing the agriculture sector are based in Uganda.[14]

Third National Development Plan (NDP III)

The National Development Plan highlights agriculture as the backbone of Uganda's economy with key objectives of increasing access to certified inputs and markets. There are a number of agricultural interventions as shown below;

- Development of an enhanced integrated information system for agricultural production, pests, diseases and markets;
- Promotion of investment in small community level infrastructure such as feeder roads, water use and good agricultural practices;
- Access to well performing inputs and outputs markets;
- Linking small holder farmers to storage and financing.

National Coffee Policy 2013

The policy provides guidance for various stakeholders in the coffee industry, so as to improve production, roasting, processing, and marketing of coffee. The policy seeks to increase coffee production and productivity at the farm level in a sustainable way that addresses the social, ecological and economic dimensions and to support and strengthen coffee farmer organisations to participate effectively in all stages of the coffee value chain.

The Uganda National Land Policy 2013

The policy envisions a transformed Ugandan society through optimal use and management of land resources for a prosperous and industrialised economy that has a developed services sector. The goal of the policy is to

12 National Irrigation Master Plan for Uganda 2010-2035 page IV

13 AgriFoSe2030 Report 4, 2018 page 6

14 National Agriculture Policy 2013

ensure efficient, equitable and optimal utilization and management of Uganda's land resources for poverty reduction, wealth creation and overall socio-economic development. The land policy seeks to address the disparities in ownership, access to and control of land by vulnerable groups; displacement, land-grabbing and landlessness resulting from high population growth and increasing demand on land for investment, particularly for the communal lands that are neither demarcated nor titled. The policy also provides for incentives to enhance land utilisation for development and discourages the practice of holding large tracts of land for speculative purposes, while developers or landless people are without access to land.

The policy re-focuses attention from an over-emphasis on property rights per se to the essential value of land as a resource in development, recognizing that protection of property rights over land and its efficient use have to go hand-in-hand. Other issues addressed by the land policy include underutilisation of land due to poor planning and land fragmentation, environmental degradation and climate change, poor management of ecological systems due to their transboundary nature and unsustainable exploitation arising out of conflicting land uses and inadequate enforcement of natural resources management standards and guidelines.

7.2 Legal framework

There are a number of legislative and regulatory instruments in Uganda that affect the agricultural sector in both general and specific terms. Below are some of the Acts and Regulations that are of particular relevance to the Agricultural Sector:

The Constitution of the Republic of Uganda 1995

The Constitution provides for the adoption of measures required to protect the environment and natural resources and creates an obligation for the State to stimulate agricultural, industrial and technological and scientific d evelopment b y adopting appropriate policies and enactment of enabling legislation.

The National Agricultural Research Act, 2005

The Act provides for development of an agricultural research system for Uganda, hereby referred to as the National Agricultural Research System (NARS), for the purpose of improving agricultural research services delivery, financing and management. The overall objective of NARS is to address the challenges presented in the Plan for Modernisation of Agriculture (PMA) strategy and aims to provide research services that address in a sustainable manner, the needs and opportunities of the majority poor. The other objectives of Agricultural research in Uganda are to;

- Transform agricultural production in to a modern science-based market-oriented agriculture capable of greater efficiency, profitability and of sustaining growth in the agricultural sector while contributing to poverty eradication;
- Promote agriculture and related industry for the purpose of contributing to the improvement of quality of life and livelihoods of the people, in regards to the protection of the environment;
- Support the development and implementation of national policy and knowledge.

The Agricultural Chemicals (Control) Act, 2006

The Agricultural Chemicals Act provides for control and regulation of the manufacture, storage, distribution, and trade in, use, importation and exportation of agricultural chemicals. The Act establishes an Agricultural Chemical Control Board that ensures chemicals are duly registered and are used in accordance with the regulations provided under the Act. Agricultural chemicals — when well-regulated and used properly — can result in significant gains for the farmers. In addition, genetically-modified crops that will have in-built desirable characteristics once approved and used according to the country's regulations will contribute significantly to productivity and value of the agricultural industry.

The National Environment Act 2004

The National Environment Act (Cap 153) provides for the principles of environmental management and enforces the constitutional call for a right to a clean and healthy environment. It does this by establishing administrative structures, within the National Environment Management Authority (NEMA) as the apex Government Agency for environmental management in Uganda. The Act charges NEMA with the responsibility of conducting an Environment Impact Assessment (EIA) before any likely project to have an impact on the environment is undertaken. This law mentions aspects of agriculture in environment management.

The Water Act, Cap 152, 2004

The Act provides for the use, protection and management of water resources and supply; to provide for the constitution of water and sewerage authorities; and to facilitate the devolution of water supply and sewerage undertakings.

One of it's objectives is to allow for orderly development and use of water resources for purposes other than domestic use, such as the watering of stock, irrigation and agriculture, industrial, commercial uses, fishing in ways which minimise harmful effects to the environment.

The Plant Variety Protection Act 2014

The Act aims at providing promotion of development of new plant varieties and their protection as a means of enhancing breeder's innovations and rewards through granting plant breeders rights. The Act grants different duties to different bodies/entities in relation to the discovery, registration and later implementation of rights accorded to the different breeders as per the Act.

The Plant Protection and Health Act, 2016

The Plant Protection Act provides for the prevention of the introduction, spread and eradication of pests and diseases destructive to plants. The Act regulates the introduction of exotic plants and microorganisms. The Act however does not cover the GMOs and the surrounding issues particularly the need for risk assessment and issues concerning the transmission boundary movements.

7.3 Institutional framework

Ministry of Agriculture Animal Industry and Fisheries (MAAIF)

Ministry of Agriculture Animal Industry and Fisheries is the lead agency responsible for creating an enabling environment in the Agricultural Sector. MAAIF's mandate is, "To promote and support sustainable and market-oriented agricultural production, food security and household incomes". The ministry performs its mandate through the ministry's seven agencies, local governments, other ministries, departments and agencies (MDAs), private sector, civil society and development partners.

In addition, MAAIF has seven agencies responsible for the following delegated functions;

- National Agricultural Research Organisation (NARO. NARO is mandated to do research on issues of strategic national importance (priorities). NARO envisions "A market-responsive, client-oriented and demand-driven national agricultural research system. The agency has a mission "To generate and disseminate appropriate, safe and cost effective technologies" aims to have client and impact-oriented, market-responsive agricultural sector research agenda developed and implemented, improve client needs and market opportunities, have infrastructural and financial sustainability capacities to support and facilitate agricultural research, have mechanisms for contributing to agricultural research sector policy formulation, implement quality assurance procedures in the National Agricultural Research System;
- National Animal Genetic Resource Centre and Data Bank (NAGRC&DB) for animal genetic development;
- National Agricultural Advisory Services (NAADS) for delivery of advisory Services. Under it's new mandate NAADS contributes to the achievement of the priority areas identified under the Agricultural Sector Strategic Plan (ASSP) for 2015/16-2019/20. NAADS focuses on, among other things, increasing access to critical and quality Agricultural Inputs for small holder famers, supporting the development of Agriculture commodity value chains through provision of Agribusiness Value Addition, and Marketing Linkage services, facilitating farmer cooperatives/ groups to access appropriate agricultural financial

services, strengthen institutional and collaboration frameworks to enhance operational effectiveness and efficiency;

- Coordinating office for the Control of Trypanasomiasis in Uganda (COCTU);
- Dairy Development Authority (DDA) for promotion of Dairy development;
- Uganda Coffee Development Authority (UCDA) for promotion of coffee development;
- Cotton Development Organisation (CDO) for cotton development.

Ministry of Water and Environment

The Ministry of Water and Environment (MWE) has the responsibility for setting national policies and standards, managing and regulating water resources and determining priorities for water development and management. It also monitors and evaluates sector development programmes to keep track of their performance, efficiency and effectiveness in service delivery. MWE has three directorates: Directorate of Water Resources Management (DWRM), Directorate of Water Development (DWD) and the Directorate of Environmental Affairs (DEA). The mandate of the MWE regarding sanitation and hygiene activities is stipulated in the Memorandum of Understanding that was signed by Ministry of Health, Ministry of Education and Sports, and MWE. The role of MWE is limited to development of public sanitary facilities and promotion of good practices of hygiene and sanitation in small towns and rural growth centres. With respect to water for production, MWE is the lead agency for water for production and development off-farm.

National Environment Management Authority (NEMA)

NEMA is the institutional body responsible for enforcing, coordinating, monitoring and supervising environmental protection activities in Uganda. While NEMA is responsible for planning, monitoring and coordinating environmental matters, implementation is the responsibility of the Ministry of Agriculture, Animal, Industry and Fisheries. The environmental liaison unit within MAAIF is responsible for integrating environmental concerns in to the Agriculture Sector Strategic Plan and implementing environmental activities within the mandate of MAAIF.

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Ease of doing Agribusiness in Uganda

8.0 Ease of doing Agribusiness in Uganda

Uganda scores 52.15 out of 100 according to the World Bank Enabling the Business of Agriculture Index, a unique tool that measures the ease of doing agribusiness. The index scores on a scale of 0-100 the strength of the legal and institutional environment for agribusiness across eight topics: seed, fertiliser, machinery, finance, markets, transport, water, and ICT. The EBA highlights Uganda's warehouse receipt system as a optimum practice to create an enabling environment for the use of warehouse receipts as collateral for loans.

Uganda has a sound regulatory framework and administrative procedures for commercial cross-border transportation. The regionally-integrated and harmonised cross-border transportation throughout the East African Community (EAC) enables competition, increases the supply of transportation providers and ensures permits and licenses are reasonably priced.[15]

	Time to obtain cross-border license	Cost to obtain cross-border license (% income per capita)	Time to obtain rucking license	Cost to obtain trucking license (% of income per capita)
Uganda	2 days	29.9%	1 day	5.9%
EAC	5.7 days	34.4%	2.6 days	7.8%
Kenya	10.3 days	14.3%	1 day	2.2%
Rwanda	1 day	28.6%	7 days	21.5%
Tanzania	14 days	22.0%	3 days	4.7%

Uganda scores 75.65 out of 100 on the supplying seed indicator according to the World Bank Enabling Business of Agriculture. The country also has a vested interest to control the importation of potentially-dangerous chemicals used in fertiliser.

As per the World Bank's ease of doing business report 2019, Uganda is ranked 116 among 190 economies. The rank of Uganda improved to 116 in 2019 from 127 in 2018.This is an improvement of 11 places from the previous year. The Electricity Regulatory Authority made electricity regulatory reforms to have a sustainable electricity supply in the business sector, such as reliability of supply performance targets, the energy rebate, connection targets, quality services, regulations and processes. A number of reforms aimed at easing the process of doing business in Uganda have also been made by the Uganda Revenue Authority such as the Regional Electronic Cargo Tracking System (RECTS) which has seen the average transit time for e-monitoring done in 1.56 days national, 4.8 days regional against the non-monitored 5.4 days, operationalising of the One-Stop Border Posts (OSBPS), the Authorised Economic Operator Scheme, the centralised Document Processing Centre (DPC), and reforms in Clearing Agents Licensing.[16]

URSB has made changes as well, such as the creation of a doing business committee, introduction of tax payer Register Expansion Program, reducing procedures undertaken to register a business, a one-pager Memorandum & Articles of Association thereby reducing on the costs individuals incur upon this procedure and the formation of a one-stop shop to handle all URSB transactions.

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Necessary policy, legal and institutional support services

9.0 Necessary policy, legal and institutional support services

National policy and strategy for financing agriculture

There is need for an appropriate agricultural finance policy to address the institutional, regulatory, product, and skills constraints on the supply and demand sides that currently hinder the access and usage of agricultural finance in Uganda. Such a policy, if developed and complemented with appropriate changes to legislation, will result in effective inter-sectoral approach to de-risking of the agricultural sector, more agribusinesses becoming attractive to lenders and investors, increasing the uptake of agricultural credit and increased financing of the agriculture sector by government-owned financial institutions, with each concentrating on a segment where they have a comparative advantage and/or create mutually beneficial links between formal and informal agricultural finance providers of the sector.

There is also need for an effective legal and institutional framework for Tier-4 microfinance institutions whose products could be easier to tailor to the needs of farmers. The policy will have to spell out how the public sector can leverage commercial banking in improving access to credit for agriculture. Financing to agriculture continues to be less attractive to commercial banks because of the perceived risky nature of the sector. Therefore, improving financing to the sector requires additional components to credit like agricultural insurance and credit guarantee schemes to mitigate against the risks. These could all be addressed within an appropriate agricultural finance policy framework. At the national level, the Agricultural Finance Policy would be part of the broader efforts by the government towards the realisation of Uganda's Vision 2040.The policy would complement other policies, acts, bills and regulations, which all aim to improve the productivity, efficiency, profitability, resilience and viability of value chain actors in Uganda's agricultural ecosystem.[17]

Legal framework for truck licensing and operation

The legislation should be improved to include key requirements intended to improve product quality and safety, such as regulation for transportation of perishable goods and required documentation for domestic transport.

Regulatory environment for seed

There is still a wide variation in the regulatory environment for seed. For example, the variety registration takes 523 days in Uganda, which is in line with COMESA average but much longer than Kenya (322 days). Uganda should improve plant breeding by providing a publicly-available list of varieties that have been granted plant breeders rights protection and allow the licensing of those protected varieties to other parties for production and sale. Uganda scores low on seed quality and government should therefore engage the private sector in seed certification.[18]

Improvement of registration processes for fertiliser

The registration processes for fertiliser are too costly and burdensome in Uganda. The country has one of the lengthiest (663 days) and expensive (215.3% of income per capita) process to register fertilisers which limits competition and market access. The government should work towards reducing the high cost of registering as an importer and also lengthen the validity of import permits to boost fertiliser trade as it is a critical input in agricultural production.

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Financing options

10. Financing options

There are three key financing options for both local and foreign investors for the agricultural sector in Uganda. These include debt, equity or mezzanine (a combination of both debt and equity). The following subsections analyse each of the options in the context of the Ugandan agricultural sector.

10.1 Debt

Investors in agriculture in the Rwenzori region may obtain funding from locally-based financial institutions or foreign-based financial institutions. The table below summarises the locally-based financial institutions that can finance large projects in Agriculture.

Bank	Ownership	Total Assets in Billions	Market Share	Number of Branches
Stanbic Bank	Foreign	2,105 Millions	20.56	78
Standard Chartered Bank	Foreign	840 Millions	12.12	9
Centenary Bank	Local	950 Millions	10.37	63
DFCU	Foreign	939 Millions	7.72	62
Others	Several	2,066 Millions	49.23	334

The average local interest rates range from 16% to 30% per annum for loans obtained in Uganda and financed in local currency. The current Central Bank Lending Rate is 7%. This makes sourcing for capital in Uganda more expensive compared to international markets. Foreign investors may opt to obtain loans from more efficient international markets at LIBOR+1%.

Debt as a means of financing is recommended if obtained at affordable rates to finance interest payments. The projected finance models indicate a Debt Service Coverage Ratio (DSCR) averaging 1.16 to 4.52 times indicating the ability to finance loans at a cost of 8% per annum.

10.2 Equity

The average projected Return on Equity (ROE) is estimated to range from 17% to 25% on capital invested. This creates opportunity for both local and foreign investors to obtain maximum returns on their investments in the Rwenzori region.

10.3 Mezzanine

Investors can opt for a combination of both debt and equity to maximise the benefits of debt while also benefiting from equity from investors. The different scenarios of financing modelled yield a positive project internal rate of return.

