



Profitability Analysis Overview for Certified Arabica Coffee Seed Production to Seed Entrepreneurs in Ethiopia

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Abstract: The objectives of the enterprise is to provide high yielding, disease-resistant, pure, viable, and quality coffee seed services to coffee growers, NGO's and other private and governmental coffee-growing sectors. It will start as a private limited company with two stakeholders. The business starts its production with the amount of 10qt/ha certified coffee seeds. Annual production will begin a total of 20,000 kg (200qt) from 20 hectares after four years, which the business starts, and increase to 50,000kg (500qt) with a total area of 50 hectares after year six. The business will produce certified Arabica coffee seed to four agro-ecological production areas; which are Harar, Wollega (Nekemt), Limu and Sidama/Yirgacheffee coffee specialties. These coffee production regions have their own quality standards; to meet that standard and maximize the national market opportunity the business is paramount. The majority of the business will be sold in their own shop, but as production increases, the owners will utilize other distribution channels to reach the individual customers. The amount of money required to start up the business will be Birr 1,000,000. From this, 50% will be from the bank with 15 years loan period and 50% own saving. Out of the total initial investment birr 420,000 will be used for asset cost and 580,000 working cost. Generally, this capital will be used to construct the certified coffee seed store, to purchase tractors, coffee processing machines, generator office materials, and the necessary farm equipment, and to cover operating expenses. The enterprise requires 20 to 30 daily and contract workers when the business starts and increases more than 50 workers after five years of establishment. The profitability assumption is based on the total annual production of 500,000 Kg of coffee seeds. This is the volume of the product that will be supplied to the market after the projected permanently established. GGCACSE will be selling certified coffee seed at a basic minimum of birr 110 per kilogram - the maximum price will depend on the market. The average net profit margin over the projected three-year production period, based on the price of birr 110/kg is estimated at 29.3%. The break-even percentage is 3.34. At this point the business neither profit nor loss. The project is expected to provide an annual net profit in the fourth, fifth year 546,582 ETB and 769,096 ETB respectively. It will be increased to 1,912,153 ETB after six years of business establishment.

Keywords: Arabica Coffee, Business, Certified Seed, Enterprise

1. Introduction

Coffee (*Coffea arabica*L.) is the most important crop, and one of the most enjoyed beverages throughout the world. As a result several hundred millions of people in the world drink coffee. It is one of the leading commodities in the international trade, and currently generates revenue of about US\$ 14 billion annually for the producing countries. More than 80 countries, including Ethiopia cultivate coffee that exported for more than 165 countries worldwide providing a livelihood for 100

million people around the world [10].

In Ethiopia, coffee is one of the major and leading export items. Ethiopia is currently producing an estimated 9.8 million bags that would rank the country as the fifth largest coffee producer in the world [9]. Apparently, coffee is at the center of Ethiopian culture and economy, contributing to 35% of the country's foreign currency earnings. It accounts for 10% of the gross domestic product, and supports the livelihoods of around 25% of the population of Ethiopia in one way or another [8].

Ethiopia is both the center of origin and diversification

of *C. arabica* L. [4, 5, 7]. The crop spreads widely from the riverbank of Gambella plain (550 m.a.s.l) stretching to the central and Eastern highlands of the country, where it exists in the great range of types within species [3]. Due to this fact that Ethiopia is enormous genetic variability, that offers great potential for improvement of the crop.

Despite its great importance, the average national productivity is very low (about 6.91 quintals per hectare (average of two consecutive years, 2014/15 to 2015/16)) as compared to the average productivity of the world and other major coffee producing countries [6]. This is attributed to shortage of improved varieties, diseases, insect pests, drought, and poor management [1]. Among many reasons that limited coffee productivity improvement, shortage of pure line and hybrid varieties is the major one [2, 4, 11]. Intensive efforts have been made by Jimma Agricultural Research Center (JARC) to boost coffee productivity in the country. Over the last 50 years, 42 coffee varieties, out of which thirty-five pure lines and sevenhybrids released for various major coffee growing agro-ecologies of the country [12].

Although many factors hampered production and yield per unit area, the major factors contributing to such low coffee yield include predominant use of unimproved local coffee landraces, as well as conventional husbandry and processing practices, which in turn seriously hampers the overall national coffee production and productivity of the smallholder coffee farmers in the country. The Ethiopian framers used local coffee seeds and production is not as much increase as Ethiopia is the center of origin. To increase coffee production and productivity of the country and to export high and quality coffee to the world market using improved variety with good husbandry is mandatory. Then the incomes of individual increase and as a whole the country economy fasten rapidly.