10.4 Grant/Aid

There are several financing options from donors, development partners and multi-lateral organisations and social impact investors with the intention of having a positive impact in the lives of vulnerable poor in Uganda.

10.5 Asset-backed securities

There is need to establish more financing instruments for the cotton industry. One of the options includes use of Asset-backed securities. Asset-backed securities are bonds or similar instruments, which are backed by the cash flows generated by a project or projects (rather than being corporate bonds backed by the assets of a company as a whole). These cash flows form the basis and security for repayment. The process of raising finance in this way, secured against future cash flows, is frequently termed as securitization. Asset-backed securities are generally used for refinancing projects that are generating positive cash flows, although they can also be issued in the form of project bonds ahead of construction. Such refinancing offers a potential way to free up public funds that have been committed for development, thereby allowing these funds to be redeployed to support new projects. Use of the Asset-backed securities could be applied to a group of small farmers who can collectively associate to benefit from such instruments. This would require such farmers to be operating formally, with registered companies, books of accounts and clear organization structures and governance principles. The role of government is to ensure that such securities are developed through capital markets development. Given the level of risk associated with green-field projects in the cotton sub-sectors, there is a need for the government to create a credit enhancement scheme in order to assure the investors in the sectors.

11

Personnel planning

11. Personnel planning

11.1 Skills level

The skills level in the Rwenzori region is analysed in the context of Uganda's Human Development Index. Uganda's HDI value for 2018 is 0.528 — which put the country in the low human development category— positioning it at 159 out of 189 countries and territories.[19] The level of availability of skilled manpower in the Rwenzori region is low since majority of the population does not possess the skillsets to manage and operate complex agricultural projects.

Management roles requiring skilled manpower can be obtained from the capital – Kampala.

11.2 Staffing requirements/plan

To operate agricultural projects, the staffing requirements vary depending on the value chain. As an example, for the coffee and cotton value chain, the table below summarises the proposed personnel plan.

Position	Number	Gross Estimate	Net Pay	Pension	Net Pay
Production Engineer	1	8,000,000	5,723,000	400,000	5,323,000
Chief Finance Officer	1	7,500,000	5,373,000	375,000	4,998,000
Head Agronomist	1	5,000,000	3,623,000	250,000	3,373,000
Accountant	1	4,500,000	3,273,000	225,000	3,048,000
Inspection Specialists	10	3,000,000	2,223,000	150,000	2,073,000
Marketing Manager	1	4,000,000	2,923,000	200,000	2,723,000
Collection Agents	12	2,500,000	1,873,000	125,000	1,748,000
Store Managers	5	1,500,000	1,173,000	75,000	1,098,000
Casuals	Various	1,000,000	823,000	50,000	773,000
Field Agents	30	900,000	753,000	45,000	708,000
Accounts Assistants	Various	900,000	753,000	45,000	708,000
Inspection Assistants	Various	700,000	613,000	35,000	578,000
Drivers	Various	600,000	543,000	30,000	513,000

The proposed personnel plan can be applied to other agricultural value chains with slight modifications.

19 *Briefing note for countries on the 2019 Human Development Report for UNDP*

12

Social, economic and environmental sustainability

12. Social, economic and environmental sustainability

Sustainable Development Goals and 2030 Agenda

In 2015, the United Nations (UN) approved the 2030 Agenda for Sustainable Development, which set in motion the Sustainable Development Goals (SDGs). The 17 goals are designed to take a holistic approach to address the social, economic and environmental aspects of sustainable development. Investment in Uganda's agricultural sector is one of the gateways through which the SDGs will be attained, especially those relating to ending hunger and malnutirition, doubling agricultural productivity and incomes of small-scale food producers. Approximately 25% percent of the Ugandan population is malnourished despite the fact that the country produces a wide variety of foods and is generally food secure.[1]Investors might embark on efforts that are focused on improving the diet of average Ugandans, including diversity, dietary knowledge and social protection programs. In addition, investors could strengthen linkages between reseach, extension and farmers to promote uptake of agricultural technologies developed. The private sector is central in achieving the social, economic and environmental goals within the agricultural sector.

The poverty goals aim at ending poverty in all its forms everywhere. A big proportion of the poor in the Rwenzori region are engaged in the agricultural sector and therefore investing in this sector is central to its growth and development as well attainment of the SDGs on poverty since it facilitates the intergration of smallholder farmers with the Rwenzori region into high value chains that generate better prices and incomes for smallholder farmers and support better post-harvest handling.

Achieving the social goal of reduced social inequality— especially gender inequality — is dependent on improving access to economic resources such as land, natural reosurces, financial services and technology for women and marginalised groups. Investors should focus on emancipating these groups to improve agricultural productivity, reduce regional inequalities, and also achieve sustainaible incomes.

Environmental goals including climate action, sustainable production and consumption as well as management and preservation of natural resources and biodiversity are intergral to investment in the agricultural sector. Management of environmental externalities as a result of agricultural production such as green house gas (GHG) and non-GHG emissions, ground water depletion, and soil degradation are significant concerns to increase food production in order to meet the the food demands of the growng population in the Rwenzori region taking into account the need for sustainable production and consumtpion as a mitigation and adpatation strategy in the fight against climate change and wastage, especially for food and natural resources.[2]

[1] CAADP Biennal Review Brief Uganda

[2] Transforming small holder agriculture to achieve the SDGs

12.1 Social sustainability

The agriculture sector investment profile has generated various investment opportunities across several stages of the value chain. These projects focus on the concept of social accountability with emphasis on promoting the betterment of the lives of people within the Rwenzori Region. This has broadly focused on issues like environmental law, human rights, and public involvement and participation in all projects that are proposed. Putting an emphasis on social sustainability in implementing the proposed projects should strengthen other spheres of sustainability. The following text, we discuss the concept of social accountability as it relates to the respective value chains.

Coffee

The social sustainability includes giving appropriate respect and care to workers and families involved in coffee production and the supply chain.[20] A sustainable coffee business should have the support and approval of its employee's stakeholders and the community it operates in. Approaches to securing and maintaining social sustainability are various, but it comes down to treating employees fairly and being a good neighbour and community member, both locally and globally.

As a rule of thumb, all children should go to school. Outside school hours, they may do light work on the coffee farm under adult supervision. This helps the children to learn about the farm and they can help with practices such as record keeping. Children should not participate in hazardous activities such as spraying chemicals or carrying heavy loads.

On the employee side, the coffee businesses should focus on retention and engagement strategies, including more responsive benefits such as better maternity and paternity benefits, flexible scheduling and learning and development opportunities. For community engagement, the coffee business should come up with many ways to give back, including fundraising, sponsorship, scholarships and investment in local public projects.

Coffee workers should be treated with respect. A fair rate for jobs should be agreed and paid when work is completed or as agreed. All payments should be recorded. Workers should have access to clean and safe drinking water, clean toilets and protective gear.

Cotton

The widespread use of genetically- modified cotton crops adds another ethical dimension. Around 50% of cotton grown is genetically-modified. It is argued that genetic modification improves resistance of the crop to pests, meaning that fewer chemicals need to be sprayed. However, it has been shown that this may be the case in the first few seasons, but as pests adapt over successive seasons, the gains are quickly lost and the hardiest pests survive to consume the crop, and larger amounts of pesticide are again required. GM crops are patented and controlled by the company that develops them. This means that farmers cannot legally save seeds from one season to plant in the next, and they are required to buy a new supply of seeds each season, ensuring that farmers continue to be dependent upon the company that developed the seed. With the costs of pesticides already such a burden, the costs of GM seeds adds another financial burden that keeps many farmers on the brink of bankruptcy, and a failed season or a drop in world cotton prices in many cases cannot be weathered. The use of GM makes huge profits for multinational corporations, but the farmers who grow the crop see very little benefit and in many cases become more vulnerable than those who avoid using GM.

Cotton is a natural fibre that is extremely useful for textile manufacture. Therefore, to make cotton more ethical and sustainable, the following is proposed.

Fair-trade cotton ensures that workers are given protective gear to avoid the health impacts of pesticide use. Fair-trade also offers a fair price for the cotton, shielding farmers from the price fluctuations of the global market and the additional price gives them a buffer to weather years of crop failure.

20 National Coffee Policy (NCP) and National Coffee Strategy (NCS) 2019

Use organic cotton; Organic cotton ensures that no pesticides or chemical fertilisers are used, minimising the impact on the environment. Rain-fed organic cotton would be the most sustainable choice, as it avoids the environmental harms associated with crop irrigation. There are also some low impact non-organic options, which are used in a limited manner.

Biological Integrated Pest Management uses natural methods of controlling pests so that fewer chemicals are required to grow the crop.

Finally, there are traditional varieties of cotton, farmed by smallholder farmers using traditional methods and techniques. This is particularly the case with Ethiopian cotton, as Ethiopia was one of the first places to cultivate cotton in the world, and methods have changed little in recent times. Although this cotton is not certified as organic, the processes used are well-suited to the local environment and it can be considered a sustainable option.

Another sustainable alternative to organic cotton is recycled cotton. This uses the off-cut waste from factories to produce new textiles, saving fabric that would otherwise end up in landfill.

In conclusion, sustainability is a critical issue that has to be addressed by investors across all the proposed value chains to ensure betterment of the communities where the projects are implemented.

12.2 Economic sustainability

Economic Sustainability is a critical pillar in developing the Agriculture Sector Investment Profiles. The proposed projects were made with the understanding that they are the most equitable and fiscally-sound projects considering all other aspects of sustainability especially betterment of society with long-term benefits within the Rwenzori region. The following was proposed: a blend of good business practices with social and environmental aspects of sustainability to ensure positive results through large-scale employment, education and betterment of communities.

For example, proposed tax breaks from government, especially for organic produce from farmers, financial support and capacity building to ensure labour is skilled to support larger farms, training in post-harvest handling both on the farm and at the stores, as well as good agronomic practices. The following text describes economic sustainability in the context of the proposed value chains.

Coffee

Economic Sustainability is where the coffee businesses feel they are on firm ground. To be sustainable, a coffee business must be profitable. However, profit cannot justify the overdominance at all costs. In fact, profit at any cost is not at all what the governance pillar is about. Activities that fit under here include compliance, proper governance and risk management. Farmers need to sustain productivity and quality at farm-level by keeping good records. This helps them to evaluate the impact of different good agricultural and post-harvest practices.

One important economic consideration of sustainability is the role of gender and youths in coffee farming. Sustainable business of the coffee sector, especially in smallholder-dominated production systems, is often hampered by unequal distribution of information, labour, skills and other resources and benefits across gender and youth within coffee-farming families. In many coffee-producing countries, young boys and girls do not find an attractive future in the coffee farms of their parents. Coffee businesses will increase their efficiency, profitability and sustainability if they promote gender and youth equity due to the following:

- Women are an important source of labour in coffee production yet they have limited access to resources and benefits in the coffee value chain;
- This results in many missed business opportunities for this category. Productivity and quality can easily be improved in the coffee value chain by providing more support and opportunities to women than they are currently;
- Youths form the majority of the population in Uganda. Integrating and attracting the youths in coffee value chains will ensure continued productivity and business sustainability.

The investor should establish mechanisms of addressing gender and youth economic participation in the coffee value chains

Coffee certification programs

The basic rationale behind certification for coffee growing is that consumers are willing to pay more (a premium) for coffee that is of a higher quality standard or is farmed using practices that are more sustainable and traceable. The process of accreditation should be pursued if farmers stand to make a commercial gain from it. Therefore each individual farm/farmer group (depending on the standard) must consider independently whether the benefits achieved from certification outweigh the costs involved with implementing the desired standard.

Certifications based on the production and processing standards employed along the supply chain are monitored and communicated to consumers through the use of "marks"/"seals" which can be used on product packaging/advertising. However, certification is usually a lengthy process and is very expensive as producers must pay fees for the assessments as well as bearing the costs associated with certification compliance monitoring. Therefore many producers find it difficult to afford being accredited with more than one scheme. Knowing which certifications to prioritize because they are most applicable and brings the most benefit is therefore of vital importance.

Considering that there is a multitude of different standards offered worldwide, it is prudent for producers to choose a certification scheme that is specific to their target market. For example, if all of the coffee grown from a farm were sold into the US market, then being certified u nder U SA Organic Regulation (the USDA National Organic Programme would be of considerable benefit. Organic operators certified in accordance with any of the standards in the family can apply for use of the mark on their products and therefore use the mark identifiable t o a specific region or the more general International Federation of Organic Agricultural movement (IFOAM mark.

Farmers in Uganda can choose to practice and adhere to any of the following Coffee Certification Programs (1 Organic Certification (2 Fairtrade, Certification (3 Rainforest Alliance Certification (4 Smithsonian Bird-Friendly Certification (5 4C Common Trade for Coffee Commodities Certification and (6 Starbucks C.A.F.E Practices.

Employment by coffee

Category	Estimated number (CY 2017/18)	Total estimated number of people depending on coffee
Seed suppliers[25]	21 (2 Permanent;[26] 3 casual)	105
Nursery operators	2,546 (2 Permanent;[27] 5 casual)	17,822
Farmers	1,700,000 (3 permanent[28] & 4 casuals per farmer)	11,900,000
Store men	715 (3 per store)	2,145
Washing stations	22 (5 per washing station)	110
Primary processors	537 (5 permanent[29] & 4 casual factory)	4,833
Exporters	72 (10 permanent[30] & 210 casual workers)	151,200
Roasters	17 (5 per roaster)	85
Cafes/coffee shops	120 (10 per café)	1,200
Total		**12,077,500**

25 *The Agri-business scan for Uganda page 21*
26 *Fostering a sustainable Agro-Industrialisation Agenda in Uganda page 11*
27 *Fostering a sustainable Agro-Industrialisation Agenda in Uganda page 11*
28 *National Agriculture Policy 2013 page 13*
29 *2015/16-2019/20 Agriculture Sector Strategic Plan page iii*
30 *2015/16-2019/20 Agriculture Sector Strategic Plan Page Viii*

Cotton

Economic sustainability for cotton involves coordination, collaboration and the cooperation of stakeholders, in order to ensure the multiplier effects from the social and environmental development of cotton growing in the local economy. The many products of cotton and its nature require that its development be accompanied by efficient planning and management processes that are based on the fundamental principles of sustainability.

Discrepancies between national government structures and local government perspectives often tend to create a space for the dominance of local, private interests rather than on strategies that lead to socially- fair development, which takes into account the needs of local residents. Effective management, frequent institutional, economic and social changes were added, which make cooperation and governance difficult, in an environment of shifting governance modes. These shifts in modes are a recent focus of the cotton sector governance, along with some key concerns related to mobility.

Cotton projects will involve an increasingly networked set of inter- relationships between actors in the public, private and third sectors, and should bring together farmers, processors in the private sector, regulators and the traditional institutions of the state with an interest in cotton development, in order to achieve the sustainable management of cotton sector. With this in mind, a broad range of cotton sector governance related issues, including policy, market, risk management, capacity studies, the quality of product, competitiveness, environmental impacts, digitalization will be considered while setting up these projects.

12.3 Environmental sustainability

Coffee

The environmental pillar ensures that adequate attention is given to the protection of the natural environment. A coffee farmer (and investor) should think about the environment around his/her land and the long-term impact of his/her farming methods. The farmer should also think about packaging wastewater management, waste management, water usage and their overall effect on the environment, energy conservation and safe storage and application of agro-chemicals and disposal of packaging material. Prevention of water and environment pollution is of critical concern and serves many purposes. For example, if a farmer washes pulped parchment coffee in the river, water for all the neighbours down stream will be contaminated.

Therefore, pulped coffee should be washed in a container away from the water source. Also chemical sprays should be used away from the water sources. In terms of waste management, it is important for the farmer to separate organic and inorganic waste so that compost can be made from the organic waste to improve the soil. All chemical containers should be punctured to prevent reuse and disposed of safely. All plastic and metal waste should be kept safely until the time for their safe disposal. Agro- chemicals may be dangerous if not properly stored and used safely. In case of disposal, the Uganda National Bureau of Standards agents or National Environment Management Authority (NEMA) officers should be consulted for advice. The following guidelines should be adhered to when using chemicals:

- Always wear full protective gear, such as head cap, nose and mouth masks, overalls, gumboots, eye goggles, gloves and gum boots when handling or spraying chemicals;
- Do not spray near other people, livestock or water sources;
- Do not spray when it is windy. Do not spray against the direction of the wind;
- Make sure that you warn other people before and after spraying;
- Banned chemicals such as Endosulfan, Paraquat, Actellic Super, Ambush, among others, should not be used;
- Chemicals should be kept in a locked place out of the reach of children and away from food and stored crops. If possible, keep them in a separate store.

Energy and water are precious resources that need to be harnessed and used with care. A farmer should plant multipurpose trees for shade and fuel supply. Always use energy-saving stoves and solar energy appliances where possible. Explore the possibility of biogas from livestock manure and other sources. Rooftops and

runoff rainwater should be collected in water tanks and trenches or ponds for irrigation and moisture retention during dry spells.

Cotton

Cotton is responsible for 25% of the world's pesticide use. That is a substantial amount of petrochemicals, which are being poured into our soils, running into our waterways and poisoning our environment. The World Health Organisation considers half of these chemicals to be hazardous to the environment and human health. Due to this fact, cotton has been dubbed 'the world's dirtiest crop'. Most of the world's cotton crops are grown in developing countries where environmental laws and regulations are lax. Many harmful chemicals that are banned are still manufactured by developed world multinationals and sold in developing countries. So we have good reason to be concerned about the impact of cotton on the communities and ecosystems in the countries where the crop is grown. This is not to mention that commercial pesticides are derived from petrochemicals, a non-renewable resource with a significant carbon impact. Estimates of the carbon impact of cotton vary, but is it believed that somewhere between 0.3% and 1% of global carbon emissions come from cotton production. This equates to 6.5kg of carbon emissions to produce one large unisex cotton t-shirt.

The significant reliance on pesticide use also had significant social impacts that shouldn't be overlooked. Cotton crops in the developing world are often cared for and harvested by the rural poor, and in many instances they have minimal access to protective clothing when working with the harmful chemical pesticides and fertilisers used on the crops. The World Health Organisation estimates that there are approximately 3 million pesticide poisonings per year worldwide, resulting in 20,000 deaths, and most of these are attributed to the cotton industry. Cotton is a crop that is highly vulnerable to pests, and conventional cotton farming is reliant on pesticides to ensure a good yield for the crop. This means that pesticides inputs are a huge financial burden for farmers, especially when world cotton prices fall, or drought conditions lead to crop failure.

Beside the environmental and social harms related to pesticide use, cotton is also an extremely water-hungry crop. In many cases water is diverted from natural ecosystems to irrigate cotton crops, putting enormous pressure on the natural environment. Of all the natural fibres, cotton is by far the thirstiest crop, using many times the water needed to grow hemp, bamboo, flax or other cellulose crops such as eucalyptus. Around 50% of world cotton crops are rain-fed, meaning that the harms of irrigation are avoided. However, rain-fed cotton is still a thirsty crop, which uses water resources, which in some locations may potentially be better used for food crops. Furthermore, in regions of high rainfall, the chemical run off from cotton farms has been known to pollute the local water supply. So whilst rain-fed cotton may be a better choice in terms of water use, it may be a worse choice in terms of the effect on the water quality in the region that it is grown.

13

Support pre-/ post- investment

13. Support pre-/post-investment

13.1 Pre-investment

The support needed for pre- and post- investment for the agricultural sector include the following:

Farmer training

Farmers need training across the region in Good Agronomic Practices (GAP) both on the farm and at the warehouse/stores. In addition, post harvest handling practices need to be improved since quality is lost due to poor handling of the produce both on the farm and at the stores.

Advocacy and lobbying

Advocacy and Lobbying support is important to ensure agriculture-related policies and procedures that promote economic development and empowerment within the Rwenzori region. This will ensure an increase in government spending on agriculture, ease importation and handle tax related issues for the investor.

Taxation

One of the critical aspects of investment in the Rwenzori region are aspects of taxation of imports, exports, and licencing. There are tax waivers for investors within the region that can be utilised for investment in the region.

13.2 Post-investment

In addition to the pre-investment factors where support will be needed, establishment of a mechanism to track performance through a Monitoring and Evaluation System is paramount. This will help monitor returns in a timely manner.

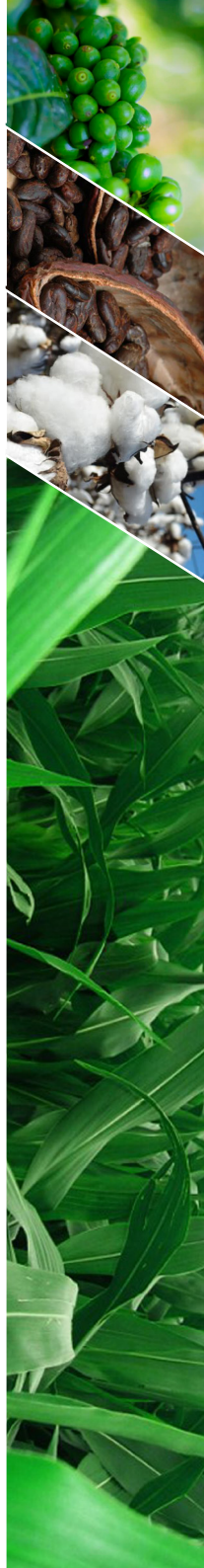
14

Risk assessment

14. Risk assessment

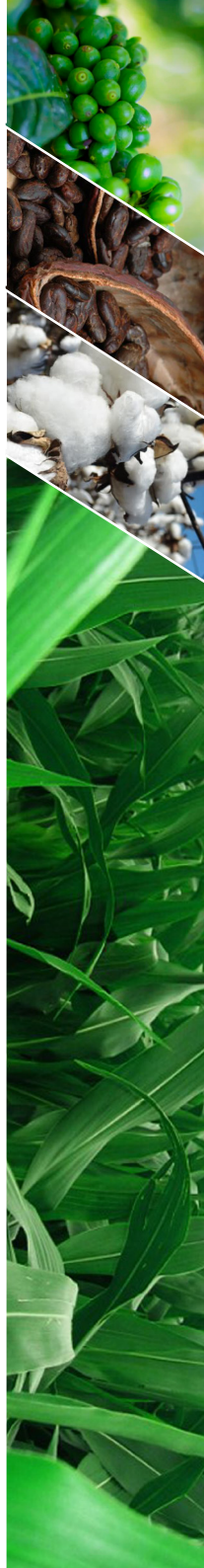
The table below summarised the risk identification, quantification and management strategies for the agricultural sector.

Types of risk	Risk consideration	Possible scenario	Likeliness (high , med, low)	Impact level (fatal, manageable)	Mitigating action **taken** by the firm NOW	Recommended actions	Priority (high, med, low)
Low production/ yield from the farms	Poor agronomic practices	Poor post-harvest handling both on the farm and at the warehouses	Medium	Manageable			
Lack of access to markets internationally	Poor markets and marketing infrastructure for many crop enterprises		Medium	Manageable			
	Landslides, floods, reduced rainy season, Shift of rainy seasons from (September-November) and (March-May), rising temperatures and erratic rainfal	• Loss of fertile soils disrupting agricultural production; • Increased land pressures due to search for fertile soils and semi-displacement of people when floods occur • Reduction in crop yields • Destruction of irrigation infrastructure leading to a reduction in crop yields;			• Irrigation schemes have been set up. MAAIF has managed to construct 711 water projects for production facilities in 54 districts. There has also been rehabilitation of three major irrigation schemes in the country namely Mubuku Irrigation Scheme, Doho in Butaleja and Agolo in Lamwo district;	• Promote and encourage highly-adaptive and productive crop varieties in flood-prone, and rain-fed crop farming systems; • Promote and encourage conservation agriculture and ecologically-compatible cropping systems to increase resilience to the impacts of climate change;	



Types of risk	Risk consideration	Possible scenario	Likeliness (high, med, low)	Impact level (fatal, manageable)	Mitigating action **taken** by the firm NOW	Recommended actions	Priority (high, med, low)
Climate Risk	Landslides, floods, reduced rainy season, Shift of rainy seasons from (September-November) and (March-May), rising temperatures and erratic rainfall	• Destruction of irrigation infrastructure leading to a reduction in crop yields; • Distortion of growing seasons and confusing farmers on deciding on timing for planting activities as well as a reduction in water-harvesting • Increased disease and pest infestation	High	Manageable	• Transferring of risk to a third party (Insurance company) for a small fee (premium). The Insurance Regulatory Authority has approved several agriculture insurance products from different insurance companies. Majority of the insurance products address risks associated with the productive stage of agricultural production like un-predictable weather hazards,	• Strengthening water harvesting and irrigation farming to build resilience to floods; • Promote and encourage agricultural diversification and improved post-harvest handling, storage, value addition and marketing; • Support community based adaptation strategies through expanded and climate smart extension services	Med

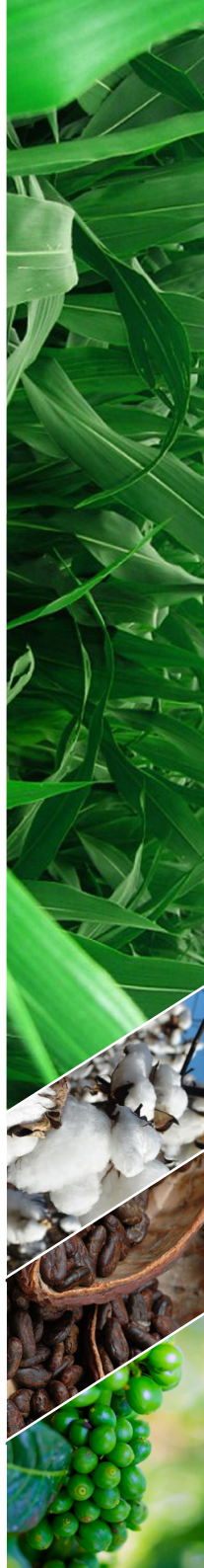
Types of risk	Risk consideration	Possible scenario	Likeliness (high, med, low)	Impact level (fatal, manageable)	Mitigating action **taken** by the firm NOW	Recommended actions	Priority (high, med, low)
Input risk	Adulterated counterfeit inputs/Unskilled application of inputs	Destruction of crops which affects yields; Rejection of crops by exporters and retail food companies Significant losses in agricultural productivity	Med	Manageable	• MAAIF finalised the National Seed Policy aimed at improving quality assurance in the seed sector	• Educating farmers and various actors in the agriculture value chain on how to differentiate between fake and counterfeit inputs and how to apply inputs at the various stages of crop growth • Strengthen then Ugandan Laws with enforcement guidelines and stiff penalties for counterfeit goods; • Strengthening mechanisms to enforce the exiting legal and policy frameworks to guard against these risks	High



Types of risk	Risk consideration	Possible scenario	Likeliness (high, med, low)	Impact level (fatal, manageable)	Mitigating action **taken** by the firm NOW	Recommended actions	Priority (high, med, low)
Market and Price Risk	Non-compliance with quality and export standards	Export bans making it difficult to regain access to the export market	Med	Manageable	• MAAIF instituted a department for crop inspection to provide support in complying with regional and international standards; • Ministry of Agriculture in Liaison with the Uganda Export Promotion Board work to build the capacity of exporters to comply with the export market requirements; • Annually the UEPB conducts up to four regional export information dissemination activities which target producers and other actors in the agricultural export value chains	• Refine policy and regulation on warehouse produce quality standards to ensure conformity to testing procedures and standards of regional market and dominant buyers such as the WFP • Build capacity of UNBS to implement quality standards across the various agriculture value chains	High

Types of risk	Risk consideration	Possible scenario	Likeliness (high, med, low)	Impact level (fatal, manageable)	Mitigating action **taken** by the firm NOW	Recommended actions	Priority (high, med, low)
	Price fluctuations	Loss of revenue	High	Fatal	• A range of price-setting mechanisms are applied that provide some level of protection; • Uganda currently has a warehouse receipting system in place a mechanism that offers storage facilities to protect farmers from seasonal price risks, the system of safer storage in warehouses allows farmers to keep their commodities for months after harvest. In the process they may sell later when the produce are out of season;	• Improving the existing marketing information systems to disseminate information about agricultural prices • Price-fixing of major commodities by the Ugandan government • Raise awareness of farmers on price risk exposure through use of extension workers	High

Types of risk	Risk consideration	Possible Scenario	Likeliness (High, med, low)	Impact level (fatal, manageable)	Mitigating action **taken** by the firm NOW	Recommended actions	Priority (high, med, low)
Biological and environmental risk	Crop pests and disease	• Crop losses • Low crop yields	High	Fatal	• Under the support of PARM, CABI has developed a comprehensive Plant Health Investment Plan for Uganda to upgrade the Uganda Plant Pest Management system and make it sustainable.33 • In the Rwenzori region for example, RIC-NET in collaboration with Plantwise Uganda with support from CABI UK are implementing a plant clinic project in the border districts of Bundibugyo and Kasese.This project code named Healthy plants for helathy people aims at supporting farmers to fight crop pests and diseases. This intervention has helped in ensuring reduced crop pests and diseases, higher yields, enhanced food security and boosted incomes at the household level[34]	• Establish a Pest surveillance system to provide early warning • Improve access to pest management services through improving farmer awareness of pest and disease management; • Improve farmer access to high quality inputs; • Increase the proportion of the ASSP budget allocated to crop protection • Develop the capacity of the Department for Crop Production (DCP) to fulfil it's responsibilities to achieve an effective national pest management system; • Operationalisation of emergency pest response plans; • Effective pest monitoring at border points decreasing risk of new pest incursions	High



Types of risk	Risk consideration	Possible scenario	Likeliness (High, Med, Low)	Impact level (fatal, manageable)	Mitigating action taken by the firm NOW	Recommended actions	Priority (high, med, low)
Logistical and infrastrucutral risk	Lack of sufficient storage capacity at both farm level and the crop trading system	High losses for farmers due to attacks from pests and animals	High	Fatal	Post-harvest losses are at the centre of a few recently implemented initiatives, notably a project on Post-Harvest Food Loss Reduction by the World Food Programme that has reached 16600 farmers since 2014.	• Enhance knowledge and skills of post-harvest losses among farmers; • Strengthen coordination and collaboration of various actors in agriculture sector for efficient and effective implementation of post-harvest management actions	High

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Appendices

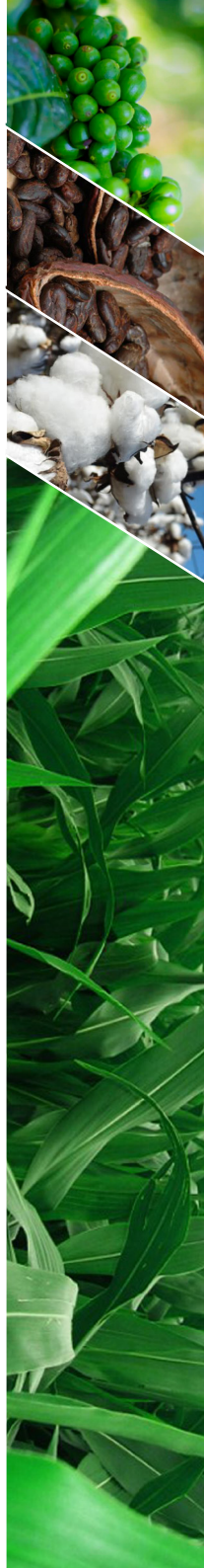
15. Appendices

15.1 Coffee value chain – financial statements

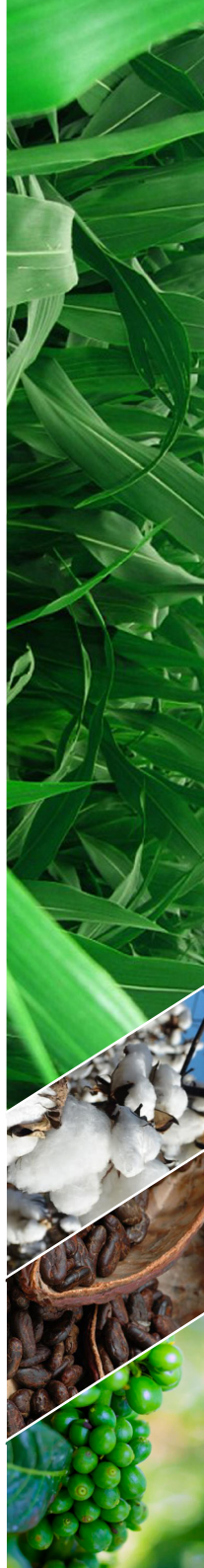
The financial statements include the statement of comprehensive income, statement of financial position and the statement of cashflows based on the Base Case/Average Case scenario and an equal split between debt and equity for a five-year period of business operation. During the modelling process, we have modelled various scenarios as part of the sensitivity analysis.