The objectives of the Green Gold Certified Arabica coffee seed enterprise (GGCACSE) are:

1. To provide certified and quality coffee seed to the Ethiopian coffee growing farmers and private and governmental sectors, which produce coffee in the country according to agro ecological zones.
2. To alleviate the current low supply of breeder and certified coffee seed by different sectors, and to produce enough amount of certified seed based on the requirements.
3. To aware the coffee growing farmers and different growers about the importance of using certified coffee seed and performing appropriate agronomic and cultural practices in their production. Generally, the business improves the livelihood of coffee growers, and increases the country economy.

2. Business Description

2.1. Name of the Business

The business will be known as “The Green Gold Certified Arabica coffee seed enterprise (GGCACSE)”.

2.2. Mission Statement

To provide, high yielding, disease resistant, pure, viable and quality coffee seed services to the small coffee growing farmers, NGO’s and other private and governmental sectors, they work on coffee production surrounding the major coffee growing areas of the country. The business focus to provide certified coffee seed services and give emphasis on skills development how to grow coffee to produce a maximum production. The skill and experience sharing approach to different sectors starting from sowing and nursery management up to the end of coffee processing stages, i.e. harvesting, processing and packing until they export or transmit to exporter. Then, the farmers and different coffee growing sectors grow the quality coffee seed and produce high yielding, disease resistance and a quality coffee and provide a superiority coffee production service to the local and international markets. After this, the income of the individual farmers, private, governmental sectors and as a whole the country revenue will be increase rapidly.

2.3. Ownership of the Business

The business will be started as private limited company with two stakeholders, Mr. X and Mr. Y. Mr. X is coffee breeder and pathologies, and Mr. Y is coffee agronomist in their profession. Each of the stakeholders will own about 50% of the issued stocks and equal to their individual paid-in capital. The formal character and agreement will be accordance with the law of the Ethiopian country and drawn up governing rules by the GGCACSE owners.

2.4. Business Information

Types of Business and Product or Service

The purpose of the GGCACSE is to provide Certified and a quality coffee seed to the Ethiopian coffee growing farmers, NGO’s that works on coffee plantation, governmental coffee plantation sectors located in different parts of the country, specially to the south west, southern and south east parts of the Ethiopia, which are the major coffee producing areas in the country. The business runs through using good yielding, quality and disease resistant coffee varieties by the research. Most of the Ethiopian farmers used forest coffee or local seeds with no or little coffee management practices, and why the production of the country is very low. In this private enterprise planned to plant improved coffee seeds on field by maintaining its purity and supply for different stakeholders as a certified coffee seed.

2.5. History of the Business

The business has no any history but there is research center and limited coffee seed enterprise that provide coffee seed, but the amount of production and the quality of service is low and as compared to the demand of the country. As we know, most of the Ethiopian coffee production is holding on the small coffee growers, those farmers used forest and semi-forest production system. As a result, the production capacity is about 6 to 7qt/ha at average in the national production [6, 13]. This is low

production as compared to the capacity of the released varieties in the research and the potential of the country. By contributing a certified coffee seeds to the farmers and different coffee growing sectors, the forest and semi-forest production system will be changed into modern plantation system. Then, the coffee production of the country increases in sustainable way. The two owners have experience and knowledge on coffee production, processing and management. Mr. X has more than 5-years of research experience in coffee breeding and pathology; Mr. Y has 3-years of experience in coffee agronomy and administrative experience. Therefore, Mr. Y will manage the administrative duties of the company.

2.5.1. Location and Hours of Operation

The proposed business location will be at Jimma, Ethiopia, currently, land is owned by the government and we propose to the government to provide them the land for coffee seed production. The business hours will be from 8:00 a.m. to 5 p.m. Monday to Saturday. The company will be closed every Sunday, New Year's Day, Christmas, Thanksgiving and Easter.

2.5.2. Revenues and Accounting

Revenues will generate by providing reliable and quality seed services to the Ethiopian farmers, private and governmental coffee producing sectors. For the beginning of three years of the enterprise no need of an accountant, but when the production start to produce accountant will be employee for the preparation of business financial statements and taxes.

2.5.3. Legal

The business will be in compliance regarding the rules and regulations of the certified seed agency, and the Ethiopian agricultural policy. The owners will obtain the required operating licenses issued by the certified seed agency of Ethiopia and from Jimma city trade and industry office. The law of land administration office will provide contractual agreements and other legal services.