Statement of comprehensive income

	Year 1	Year 2	Year 3	Year 4	Year 5
Income Statement					
Parchment coffee	84,656,000	61,776,000	66,718,080	72,055,526	77,819,969
Green coffee	380,952,000	277,992,000	300,231,360	324,249,869	350,189,858
Roast and ground - local	2,197,800,000	1,603,800,000	1,732,104,000	1,870,672,320	2,020,326,106
Roast and ground - international	4,639,800,000	3,385,800,000	3,656,664,000	3,949,197,120	4,265,132,890
	7,303,208,000	**5,329,368,000**	**5,755,717,440**	**6,216,174,835**	**6,713,468,822**
Opening stock	-	411,216,667	444,114,000	479,643,120	518,014,570
Purchases	1,258,000,000	918,000,000	991,440,000	1,070,755,200	1,156,415,616
Closing stock	411,216,667	444,114,000	479,643,120	518,014,570	559,455,735
Cost of sales	**846,783,333**	**885,102,667**	**955,910,880**	**1,032,383,750**	**1,114,974,450**
Direct costs					
Loading to pulping centre	7,400,000	5,400,000	5,832,000	6,298,560	6,802,445
Loading to transport centre	14,800,000	10,800,000	11,664,000	12,597,120	13,604,890
Offloading	7,400,000	5,400,000	5,832,000	6,298,560	6,802,445
Pulping	22,792,000	16,632,000	17,962,560	19,399,565	20,951,530



	Year 1	Year 2	Year 3	Year 4	Year 5
Income Statement					
Drying	4,070,000	2,970,000	3,207,600	3,464,208	3,741,345
Loading dry parchment	1,628,000	1,188,000	1,283,040	1,385,683	1,496,538
Transport to market	6,512,000	4,752,000	5,132,160	5,542,733	5,986,151
Commission expenses	8,140,000	5,940,000	6,415,200	6,928,416	7,482,689
Hulling expenses	11,396,000	8,316,000	8,981,280	9,699,782	10,475,765
Grading expenses	17,908,000	13,068,000	14,113,440	15,242,515	16,461,916
	102,046,000	74,466,000	80,423,280	86,857,142	93,805,714
Gross profit	**6,354,378,667**	**4,369,799,333**	**4,719,383,280**	**5,096,933,942**	**5,504,688,658**
Gross profit margin	**87%**	**82%**	**82%**	**82%**	**82%**
Pre-incorporation costs					
Farmers groups	1,100,000,000				
Administrative expenses					
Telephone & internet	18,000,000	19,440,000	20,995,200	22,674,816	24,488,801
Stationery & print	20,000,000	21,600,000	23,328,000	25,194,240	27,209,779
Transport & travel	315,000,000	340,200,000	367,416,000	396,809,280	428,554,022
Internet & website hosting	1,200,000	1,296,000	1,399,680	1,511,654	1,632,587
Computer & other equipment repairs	90,000,000	97,200,000	104,976,000	113,374,080	122,444,006
Audit fees	12,000,000	12,960,000	13,996,800	15,116,544	16,325,868
Cleaning expenses	72,000,000	77,760,000	83,980,800	90,699,264	97,955,205
Office rent	240,000,000	259,200,000	279,936,000	302,330,880	326,517,350
Insurance	180,000,000	194,400,000	209,952,000	226,748,160	244,888,013
Bank charges & commission	120,000,000	129,600,000	139,968,000	151,165,440	163,258,675
Trading licence	15,000,000	16,200,000	17,496,000	18,895,680	20,407,334
	1,083,200,000	**1,169,856,000**	**1,263,444,480**	**1,364,520,038**	**1,473,681,641**



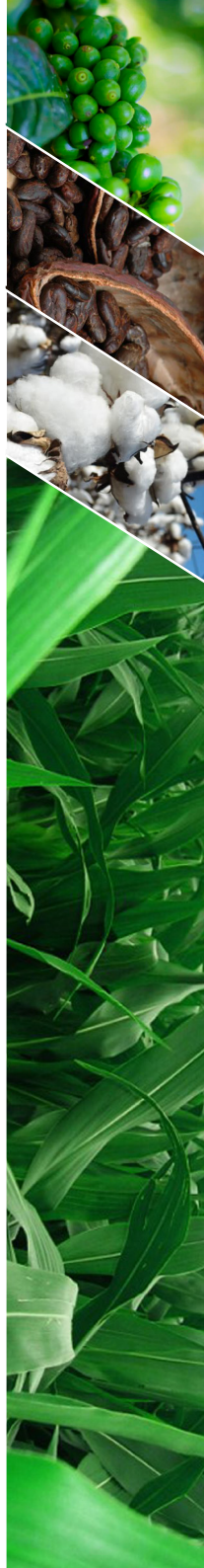
	Year 1	Year 2	Year 3	Year 4	Year 5
Income Statement					
Staff expenses					
Salaries and wages	600,000,000	648,000,000	699,840,000	755,827,200	816,293,376
Staff uniforms	30,000,000	32,400,000	34,992,000	37,791,360	40,814,669
Staff meals	420,000,000	453,600,000	489,888,000	529,079,040	571,405,363
Medical expenses	45,000,000	48,600,000	52,488,000	56,687,040	61,222,003
	1,095,000,000	1,182,600,000	1,277,208,000	1,379,384,640	1,489,735,411
Sales & marketing & distribution					
Marketing	75,000,000	81,000,000	87,480,000	94,478,400	102,036,672
Coffee shop leases	35,000,000	37,800,000	40,824,000	44,089,920	47,617,114
Advertising & publicity	12,000,000	12,960,000	13,996,800	15,116,544	16,325,868
Business consultancy	90,000,000	97,200,000	104,976,000	113,374,080	122,444,006
Bidding expenses	4,000,000	4,320,000	4,665,600	5,038,848	5,441,956
	216,000,000	233,280,000	251,942,400	272,097,792	293,865,615
Total operating expenses	2,394,200,000	2,585,736,000	2,792,594,880	3,016,002,470	3,257,282,668
EBITDA	3,960,178,667	1,784,063,333	1,926,788,400	2,080,931,472	2,247,405,990
EBITDA margin	54%	33%	33%	33%	33%
Depreciation expenses	58,530,000	195,815,000	209,135,000	209,135,000	209,135,000
Loan Interest expenses	302,000,000	302,000,000	226,500,000	151,000,000	75,500,000
Total expenses	360,530,000	497,815,000	435,635,000	360,135,000	284,635,000

	Year 1	Year 2	Year 3	Year 4	Year 5
Income Statement					
Net Profit/loss	3,599,648,667	1,286,248,333	1,491,153,400	1,720,796,472	1,962,770,990
Margin					
Corporation tax	1,079,894,600	385,874,500	447,346,020	516,238,942	588,831,297
Profit after tax	2,519,754,067	900,373,833	1,043,807,380	1,204,557,530	1,373,939,693

Statement of financial position

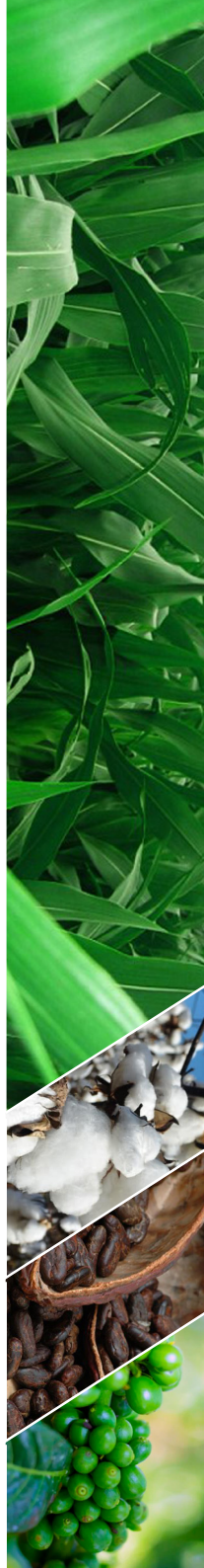
BALANCE SHEET	Year 1	Year 2	Year 3	Year 4	Year 5
Non-current assets					
Property and equipment	1,061,470,000	1,065,655,000	1,256,520,000	1,047,385,000	838,250,000
Total non-current assets	1,061,470,000	1,065,655,000	1,256,520,000	1,047,385,000	838,250,000
Current assets					
Inventories	411,216,667	444,114,000	479,643,120	518,014,570	559,455,735
Trade and other receivables	205,608,333	222,057,000	239,821,560	259,007,285	279,727,868
Currenttax recoverable					
Cash and cash equivalents	5,107,099,500	4,982,881,900	5,666,998,560	6,715,062,993	7,931,647,340
Total current assets	5,723,924,500	5,649,052,900	6,386,463,240	7,492,084,847	8,770,830,943
Total assets	6,785,394,500	6,714,707,900	7,642,983,240	8,539,469,847	9,609,080,943

BALANCE SHEET	Year 1	Year 2	Year 3	Year 4	Year 5
Equity and liabilities					
Equity					
Share capital	1,670,000,000	1,770,000,000	1,970,000,000	1,970,000,000	1,970,000,000
Share premium					
Capital reserve					
Accumulated losses	2,519,754,067	3,420,127,900	4,463,935,280	5,668,492,810	7,042,432,503
Total equity	**4,189,754,067**	**5,190,127,900**	**6,433,935,280**	**7,638,492,810**	**9,012,432,503**
liabilities					
Non-current liabilities					
Debt	1,510,000,000	1,132,500,000	755,000,000	377,500,000	-
Total non-current liabilities	**1,510,000,000**	**1,132,500,000**	**755,000,000**	**377,500,000**	-
Current liabilities					
Trade payables	5,745,833	6,205,500	6,701,940	7,238,095	7,817,143
Tax payable	1,079,894,600	385,874,500	447,346,020	516,238,942	588,831,297
Overdraft	-	-	-	-	-
Other payables					
Interest on borrowings					
Total current liabilities	**1,085,640,433**	**392,080,000**	**454,047,960**	**523,477,037**	**596,648,440**
Total equity and liabilities	**6,785,394,500**	**6,714,707,900**	**7,642,983,240**	**8,539,469,847**	**9,609,080,943**

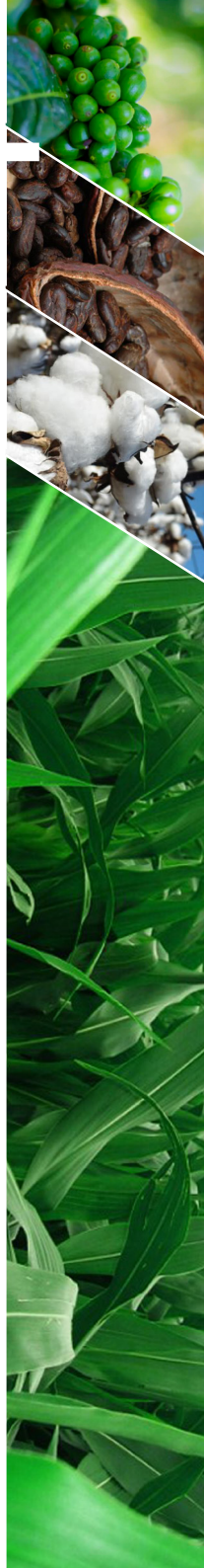


Statement of cash flows

STATEMENT OF CASHFLOWS	Year 1	Year 2	Year 3	Year 4	Year 5
Cashflows from operating activities					
Profit/Loss before tax	3,599,648,667	1,286,248,333	1,491,153,400	1,720,796,472	1,962,770,990
Adjustments for:					
Depreciation of property and equipment	58,530,000	195,815,000	209,135,000	209,135,000	209,135,000
Interest	302,000,000	302,000,000	226,500,000	151,000,000	75,500,000
Adjusted profit	**3,960,178,667**	**1,784,063,333**	**1,926,788,400**	**2,080,931,472**	**2,247,405,990**
Changes in operating assets and liabilities					
Increase in inventories	(411,216,667)	(32,897,333)	(35,529,120)	(38,371,450)	(41,441,166)
Decrease/ (increase in trade and other receivables)	(205,608,333)	(16,448,667)	(17,764,560)	(19,185,725)	(20,720,583)
Increase in trade and other payables	5,745,833	459,667	496,440	536,155	579,048
Cash generated from operations	**(611,079,167)**	**(48,886,333)**	**(52,797,240)**	**(57,021,019)**	**(61,582,701)**
Working Capital Adjustment	(611,079,167)	(48,886,333)	(52,797,240)	(57,021,019)	(61,582,701)
Income Tax Paid		(1,079,894,600)	(385,874,500)	(447,346,020)	(516,238,942)
Net cash generated from operating activities	**3,349,099,500**	**655,282,400**	**1,488,116,660**	**1,576,564,433**	**1,669,584,347**
Cashflows from investing activities					
Property and equipment	(1,120,000,000)	(200,000,000)	(400,000,000)	-	-
Net cash used in investing activities	(1,120,000,000)	(200,000,000)	(400,000,000)	-	-
Cashflows from financing activities					
Share capital	1,670,000,000	100,000,000	200,000,000	-	-



STATEMENT OF CASHFLOWS	Year 1	Year 2	Year 3	Year 4	Year 5
Debt	1,510,000,000				
Repayment of borrowings	-	(377,500,000)	(377,500,000)	(377,500,000)	(377,500,000)
Interest payment	(302,000,000)	(302,000,000)	(226,500,000)	(151,000,000)	(75,500,000)
Net cash used in financing activities	**2,878,000,000**	**(579,500,000)**	**(404,000,000)**	**(528,500,000)**	**(453,000,000)**
Net Increase/(decrease) in cash and cash equivalents	**5,107,099,500**	**(124,217,600)**	**684,116,660**	**1,048,064,433**	**1,216,584,347**
Cash and Cash Equivalents at the start of the year	-	5,107,099,500	4,982,881,900	5,666,998,560	6,715,062,993
Cash and Cash Equivalents at the end of the year	**5,107,099,500**	**4,982,881,900**	**5,666,998,560**	**6,715,062,993**	**7,931,647,340**



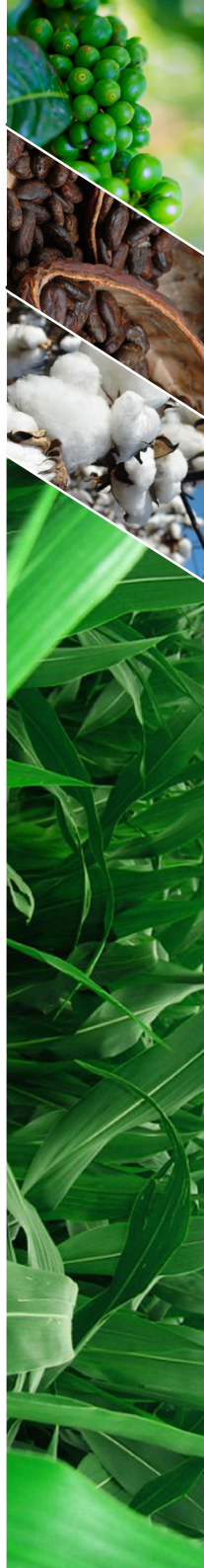
Ratio analysis

	Year 1	Year 2	Year 3	Year 4	Year 5
Net profit ratio	35%	17%	18%	19%	20%
Return on capital employed	37%	13%	14%	14%	14%
Leverage ratio	36%	22%	12%	5%	0%
Free cash flows	**545,204,900**	**70,483,500**	**93,385,820**	**733,922,246**	**983,433,585**
Project IRR	13%				
Equity IRR	9%				
Debt IRR	5%				
Payback period (years)	12				
EBITDA margin	**54%**	**33%**	**33%**	**33%**	**33%**
Gross margin	87%	82%	82%	82%	82%
DSCR	**2.19**	**1.24**	**1.96**	**3.94**	**29.77**
Interest coverage	13.11	5.91	8.51	13.78	29.77
Asset turnover	1.08	0.79	0.75	0.73	0.70
Debt/EBITDA multiple	**0.38**	**0.63**	**0.39**	**0.18**	**-**
WCR/sales	**(0.06)**	**0.05**	**0.05**	**0.04**	**0.04**

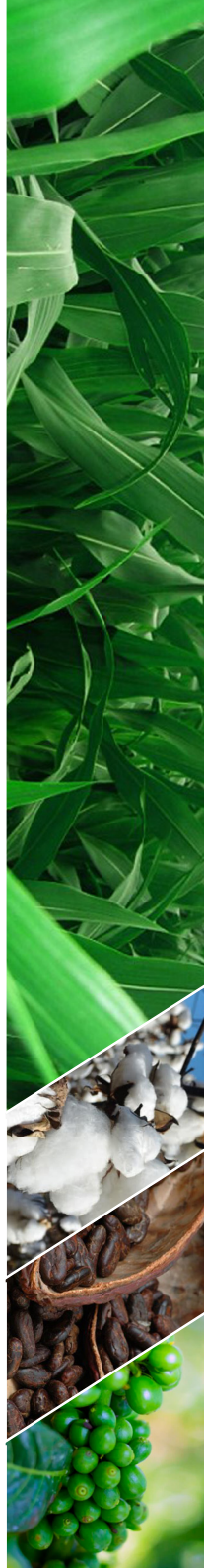
15.2 Cocoa value chain – financial statements

The financial statements include the statement of comprehensive income, statement of financial position and the statement of cashflows based on the Base Case/Average Case scenario and an equal split between debt and equity for a five-year period of business operation. During the modelling process, we have modelled various scenarios as part of the sensitivity analysis.

	Year 1	Year 2	Year 3	Year 4	Year 5
INCOME STATEMENT					
Grade 1	17,875,200,000	33,094,656,000	35,742,228,480	38,601,606,758	41,689,735,299
Grade 2	2,234,400,000	4,136,832,000	4,467,778,560	4,825,200,845	5,211,216,912
Grade 3	2,234,400,000	4,136,832,000	4,467,778,560	4,825,200,845	5,211,216,912
	22,344,000,000	**41,368,320,000**	**44,677,785,600**	**48,252,008,448**	**52,112,169,124**
Opening stock	-	266,000,000	3,447,360,000	3,723,148,800	4,021,000,704
Purchases	17,150,000,000	31,752,000,000	34,292,160,000	37,035,532,800	39,998,375,424
Closing stock	266,000,000	3,447,360,000	3,723,148,800	4,021,000,704	4,342,680,760
Cost of sales	**16,884,000,000**	**28,570,640,000**	**34,016,371,200**	**36,737,680,896**	**39,676,695,368**
Direct Costs					
Loading to Pulping Center	24,500,000	45,360,000	48,988,800	52,907,904	57,140,536
Loading to Transport Center	49,000,000	90,720,000	97,977,600	105,815,808	114,281,073
Offloading	24,500,000	45,360,000	48,988,800	52,907,904	57,140,536
Pulping	274,400,000	508,032,000	548,674,560	592,568,525	639,974,007
Drying	49,000,000	90,720,000	97,977,600	105,815,808	114,281,073
Loading Dry Patchment	19,600,000	36,288,000	39,191,040	42,326,323	45,712,429
Transport to Market	78,400,000	145,152,000	156,764,160	169,305,293	182,849,716
Commission expenses	98,000,000	181,440,000	195,955,200	211,631,616	228,562,145
Hulling expenses	137,200,000	254,016,000	274,337,280	296,284,262	319,987,003
Grading expenses	215,600,000	399,168,000	431,101,440	465,589,555	502,836,720



	Year 1	Year 2	Year 3	Year 4	Year 5
INCOME STATEMENT					
	970,200,000	1,796,256,000	1,939,956,480	2,095,152,998	2,262,765,238
Gross profit	4,489,800,000	11,001,424,000	8,721,457,920	9,419,174,554	10,172,708,518
Gross profit margin	20%	27%	20%	20%	20%
Pre-incorporation costs					
Farmers groups	5,500,000,000				
Administrative expenses					
Telephone & internet	18,000,000	19,440,000	20,995,200	22,674,816	24,488,801
Stationery & printing	20,000,000	21,600,000	23,328,000	25,194,240	27,209,779
Transport & travel	195,000,000	210,600,000	227,448,000	245,643,840	265,295,347
Internet & website hosting	1,200,000	1,296,000	1,399,680	1,511,654	1,632,587
Computer & other equipment repairs	18,000,000	19,440,000	20,995,200	22,674,816	24,488,801
Audit fees	12,000,000	12,960,000	13,996,800	15,116,544	16,325,868
Cleaning expenses	72,000,000	77,760,000	83,980,800	90,699,264	97,955,205
Office rent	120,000,000	129,600,000	139,968,000	151,165,440	163,258,675
Insurance	180,000,000	194,400,000	209,952,000	226,748,160	244,888,013
Bank charge & commission	60,000,000	64,800,000	69,984,000	75,582,720	81,629,338
Trading licence	15,000,000	16,200,000	17,496,000	18,895,680	20,407,334
	711,200,000	768,096,000	829,543,680	895,907,174	967,579,748
Staff expenses					
Salaries and wages	300,000,000	324,000,000	349,920,000	377,913,600	408,146,688
Staff uniforms	30,000,000	32,400,000	34,992,000	37,791,360	40,814,669
Staff meals	126,000,000	136,080,000	146,966,400	158,723,712	171,421,609
Medical expenses	45,000,000	48,600,000	52,488,000	56,687,040	61,222,003
	501,000,000	541,080,000	584,366,400	631,115,712	681,604,969



	Year 1	Year 2	Year 3	Year 4	Year 5
INCOME STATEMENT					
Sales & marketing & distribution					
Marketing	75,000,000	81,000,000	87,480,000	94,478,400	102,036,672
Coffee shop leases	35,000,000	37,800,000	40,824,000	44,089,920	47,617,114
Advertising & publicity	12,000,000	12,960,000	13,996,800	15,116,544	16,325,868
Business consultancy	90,000,000	97,200,000	104,976,000	113,374,080	122,444,006
Bidding expenses	4,000,000	4,320,000	4,665,600	5,038,848	5,441,956
	216,000,000	233,280,000	251,942,400	272,097,792	293,865,615
Total operating expenses	1,428,200,000	1,542,456,000	1,665,852,480	1,799,120,678	1,943,050,333
EBITDA	3,061,600,000	9,458,968,000	7,055,605,440	7,620,053,875	8,229,658,185
EBITDA margin	14%	23%	16%	16%	16%
Depreciation expense	66,030,000	225,815,000	239,135,000	239,135,000	239,135,000
Loan Interest expenses	754,000,000	754,000,000	565,500,000	377,000,000	188,500,000
Total expenses	820,030,000	979,815,000	804,635,000	616,135,000	427,635,000
Net Profit/loss	2,241,570,000	8,479,153,000	6,250,970,440	7,003,918,875	7,802,023,185
Margin					
Corporation tax	672,471,000	2,543,745,900	1,875,291,132	2,101,175,663	2,340,606,956
Profit after tax	1,569,099,000	5,935,407,100	4,375,679,308	4,902,743,213	5,461,416,230

Statement of financial position

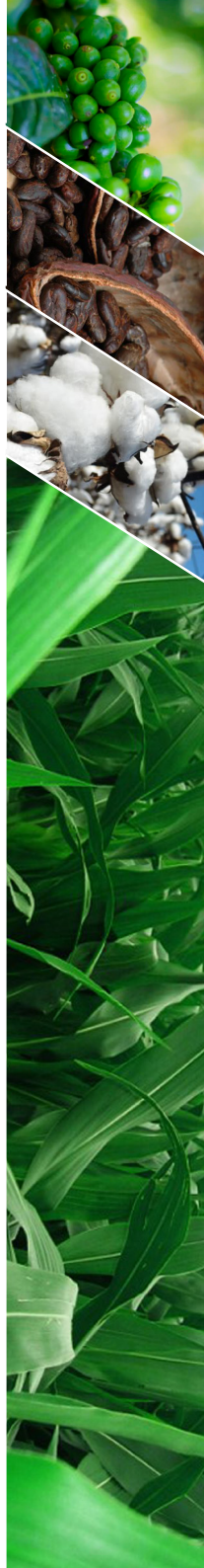
BALANCE SHEET	Year 1	Year 2	Year 3	Year 4	Year 5
Non-current assets					
Property and equipment	1,173,970,000	1,148,155,000	1,309,020,000	1,069,885,000	830,750,000
Total Non-current assets	1,173,970,000	1,148,155,000	1,309,020,000	1,069,885,000	830,750,000
Current assets					
Inventories	266,000,000	3,447,360,000	3,723,148,800	4,021,000,704	4,342,680,760
Trade and other receivables	133,000,000	1,723,680,000	1,861,574,400	2,010,500,352	2,171,340,380
Current Tax Recoverable					
Cash and cash equivalents	10,580,150,000	12,936,245,000	15,338,396,380	19,329,814,310	23,858,744,435
Total current assets	10,979,150,000	18,107,285,000	20,923,119,580	25,361,315,366	30,372,765,576
Total Assets	12,153,120,000	19,255,440,000	22,232,139,580	26,431,200,366	31,203,515,576
Equity and liabilities					
Equity					
Share capital	6,130,000,000	6,230,000,000	6,430,000,000	6,430,000,000	6,430,000,000
Share premium					
Capital reserve					
Accumulated losses	1,569,099,000	7,504,506,100	11,880,185,408	16,782,928,621	22,244,344,850
Total equity	7,699,099,000	13,734,506,100	18,310,185,408	23,212,928,621	28,674,344,850
Liabilities					
Non-current liabilities					

BALANCE SHEET	Year 1	Year 2	Year 3	Year 4	Year 5
Debt	3,770,000,000	2,827,500,000	1,885,000,000	942,500,000	-
Total non-current Liabilities	**3,770,000,000**	**2,827,500,000**	**1,885,000,000**	**942,500,000**	-
Current liabilities					
Trade payables	11,550,000	149,688,000	161,663,040	174,596,083	188,563,770
Tax payable	672,471,000	2,543,745,900	1,875,291,132	2,101,175,663	2,340,606,956
Overdraft	-	-	-	-	-
Other payables					
Interest on borrowings					
Total current liabilities	**684,021,000**	**2,693,433,900**	**2,036,954,172**	**2,275,771,746**	**2,529,170,725**
Total equity and liabilities	**12,153,120,000**	**19,255,440,000**	**22,232,139,580**	**26,431,200,366**	**31,203,515,576**

Statement of cash flows

STATEMENT OF CASHFLOWS	Year 1	Year 2	Year 3	Year 4	Year 5
Cashflows from operating activities					
Profit/Loss before tax	2,241,570,000	8,479,153,000	6,250,970,440	7,003,918,875	7,802,023,185
Adjustments for:					
Depreciation of property and equipment	66,030,000	225,815,000	239,135,000	239,135,000	239,135,000
Interest	754,000,000	754,000,000	565,500,000	377,000,000	188,500,000
Adjusted profit	**3,061,600,000**	**9,458,968,000**	**7,055,605,440**	**7,620,053,875**	**8,229,658,185**
Changes in operating assets and liabilities					
Increase in inventories	(266,000,000)	(3,181,360,000)	(275,788,800)	(297,851,904)	(321,680,056)
Decrease/ (increase in trade and other receivables)	(133,000,000)	(1,590,680,000)	(137,894,400)	(148,925,952)	(160,840,028)
Increase in trade and other payables	11,550,000	138,138,000	11,975,040	12,933,043	13,967,687
Cash generated from operations	**(387,450,000)**	**(4,633,902,000)**	**(401,708,160)**	**(433,844,813)**	**(468,552,398)**
Working capital adjustment	(387,450,000)	(4,633,902,000)	(401,708,160)	(433,844,813)	(468,552,398)
Income tax paid		(672,471,000)	(2,543,745,900)	(1,875,291,132)	(2,101,175,663)
Net cash generated from operating activities	**2,674,150,000**	**4,152,595,000**	**4,110,151,380**	**5,310,917,930**	**5,659,930,125**
Cash flows from investing activities					
Property and equipment	(1,240,000,000)	(200,000,000)	(400,000,000)	-	-
Net cash used in Investing activities	**(1,240,000,000)**	**(200,000,000)**	**(400,000,000)**	-	-
Cash flows from financing activities					
Share capital	6,130,000,000	100,000,000	200,000,000	-	-

STATEMENT OF CASHFLOWS	Year 1	Year 2	Year 3	Year 4	Year 5
Debt	3,770,000,000				
Repayment of borrowings	-	(942,500,000)	(942,500,000)	(942,500,000)	(942,500,000)
Interest payment	(754,000,000)	(754,000,000)	(565,500,000)	(377,000,000)	(188,500,000)
Net cash used in financing activities	9,146,000,000	(1,596,500,000)	(1,308,000,000)	(1,319,500,000)	(1,131,000,000)
Net Increase/(decrease) in cash and cash equivalents	**10,580,150,000**	**2,356,095,000**	**2,402,151,380**	**3,991,417,930**	**4,528,930,125**
Cash and cash equivalents at the start of the year	-	10,580,150,000	12,936,245,000	15,338,396,380	19,329,814,310
Cash and cash equivalents at the end of the year	**10,580,150,000**	**12,936,245,000**	**15,338,396,380**	**19,329,814,310**	**23,858,744,435**



Ratio analysis

	Year 1	Year 2	Year 3	Year 4	Year 5
Net profit ratio	7%	14%	10%	10%	10%
Return on capital employed	13%	31%	20%	19%	18%
Leverage ratio	49%	21%	10%	4%	0%
Free cash flows	**(746,321,000)**	**(574,258,900)**	**2,088,366,028**	**3,173,584,870**	**3,887,985,220**
Project IRR	16%				
Equity IRR	12%				
Debt IRR	4%				
Payback period (years)	8				
EBITDA Margin	**14%**	**23%**	**16%**	**16%**	**16%**
Gross margin	20%	27%	20%	20%	20%
DSCR	**0.68**	**2.64**	**2.88**	**5.77**	**43.66**
Interest coverage	4.06	12.55	12.48	20.21	43.66
Asset turnover	1.84	2.15	2.01	1.83	1.67
Debt/EBITDA multiple	1.23	0.30	0.27	0.12	-
WCR/Sales	**(0.01)**	**0.06**	**0.08**	**0.08**	**0.08**

15.3 Cotton value chain - financial statements

Cotton has four investment opportunities and the financial statements for each are set out below.

The financial statements include the statement of comprehensive income, statement of financial position and the statement of cashflows based on the Base Case/Average Case scenario and an equal split between debt and equity for a five-year period of business operation. During the modelling process, we have modelled various scenarios as part of the sensitivity analysis.

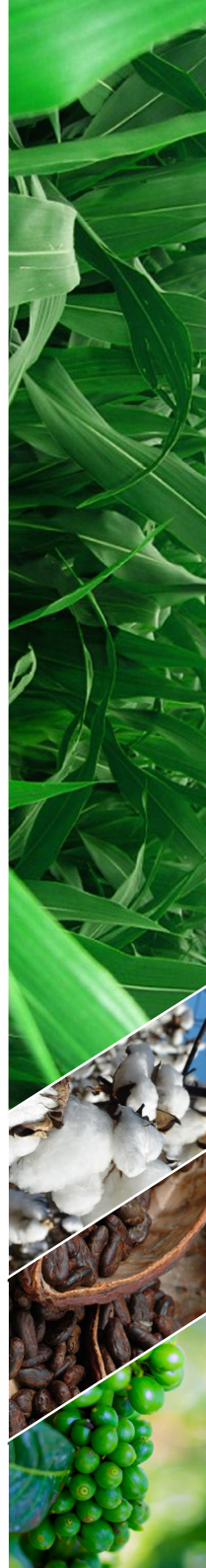
(a) Ginning with cotton seed oil, animal feed and absorbent cotton wool

The table below shows the profitability of the project.

Projected income statement

	Year 1	Year2	Year 3	Year 4	Year 5
Turnover	4,487,936	5,520,523	6,900,654	8,280,784	8,280,784
Cost of sales	**2,109,330**	**2,594,646**	**3,243,307**	**3,891,969**	**3,891,969**
	2,109,330	2,594,646	3,243,307	3,891,969	3,891,969
Transport cost	625,000	625,000	625,000	625,000	625,000
Gross profit	**1,753,606**	**2,300,877**	**3,032,346**	**3,763,816**	**3,763,816**
Administrative expenses					
Salaries and wages	52,800	54,912	57,108	59,393	61,769
Travel and transport	108,000	112,320	116,813	121,485	126,345
Telephone	3,600	3,744	3,894	4,050	4,211
Internet	1,440	1,497.60	1,557.50	1,619.80	1,684.60
Maintenance	296,088	307,931	320,249	333,058	346,381
Professional fees	2,400	2,496	2,596	2,700	2,808
Field operations	6,600	6,864	7,139	7,424	7,721
Insurance	7,402	7,402	7,402	7,402	7,402
	425,530	442,255	459,649	477,739	496,553
Total overheads	**425,530**	**442,255**	**459,649**	**477,739**	**496,553**
EBITDA	**1,328,076**	**1,858,622**	**2,572,697**	**3,286,077**	**3,267,263**

Depreciation	246,650	246,650	246,650	246,650	246,650
Amortization of pre-operating	7,000	7,000	7,000	7,000	7,000
EBIT	**1,074,426**	**1,604,972**	**2,319,047**	**3,032,427**	**3,013,613**
Loan interest	82,161	74,130	59,304	44,478	29,652
	82,161	74,130	59,304	44,478	29,652
Operating profit	**992,265**	**1,530,842**	**2,259,743**	**2,987,949**	**2,983,961**
Corporation tax	445,105	459,253	677,923	896,385	895,188
Profit after tax	**547,161**	**1,071,589**	**1,581,820**	**2,091,564**	**2,088,773**

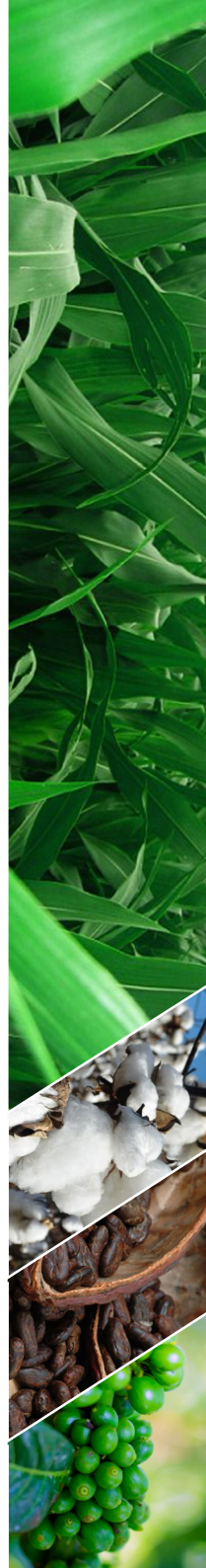


Projected balance sheet

	Year 1	Year 2	Year 3	Year 4	Year 5
Assets					
Property plant and equipment	2,354,350	2,107,700	1,861,050	1,614,400	1,367,750
Pre-operating expenses	28,000	21,000	14,000	7,000	-
	2,382,350	**2,128,700**	**1,875,050**	**1,621,400**	**1,367,750**
Current assets					
Inventories	442,350	1,061,639	1,327,049	1,592,459	1,592,459
Accounts receivable	147,450	530,820	663,524	796,229	796,229
Cash/overdraft	1,422,062	1,411,134	2,456,075	4,010,760	5,929,583
Net current assets	**2,011,861**	**3,003,593**	**4,446,649**	**6,399,448**	**8,318,271**
Total assets	**4,394,211**	**5,132,293**	**6,321,699**	**8,020,848**	**9,686,021**
Share capital	1,694,400	1,694,400	1,694,400	1,694,400	1,694,400
Revenue reserves	547,161	1,618,750	3,200,570	5,292,134	7,380,907
	2,241,561	3,313,150	4,894,970	6,986,534	9,075,307
Long term debt	2,118,000	1,694,400	1,270,800	847,200	423,600
	2,118,000	1,694,400	1,270,800	847,200	423,600
Current liabilities					
Trade and other payables	34,651	124,743	155,928	187,114	187,114
	34,651	124,743	155,928	187,114	187,114
Total liabilities	2,152,651	1,819,143	1,426,728	1,034,314	610,714
Total equity and liabilities	**4,394,211**	**5,132,293**	**6,321,699**	**8,020,848**	**9,686,021**

Projected cash flow statement

	Year 1	Year 2	Year 3	Year 4	Year 5
Net cash inflow from operating activities:					
Profit before tax	992,265	1,530,842	2,259,743	2,987,949	2,983,961
Adjustment for items not involving movt in cash					
Depreciation	246,650	246,650	246,650	246,650	246,650
Amortisation	7,000	7,000	7,000	7,000	7,000
Interest expense	82,161	74,130	59,304	44,478	29,652
Net operating profit before changes in working capital:	**1,328,076**	**1,858,622**	**2,572,697**	**3,286,077**	**3,267,263**
Changes in: stock	(442,350)	(619,289)	(265,410)	(265,410)	-
Debtors	(147,450)	(383,370)	(132,705)	(132,705)	-
Creditors	34,651	90,092	31,186	31,186	-
	(555,149)	(912,567)	(366,929)	(366,929)	-
(a) Net cash flow from operating activities	**772,927**	**946,055**	**2,205,768**	**2,919,148**	**3,267,263**
Tax paid	(445,105)	(459,253)	(677,923)	(896,385)	(895,188)
Cash flow from investing activities:					
Purchase of assets	(2,601,000)	-	-	-	-
Pre-operating expenses	(35,000)				
(b) Net cash flow from investing activities	**(2,636,000)**	-	-	-	-
(c) Cash flow from financing activities:					
Share capital	1,694,400				
Loan receipt	2,541,600				
Loan repayment	(423,600)	(423,600)	(423,600)	(423,600)	(423,600)
Payment of Interest charges – loan	(82,161)	(74,130)	(59,304)	(44,478)	(29,652)
	3,730,239	(497,730)	(482,904)	(468,078)	(453,252)
Net Increase/(decrease) in cash and cash equivalents (a+b+c)	1,422,062	(10,928)	1,044,941	1,554,685	1,918,823



	Year 1	Year 2	Year 3	Year 4	Year 5
Cash and cash equivalent at the beginning of the year	-	1,422,062	1,411,134	2,456,075	4,010,760
Cash and cash equivalent at the end of the period	**1,422,062**	**1,411,134**	**2,456,075**	**4,010,760**	**5,929,583**

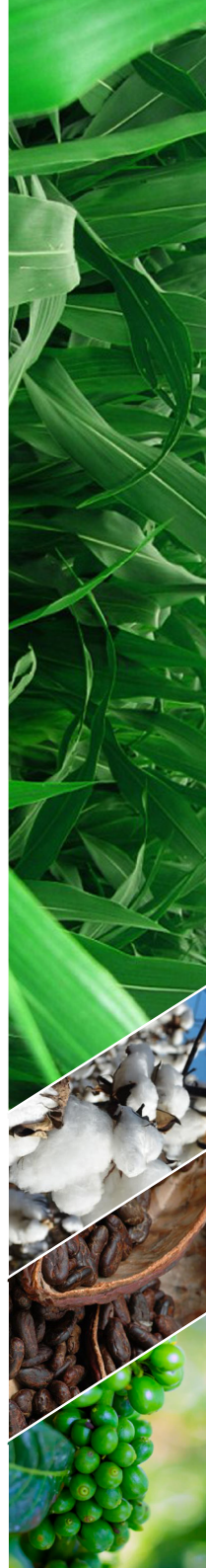
Ratio analysis

	Year 1	Year 2	Year 3	Year 4	Year 5
Net profit ratio	12%	19%	23%	25%	25%
Return on capital employed	12%	21%	25%	26%	22%
Leverage ratio	94%	51%	26%	12%	5%
Free cash flows to firm	327,823	486,802	1,527,845	2,022,763	2,372,075
Free cash flows to equity	(177,938)	412,672	1,468,541	1,978,285	2,342,423
Project IRR	30%				
Equity IRR	26%				
Debt IRR	4%				
Payback period (years)	3				
EBITDA margin	30%	34%	37%	40%	39%
Gross margin	39%	42%	44%	45%	45%
DSCR	0.60	1.05	1.93	3.69	7.21
Interest coverage	13	22	39	68	102
Asset turnover	1.02	1.08	1.09	1.03	0.85
Debt/EBITDA multiple	1.59	0.91	0.49	0.26	0.13
WCR/sales	(0.12)	(0.17)	(0.05)	(0.04)	-

(b) Modern Cotton yarn spinning mill

The table below shows the profitability of the project.

	Year 1	Year 2	Year 3	Year 4	Year 5
Turnover	14,122,500	16,140,000	18,157,500	19,166,250	19,166,250
Cost of sales	**6,637,575**	**7,585,800**	**8,534,025**	**9,008,138**	**9,008,138**
	6,637,575	7,585,800	8,534,025	9,008,138	9,008,138
Gross profit	**7,484,925**	**8,554,200**	**9,623,475**	**10,158,113**	**10,158,113**
Administrative expenses					
Salaries	480,000	499,200	519,168	539,935	561,532
Telephone	3,600	3,744	3,894	4,050	4,211
Internet	1,440	1,498	1,558	1,620	1,685
Maintenance	2,138,404	2,223,940	2,312,897	2,405,413	2,501,630
Professional fees	2,400	2,496	2,596	2,700	2,808
Field operations	6,600	6,864	7,139	7,424	7,721
Insurance	53,460	53,460	53,460	53,460	53,460
	2,205,904	2,292,002	2,381,543	2,474,667	2,571,515
Total overheads	**2,205,904**	**2,292,002**	**2,381,543**	**2,474,667**	**2,571,515**
EBITDA	**5,279,021**	**6,262,198**	**7,241,932**	**7,683,446**	**7,586,598**
Depreciation	2,012,250	2,012,250	2,012,250	2,008,250	2,006,250
Amortisation of pre-operating	240,000	240,000	240,000	240,000	240,000
EBIT	**3,026,771**	**4,009,948**	**4,989,682**	**5,435,196**	**5,340,348**
Loan interest	974,059	878,850	703,080	527,310	351,540
	974,059	878,850	703,080	527,310	351,540
Operating profit	**2,052,712**	**3,131,098**	**4,286,602**	**4,907,886**	**4,988,808**
Corporation tax	615,814	939,330	1,285,981	1,472,366	1,496,642
Profit after tax	**1,436,899**	**2,191,769**	**3,000,621**	**3,435,520**	**3,492,165**



Projected statement of affairs

	Year 1	Year 2	Year 3	Year 4	Year 5
Assets					
Property plant and equipment	16,897,750	14,885,500	12,873,250	10,865,000	8,858,750
Pre-operating expenses	960,000	720,000	480,000	240,000	-
	17,857,750	**15,605,500**	**13,353,250**	**11,105,000**	**8,858,750**
Current assets					
Inventories	339,483	3,103,846	3,491,827	3,685,817	3,685,817
Accounts receivable	113,161	1,551,923	1,745,913	1,842,909	1,842,909
Cash/overdraft	5,752,097	3,820,100	6,025,588	8,930,167	12,157,582
Net current assets	**6,204,742**	**8,475,869**	**11,263,328**	**14,458,892**	**17,686,308**
Total assets	**24,062,492**	**24,081,369**	**24,616,578**	**25,563,892**	**26,545,058**
Share capital	10,044,000	10,044,000	10,044,000	10,044,000	10,044,000
Revenue reserves	1,436,899	3,628,668	6,629,289	10,064,809	13,556,974
	11,480,899	**13,672,668**	**16,673,289**	**20,108,809**	**23,600,974**
Long-term debt	12,555,000	10,044,000	7,533,000	5,022,000	2,511,000
	12,555,000	10,044,000	7,533,000	5,022,000	2,511,000
Current liabilities	-				
Trade and other payables	26,593	364,701.92	410,289.66	433,083.53	433,083.53
	26,593	364,702	410,290	433,084	433,084
Total liabilities	12,581,593	10,408,702	7,943,290	5,455,084	2,944,084
Total equity and liabilities	**24,062,492**	**24,081,369**	**24,616,578**	**25,563,892**	**26,545,058**

Projected cash flow statement

	Year 1	Year2	Year 3	Year 4	Year 5
Net cash inflow from operating activities:					
Profit before tax	2,052,712	3,131,098	4,286,602	4,907,886	4,988,808
Adjustment for items not involving movement in cash					
Depreciation	2,012,250	2,012,250	2,012,250	2,008,250	2,006,250
Amortisation	240,000	240,000	240,000	240,000	240,000
Interest expense	974,059	878,850	703,080	527,310	351,540
Net Operating profit before changes in working capital:	**5,279,021**	**6,262,198**	**7,241,932**	**7,683,446**	**7,586,598**
Changes in: Stock	(339,483)	(2,764,363)	(387,981)	(193,990)	-
Debtors	(113,161)	(1,438,762)	(193,990)	(96,995)	-
Creditors	26,593	338,109	45,588	22,794	-
	(426,051)	(3,865,016)	(536,383)	(268,192)	-
(a) Net Cash Flow from operating activities	**4,852,970**	**2,397,182**	**6,705,548**	**7,415,254**	**7,586,598**
Tax paid	(615,814)	(939,330)	(1,285,981)	(1,472,366)	(1,496,642)
Cash flow from investing activities:					
Purchase of assets	(18,910,000)	-	-	-	-
Pre-operating expenses	(1,200,000)				
(b) Net Cash flow from investing activities	**(20,110,000)**	-	-	-	-
(c) Cash Flow from financing activities:					
Share capital	10,044,000				
Loan receipt	15,066,000				
Loan repayment	(2,511,000)	(2,511,000)	(2,511,000)	(2,511,000)	(2,511,000)
Payment of Interest charges - Loan 1	(974,059)	(878,850)	(703,080)	(527,310)	(351,540)
	21,624,941	**(3,389,850)**	**(3,214,080)**	**(3,038,310)**	**(2,862,540)**
Net Increase/(decrease) in cash and cash equivalents (a+b+c)	**5,752,097**	**(1,931,997)**	**2,205,488**	**2,904,578**	**3,227,415**

	Year 1	Year2	Year 3	Year 4	Year 5
Cash and cash equivalent at the beginning of the year	-	5,752,097	3,820,100	6,025,588	8,930,167
Cash and cash equivalent at the end of the period	**5,752,097**	**3,820,100**	**6,025,588**	**8,930,167**	**12,157,582**

Ratio analysis

The table below shows the ratio analysis.

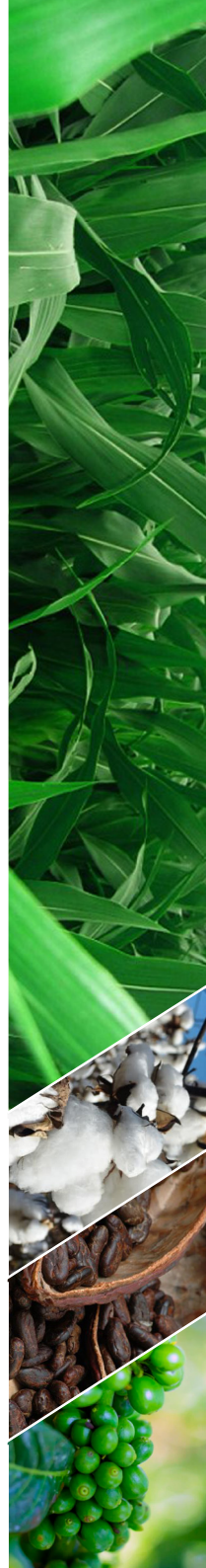
	Year 1	Year 2	Year 3	Year 4	Year 5
Net profit ratio	10%	14%	17%	18%	18%
Return on capital employed	6%	9%	12%	13%	13%
Leverage ratio	109%	73%	45%	25%	11%
Free cash flows to firm	4,237,156	1,457,853	5,419,568	5,942,888	6,089,955
Free cash flows to equity	752,097	(1,931,997)	2,205,488	2,904,578	3,227,415
Project IRR	8%				
Equity IRR	-10%				
Debt IRR	18%				
Payback period (years)	13				
EBITDA margin	37%	39%	40%	40%	40%
Gross margin	53%	53%	53%	53%	53%
DSCR	0.39	0.57	0.88	1.38	2.65
Interest coverage	3	5	7	10	15
Asset Turnover	0.59	0.67	0.74	0.75	0.72
Debt/EBITDA multiple	2.38	1.60	1.04	0.65	0.33
WCR/Sales	(0.03)	(0.24)	(0.03)	(0.01)	-

(c) Cotton ginning with absorbent cotton wool production

Income Statement

Below is the projected income statement for five years.

	Year 1	Year 2	Year 3	Year 4	Year 5
Turnover					
Cotton seed lint for export	2,304,288	2,174,966	2,718,707	3,262,449	3,262,449
Cotton seed	421,200	1,080,000	1,350,000	1,620,000	1,620,000
Absorbent Cotton Wool	1,627,920	1,536,557	1,920,696	2,304,836	2,304,836
	4,353,408	**4,791,523**	**5,989,404**	**7,187,284**	**7,187,284**
Cost of sales	2,046,102	2,252,016	2,815,020	3,378,024	3,378,024
Cost of sales	2,046,102	2,252,016	2,815,020	3,378,024	3,378,024
Gross profit	2,307,306	2,539,507	3,174,384	3,809,261	3,809,261
Administrative expenses					
Salaries and wages	52,800	54,912	57,108	59,393	61,769
Travel and transport	375,000	390,000	405,600	421,824	438,697
Telephone	3,600	3,744	3,894	4,050	4,211
Internet	1,440	1,497.60	1,557.50	1,619.80	1,684.60
Maintenance	246,913	256,789	267,061	277,743	288,853
Professional fees	2,400	2,496	2,596	2,700	2,808
Field operations	6,600	6,864	7,139	7,424	7,721
Insurance	6,173	6,173	6,173	6,173	6,173
	642,126	**667,564**	**694,019**	**721,533**	**750,148**
Total overheads	642,126	667,564	694,019	721,533	750,148
EBITDA	**1,665,181**	**1,871,943**	**2,480,364**	**3,087,727**	**3,059,113**
Depreciation	196,417	196,417	196,417	196,417	196,417
Amortization of pre-operating	7,000	7,000	7,000	7,000	7,000
EBIT	**1,461,764**	**1,668,527**	**2,276,948**	**2,884,311**	**2,855,696**



	Year 1	Year 2	Year 3	Year 4	Year 5
Loan interest	177,333	160,000	128,000	96,000	64,000
	177,333	160,000	128,000	96,000	64,000
Operating profit	**1,284,431**	**1,508,527**	**2,148,948**	**2,788,311**	**2,791,696**
Corporation tax	531,628	452,558	644,684	836,493	837,509
Profit after tax	**752,803**	**1,055,969**	**1,504,263**	**1,951,817**	**1,954,187**

Projected statement of affairs

	Year 1	Year 2	Year 3	Year 4	Year 5
Assets					
Property plant and equipment	1,967,583	1,771,167	1,574,750	1,378,333	1,181,917
Pre-operating expenses	28,000	21,000	14,000	7,000	-
	1,995,583	**1,792,167**	**1,588,750**	**1,385,333**	**1,181,917**
Current assets					
Inventories	418,597	921,447	1,151,808	1,382,170	1,382,170
Accounts receivable	139,532	460,723	575,904	691,085	691,085
Cash/overdraft	1,831,880	1,942,705	2,931,910	4,368,669	6,126,273
Net current assets	**2,390,010**	**3,324,875**	**4,659,622**	**6,441,924**	**8,199,528**
Total assets	**4,385,593**	**5,117,041**	**6,248,372**	**7,827,257**	**9,381,445**
Share capital	1,600,000	1,600,000	1,600,000	1,600,000	1,600,000
Revenue reserves	752,803	1,808,771	3,313,035	5,264,852	7,219,040
	2,352,803	3,408,771	4,913,035	6,864,852	8,819,040
Long term debt	2,000,000	1,600,000	1,200,000	800,000	400,000
	2,000,000	1,600,000	1,200,000	800,000	400,000
Current liabilities	-				
Trade and other payables	32,790	108,270	135,337	162,405	162,405
	32,790	108,270	135,337	162,405	162,405
Total liabilities	2,032,790	1,708,270	1,335,337	962,405	562,405
Total equity and liabilities	**4,385,593**	**5,117,041**	**6,248,372**	**7,827,257**	**9,381,445**

Projected cash flow statement

	Year 1	Year2	Year 3	Year 4	Year 5
Net cash inflow from operating activities:					
Profit before tax	1,284,431	1,508,527	2,148,948	2,788,311	2,791,696
Adjustment for items not involving movement in cash					
Depreciation	196,417	196,417	196,417	196,417	196,417
Amortization	7,000	7,000	7,000	7,000	7,000
Interest expense	177,333	160,000	128,000	96,000	64,000
Net operating profit / (loss) before changes in working capital:	**1,665,181**	**1,871,943**	**2,480,364**	**3,087,727**	**3,059,113**
Changes in: stock	(418,597)	(502,850)	(230,362)	(230,362)	-
Debtors	(139,532)	(321,191)	(115,181)	(115,181)	-
Creditors	32,790	75,480	27,067	27,067	-
	(525,339)	(748,561)	(318,475)	(318,475)	-
(a) Net Cash flow from operating activities	**1,139,841**	**1,123,382**	**2,161,889**	**2,769,252**	**3,059,113**
Tax paid	(531,628)	(452,558)	(644,684)	(836,493)	(837,509)
Cash flow from investing activities:					
Purchase of assets	(2,164,000)	-	-	-	-
Pre-operating expenses	(35,000)				
(b) Net Cash flow from investing activities	**(2,199,000)**	-	-	-	-
(c) Cash flow from financing activities:					
Share capital	1,600,000				
Loan receipt	2,400,000				
Loan repayment	(400,000)	(400,000)	(400,000)	(400,000)	(400,000)
Payment of Interest charges	(177,333)	(160,000)	(128,000)	(96,000)	(64,000)
	3,422,667	**(560,000)**	**(528,000)**	**(496,000)**	**(464,000)**
Net Increase/(decrease) in cash and cash equivalents (a+b+c)	**1,831,880**	**110,824**	**989,205**	**1,436,759**	**1,757,604**

	Year 1	Year2	Year 3	Year 4	Year 5
Cash and cash equivalent at the beginning of the year	-	1,831,880	1,942,705	2,931,910	4,368,669
Cash and cash equivalent at the end of the period	**1,831,880**	**1,942,705**	**2,931,910**	**4,368,669**	**6,126,273**

Ratio analysis

	Year 1	Year 2	Year 3	Year 4	Year 5
Net profit ratio	17%	22%	25%	27%	27%
Return on capital employed	17%	21%	24%	25%	21%
Leverage ratio	85%	47%	24%	12%	5%
Free cash flows to firm	608,214	670,824	1,517,205	1,932,759	2,221,604
Free cash flows to equity	30,880	110,824	989,205	1,436,759	1,757,604
Project IRR	38%				
Equity IRR	23%				
Debt IRR	15%				
Payback period (years)	4				
EBITDA margin	17%	22%	25%	27%	27%
Gross margin	53%	53%	53%	53%	53%
DSCR	2.88	3.34	4.70	6.23	6.59
Interest coverage	8	10	18	30	45
Asset turnover	0.99	0.94	0.96	0.92	0.77
Debt/EBITDA multiple	1.20	0.85	0.48	0.26	0.13
WCR/Sales	0.12	0.16	0.05	0.04	-

(d) Ginning with Cotton Seed Oil and Animal Feed Production

Income Statement

Below is the projected income statement for five years.

	Year 1	Year2	Year 3	Year 4	Year 5
Turnover					
Cotton lint for export	1,812,471	2,174,966	2,718,707	3,262,449	3,262,449
Cotton seed oil	607,500	729,000	911,250	1,093,500	1,093,500
Cotton animal feed	787,500	1,080,000	1,350,000	1,620,000	1,620,000
	3,207,471	**3,983,966**	**4,979,957**	**5,975,949**	**5,975,949**
Cost of sales	1,507,512	1,872,464	2,340,580	2,808,696	2,808,696
Gross profit	**1,699,960**	**2,111,502**	**2,639,377**	**3,167,253**	**3,167,253**
Administrative expenses					
Salaries and wages	47,400	49,296	51,268	53,319	55,451
Travel and transport	375,000	450,000	562,500	675,000	675,000
Telephone	3,600	3,744	3,894	4,050	4,211
Internet	1,440	1,497.60	1,557.50	1,619.80	1,684.60
Maintenance	222,194	231,082	240,325	249,938	259,936
Professional fees	2,400	2,496	2,596	2,700	2,808
Field operations	6,600	6,864	7,139	7,424	7,721
Insurance	5,555	5,555	5,555	5,555	5,555
	616,789	**701,238**	**823,566**	**946,286**	**956,915**
EBITDA	**1,083,171**	**1,410,264**	**1,815,812**	**2,220,967**	**2,210,338**
Depreciation	172,400	172,400	172,400	172,400	172,400
Amortisation of pre operating	7,000	7,000	7,000	7,000	7,000
EBIT	**903,771**	**1,230,864**	**1,636,412**	**2,041,567**	**2,030,938**
Loan interest	170,284	153,640	122,912	92,184	61,456
	170,284	153,640	122,912	92,184	61,456

	Year 1	Year2	Year 3	Year 4	Year 5
Operating profit	**733,487**	**1,077,224**	**1,513,500**	**1,949,383**	**1,969,482**
Corporation tax	353,614	323,167	454,050	584,815	590,844
Profit after tax	**379,872**	**754,057**	**1,059,450**	**1,364,568**	**1,378,637**

Projected statement of affairs

	Year 1	Year2	Year 3	Year 4	Year 5
Assets					
Property plant and equipment	1,772,600	1,600,200	1,427,800	1,255,400	1,083,000
Pre-operating expenses	28,000	21,000	14,000	7,000	-
	1,800,600	**1,621,200**	**1,441,800**	**1,262,400**	**1,083,000**
Current assets					
Inventories	319,228	766,147	957,684	1,149,221	1,149,221
Accounts receivable	106,409	383,074	478,842	574,610	574,610
Cash/overdraft	1,635,541	1,526,330	2,116,280	3,011,349	4,185,286
Net current assets	**2,061,179**	**2,675,551**	**3,552,807**	**4,735,180**	**5,909,117**
Total assets	**3,861,779**	**4,296,751**	**4,994,607**	**5,997,580**	**6,992,117**
Share capital	1,536,400	1,536,400	1,536,400	1,536,400	1,536,400
Revenue reserves	379,872	1,133,929	2,193,379	3,557,947	4,936,584
	1,916,272	**2,670,329**	**3,729,779**	**5,094,347**	**6,472,984**
Long term debt	1,920,500	1,536,400	1,152,300	768,200	384,100
	1,920,500	**1,536,400**	**1,152,300**	**768,200**	**384,100**
Current liabilities	-				
Trade and other payables	25,006	90,022	112,528	135,033	135,033
	25,006	**90,022**	**112,528**	**135,033**	**135,033**
Total liabilities	1,945,506	1,626,422	1,264,828	903,233	519,133
Total equity and liabilities	**3,861,779**	**4,296,751**	**4,994,607**	**5,997,580**	**6,992,117**

Projected cash flow statement

	Year 1	Year2	Year 3	Year 4	Year 5
Net cash inflow from operating activities:					
Profit before tax	733,487	1,077,224	1,513,500	1,949,383	1,969,482
Adjustment for items not involving movement in cash					
Depreciation	172,400	172,400	172,400	172,400	172,400
Amortisation	7,000	7,000	7,000	7,000	7,000
Interest expense	170,284	153,640	122,912	92,184	61,456
Net operating profit before changes in working capital:	**1,083,171**	**1,410,264**	**1,815,812**	**2,220,967**	**2,210,338**
Changes in: Stock	(319,228)	(446,919)	(191,537)	(191,537)	-
Debtors	(106,409)	(276,664)	(95,768)	(95,768)	-
Creditors	25,006	65,016	22,506	22,506	-
	(400,631)	**(658,567)**	**(264,800)**	**(264,800)**	**-**
(a) Net cash flow from operating activities	682,540	751,696	1,551,012	1,956,167	2,210,338
Tax paid	(353,614)	(323,167)	(454,050)	(584,815)	(590,844)
Cash flow from investing activities:					
Purchase of assets	(1,945,000)	-	-	-	-
Pre-operating expenses	(35,000)				
(b) Net Cash flow from investing activities	**(1,980,000)**	-	-	-	-
(c) Cash Flow from Financing activities:					
Share capital	1,536,400				
Loan receipt	2,304,600				
Loan repayment	(384,100)	(384,100)	(384,100)	(384,100)	(384,100)
Payment of Interest charges	(170,284)	(153,640)	(122,912)	(92,184)	(61,456)
	3,286,616	**(537,740)**	**(507,012)**	**(476,284)**	**(445,556)**
Net Increase/(decrease) in cash and cash equivalents (a+b+c)					

	Year 1	Year2	Year 3	Year 4	Year 5
	1,635,541	(109,211)	589,950	895,068	1,173,937
Cash and cash equivalent at the beginning of the year	-	1,635,541	1,526,330	2,116,280	3,011,349
Cash and cash equivalent at the end of the period	**1,635,541**	**1,526,330**	**2,116,280**	**3,011,349**	**4,185,286**

Ratio analysis

	Year 1	Year 2	Year 3	Year 4	Year 5
Net profit ratio	12%	19%	21%	23%	23%
Return on capital employed	10%	18%	21%	23%	20%
Leverage ratio	100%	58%	31%	15%	6%
Free cash flows to firm	321,925	421,529	1,089,962	1,364,352	1,612,493
Free cash flows to equity	(232,459)	(116,211)	582,950	888,068	1,166,937
Project IRR	29%				
Equity IRR	12%				
Debt IRR	17%				
Payback period (years)	8				
EBITDA margin	34%	35%	36%	37%	37%
Gross margin	53%	53%	53%	53%	53%
DSCR	1.95	2.62	3.58	4.66	35.97
Interest coverage	5	8	13	22	33
Asset turnover	0.83	0.93	1.00	1.00	0.85
Debt/EBITDA multiple	1.77	1.09	0.63	0.35	0.17
WCR/Sales	(0.12)	(0.17)	(0.05)	(0.04)	-

Capital expenditure

The table below shows the projected capital expenditure for the proposed projects.

	Ginning	Spinning	Ginning & Absorbent	Ginning & lint & oil & feeds
ITEM	USD	USD	USD	USD
Land and site preparation	100,000	500,000	100,000	90,000
Civil works and buildings	696,000	3,000,000	621,000	631,000
Production line	1,720,000	15,050,000	1,395,000	1,139,000
	1,720,000	**15,050,000**	**1,395,000**	**1,139,000**
Equipment	20,000	30,000	20,000	20,000
Office furniture	10,000	250,000	10,000	10,000
Vehicles	40,000	60,000	10,000	40,000
Computers	15,000	20,000	8,000	15,000
Total capex	**2,601,000**	**18,910,000**	**2,164,000**	**1,945,000**
Pre-operating cost	35,000	1,200,000	35,000	35,000
Working capital				
Purchase of raw materials	1,600,000	5,000,000	1,801,000	1,861,000
Total funding requirements	**4,236,000**	**25,110,000**	**4,000,000**	**3,841,000**

15.4 Maize value chain – financial statement

The financial statements include the statement of comprehensive income, statement of financial position and the statement of cashflows based on the Base Case/Average Case scenario and an equal split between debt and equity for a five-year period of business operation. During the modelling process, we have modelled various scenarios as part of the sensitivity analysis.

Statement of comprehensive income

INCOME STATEMENT	Year 1	Year 2	Year 3	Year 4	Year 5
Income Statement					
Turnover	24,584,602	30,906,532	36,959,949	43,243,141	44,108,003
	24,584,602	30,906,532	36,959,949	43,243,141	44,108,003
Cost of sales					
Purchase of maize	19,121,357	24,038,414	28,746,627	33,633,554	34,306,225
	19,121,357	24,038,414	28,746,627	33,633,554	34,306,225
Gross profit	**5,463,245**	**6,868,118**	**8,213,322**	**9,609,587**	**9,801,779**
	22%	**22%**	**22%**	**22%**	**22%**
Operating expenses					
Packaging expenses	2,458,460	2,557,782	2,714,339	2,938,087	3,243,886
Telephone and internet	49,169	51,156	54,287	58,762	64,878
Field Transport	491,692	511,556	542,868	587,617	648,777
Motor Expenses	245,846	255,778	271,434	293,809	324,389
Power and electricity	1,229,230	1,278,891	1,357,169	1,469,044	1,621,943
Labor charges	24,585	25,578	27,143	29,381	32,439
Medical expenses	36,877	38,367	40,715	44,071	48,658
Printing and stationery	51,628	53,713	57,001	61,700	68,122

INCOME STATEMENT	Year 1	Year 2	Year 3	Year 4	Year 5
Miscellaneous	98,338	102,311	108,574	117,523	129,755
Total Direct Costs	**1,686,504**	**1,754,638**	**1,862,036**	**2,015,528**	**2,225,306**
Administrative expenses					
Salaries and wages	608,520	633,104	658,682	685,292	712,978
Fuel	53,519	55,681	59,089	63,960	70,617
Cleaning expenses	3,020	3,142	3,334	3,609	3,985
Newspaper and publication	233	242	257	278	307
Office Expenses	8,326	8,662	9,193	9,950	10,986
Plumbing expenses	1,735	1,805	1,916	2,073	2,289
	675,353	**702,637**	**732,471**	**765,164**	**801,163**
EBITDA	**3,101,388**	**4,410,843**	**5,618,815**	**6,828,895**	**6,775,310**
Depreciation	555,429	554,856	554,856	554,856	554,856
EBIT	**2,545,959**	**3,855,986**	**5,063,959**	**6,274,039**	**6,220,454**
Finance costs					
Bank service charges	-	-	-	-	-
Commitment fees					
Loan interest	338,540	320,196	240,147	160,098	80,049
	338,540	320,196	240,147	160,098	80,049
Operating profit	**2,207,419**	**3,535,791**	**4,823,812**	**6,113,941**	**6,140,405**
Corporation tax	662,226	1,060,737	1,447,144	1,834,182	1,842,121
Profit after tax	**1,545,193**	**2,475,053**	**3,376,668**	**4,279,759**	**4,298,283**

INCOME STATEMENT	Year 1	Year 2	Year 3	Year 4	Year 5
Cumulative	1,545,193	4,020,247	7,396,915	11,676,674	15,974,957
Breakeven quantity tonnes	23,901.70	30,048.02	35,933.28	42,041.94	42,882.78
	6%	8%	9%	10%	10%

Statement of Financial Position

	Year 1	Year 2	Year 3	Year 4	Year 5
ASSETS					
NON-CURRENT ASSETS					
Property, plant and equipment	5,114,704	4,559,848	4,004,991	3,450,135	2,895,279
	5,114,704	**4,559,848**	**4,004,991**	**3,450,135**	**2,895,279**
CURRENT ASSETS					
Inventory	1,181,952	1,485,891	1,776,921	2,078,997	2,120,577
Trade and other receivables	2,363,904	2,971,782	3,553,841	4,157,994	4,241,154
Cash and bank balances	(1,141,377)	2,714,182	5,958,453	10,001,848	14,183,502
	2,404,479	7,171,855	11,289,215	16,238,840	20,545,233
TOTAL ASSETS	**7,519,183**	**11,731,702**	**15,294,206**	**19,688,975**	**23,440,512**
EQUITY AND LIABILITIES					
Capital and reserves					
Share capital	2,835,066	2,835,066	2,835,066	2,835,066	2,835,066
Retained earnings	1,545,193	4,020,247	7,396,915	11,676,674	15,974,957
Shareholders' Funds	**4,380,260**	**6,855,313**	**10,231,981**	**14,511,740**	**18,810,023**

	Year 1	Year 2	Year 3	Year 4	Year 5
LIABILITIES					
Non-current liabilities					
Borrowings	2,668,298	2,001,223	1,334,149	667,074	-
	2,668,298	**2,001,223**	**1,334,149**	**667,074**	-
Current liabilities					
Trade and other payables	76,608	1,155,693	1,382,049	1,616,998	1,649,338
Interest	338,540	658,736	898,883	1,058,981	1,139,030
Taxation	55,477	1,060,737	1,447,144	1,834,182	1,842,121
	470,626	2,875,166	3,728,076	4,510,161	4,630,489
TOTAL EQUITY AND LIABILITIES	**7,519,183**	**11,731,702**	**15,294,206**	**19,688,975**	**23,440,512**

Statement of Cashflows

CASHFLOW STATEMENT	Year 1	Year 2	Year 3	Year 4	Year 5
CASH FLOWS FROM OPERATING ACTIVITIES					
Net (Loss)/Profit before taxation	2,207,419	3,535,791	4,823,812	6,113,941	6,140,405
Adjustments for:					
Interest	338,540	320,196	240,147	160,098	80,049
Amortisation	-	-	-	-	-
Depreciation	555,429	554,856	554,856	554,856	554,856

CASHFLOW STATEMENT	Year 1	Year 2	Year 3	Year 4	Year 5
Operating (loss)/profit before working capital changes	**3,101,388**	**4,410,843**	**5,618,815**	**6,828,895**	**6,775,310**
Decrease/(Increase) in Inventory	(1,181,952)	(303,939)	(291,030)	(302,077)	(41,580)
Decrease/(Increase) in trade and other receivables	(2,363,904)	(607,878)	(582,059)	(604,153)	(83,160)
(Decrease)/Increase in trade and other payables	76,608	1,079,085	226,356	234,948	32,340
	(3,469,248)	167,268	(646,733)	(671,281)	(92,400)
Net cash from operating activities	**(367,860)**	**4,578,111**	**4,972,082**	**6,157,614**	**6,682,910**
Corporation tax paid	(606,748)	(55,477)	(1,060,737)	(1,447,144)	(1,834,182)
Net cash generated/(used) by operating activities	**(974,608)**	**4,522,633**	**3,911,345**	**4,710,470**	**4,848,728**
CASH FLOWS FROM INVESTING ACTIVITIES					
Disposals					
Purchase of property, plant and equipment	(5,670,133)	-	-	-	-
Net cash used by investing activities	**(5,670,133)**	-	-	-	-
CASH FLOWS FROM FINANCING ACTIVITIES					
Share capital	2,835,066	-	-	-	-
Related Party borrowings	2,835,066				
Loan repayment	(166,769)	(667,074)	(667,074)	(667,074)	(667,074)
Accrued Interest charges					
Net cash from financing activities	**5,503,364**	**(667,074)**	**(667,074)**	**(667,074)**	**(667,074)**
Net (decrease)/increase in cash and equivalents	(1,141,377)	3,855,559	3,244,271	4,043,396	4,181,653
Cash and cash equivalents at the beginning of year	-	(1,141,377)	2,714,182	5,958,453	10,001,848
Cash and cash equivalents at the end of the year	**(1,141,377)**	**2,714,182**	**5,958,453**	**10,001,848**	**14,183,502**

Ratio analysis

Ratio Analysis	Year 1	Year 2	Year 3	Year 4	Year 5
Net profit ratio	6%	8%	9%	10%	10%
Return on capital employed	21%	21%	22%	22%	18%
Leverage ratio	61%	29%	13%	5%	0%
Free cash flows to firm	(1,030,085)	3,517,373	3,524,939	4,323,431	4,840,789
Free cash flows to equity	(1,368,626)	3,197,178	3,284,792	4,163,334	4,760,740
Project IRR	28%				
Equity IRR	25%				
Debt IRR	2%				
Payback period (years)	4				
EBITDA Margin	13%	14%	15%	16%	15%
Gross Margin	22%	22%	22%	22%	22%
DSCR	7.88	41.00	25.74	50.67	375.96
Interest Coverage	8	12	21	39	78
Asset Turnover	10.22	4.31	3.27	2.66	2.15
Debt/EBITDA Multiple	0.86	0.45	0.24	0.10	-
WCR/Sales	**(0.14)**	**0.01**	**(0.02)**	**(0.02)**	**(0.00)**

(Footnotes)

1 Uganda National Development Plan III

2 Arabica Coffee Handbook by UCDA

3 UCDA Monthly Reports 2019

4 http://www.thecoffeeguide.org/coffee-guide/coffee-quality/robusta---the-species/

5 Ibid

6 WTO Report Annex page 386

7 WTO Report Annex page 374-376

8 Environment & Development Series 15 Third World Network page 6

9 Uganda Bureau of Statistics 2019 Statistical Abstract page 8

10 2015/16-2019/2020 Kasese District Development Plan page 9

11 (NDP III) page 39

12 The Agri-business scan for Uganda page 4

13 The Agri-business scan for Uganda page 4

14 The Agri-business scan for Uganda page 4

15 The Agri-business scan page 14

16 2015/16-2019/20 Agriculture Sector Strategic Plan page 32

17 The Agri-business scan for Uganda page 21

18 The Agri-business scan for Uganda page 21

19 2015/16-2019/20 Agriculture Sector Strategic Plan page iii

20 2015/16-2019/20 Agriculture Sector Strategic Plan page iii

21 BMAU Briefing Paper 25/19 page 3

22 2015/16-2019/20 Agriculture Sector Strategic Plan page 12

23 2015/16-2019/20 Agriculture Sector Strategic Plan page iii

24 Uganda Bureau of Statistics 2019 Statistical Abstract page 188

25 The Agri-business scan for Uganda page 21

26 Fostering a sustainable Agro-Industrialisation Agenda in Uganda page 11

27 Fostering a sustainable Agro-Industrialisation Agenda in Uganda page 11

28 National Agriculture Policy 2013 page 13

29 2015/16-2019/20 Agriculture Sector Strategic Plan page iii

30 2015/16-2019/20 Agriculture Sector Strategic Plan Page Viii

31 National Agriculture Policy 2013 page 13

32 National Agriculture Policy 2013 page 13

33 Platform for Agricultural Risk Management Report May 2017 page 12

34 https://tracfm.org

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SUSTAINABLE DEVELOPMENT GOALS