2.5.4. Current Proposal

As the need for GGCACSE services Mr. X and Mr. Y have a total of birr 500,000 each of them contribute birr 250,000 to invest in this project (in cash and bank saving). They need additional financing business from bank loans birr 500,000 for 15 years loan period to acquisition of equipment, a total

birr 1,000,000 will be required to run the business.

3. Product and Services

3.1. Target Market

The proposed GGCACSE is targeting coffee growing farmers who are motivated to change their production and productivity. The ideal customers are highly interested to use certified coffee seed to produce the maximum production through their effort. The second target market consists of various coffee growers such as NGO's, governmental sectors, other private sectors and coffee growing enterprises. The final business group that the GGCACSE is targeting will be certified coffee seed shop owners.

3.2. Product

The product of the business will be based on four agro-ecological zones of Ethiopia, which are major coffee production areas. These are; 1) Harar specialty coffee, which produced in the eastern highlands at altitudes of 1,510 to 2,120 m.a.s.l. 2) Wollega (Nekemt) specialty coffee known for its fruity taste has medium-to-bold sized beans and a greenish-brownish color. 3) Limu specialty coffee produced at an altitude from 1,400 to 2,020 meters above sea level. The beans of this origin are greenish-bluish in color and mostly round in shape, and have a medium-sized. 4) Sidama/Yirgacheffe coffee specialty; it produced in southern parts of Ethiopia at altitudes of between 1,400 to 2,200 meters above sea level. We will be using varieties released from research, which are high yielding, disease resistant and quality to produce certified coffee seed.

3.3. Production Volumes

The amount of certified coffee seed production with good management and the necessary inputs will be 10qt/ha or 1000kg/ha. It will be determined that for the proposed coffee seed production starts in year four with total amount production 20,000kg in 20ha of land and increase as the enterprise builds its reputation and customer base. However, the production of seeds will be reached up to 50ha of land with 50,000kg certified coffee seed production as shown in table 1.

Table 1. Annual certified coffee seed Production Volumes for each agro ecological coffee growing zones (kg).

Variety	Year 4		Year 5		Year 6		Year 7 ⁺	
	CP (ha)	Tot. Prod.(kg)	CP (ha)	Tot. Prod.(kg)	CP (ha)	Tot. Prod.(kg)	CP (ha)	Tot. Prod.(kg)
Limu	5	5,000	8	8,000	15	15,000	15	15,000
Nakemt	5	5,000	7	7,000	12	12,000	12	12,000
Harer	4	4,000	5	5,000	12	12,000	12	12,000
Sidama a/ Yirgacheffe	6	6,000	10	10,000	11	11,000	11	11,000
Total	20	20,000	30	30,000	50	50,000	50	50,000

CP means coffee plantation in hectare of land

Tot. Prod. =total production per variety; Year1 up to year3 the coffee trees have found in seedling stage, i.e. no income generates during these period.

3.4. Processing Storage and Packing

During processing, each variety processed with different

machine or through careful cleaning of the machine. In addition to this, during drying the seed will be maintained with

optimum sun light, specially protect from high sun radiation during the day time until the moisture percentage reached 11.5%. The type of stores will be cold room to longevity its viability and germination percentage. The germination percentage and viability is essential features to attract customers. Production of the faithful varieties without genetic constitution loss will be supply to the customers. Packing material will be attractive and its working materials will not be heat absorbance so the temperature inside the sack not to be aggravate.

4. Market Analysis

Coffee growing areas of Ethiopia is rapidly going up due to expansion of smallholder farmers and many coffee sectors and investors. This shows that coffee production become more increasingly from the previous time. So, those individuals, sectors and investor require large amount of certified coffee seed. GGCASE specifically targets the smallholder farmers, NGO's, investors and governmental coffee production sectors located in different coffee growing areas of Ethiopia.

4.1. Distribution and Sales Strategy

The first and most preferred certified coffee seed-marketing channel is direct sales to customers. The second marketing channel consists of direct sales to in-state retailers. Wholesalers permit and operate as an in-house distributor selling certified coffee seed directly to individuals. An advantage of selling directly to retail outlets is higher margins, self-representation, and the ability to develop a relationship with retail customers. The third marketing channel involves selling to distributors. Distributors are necessary for reaching seeds to individual farmers located throughout the nation.

4.2. Price

The proposed certified coffee seed will adopt a moderate price with high quality strategy. Prestige pricing will be used to inform customers of the high quality product being sold. The following table 2 showed the proposed retail one-kilogram prices for the certified coffee seed. The Prices will determine by looking at competitor's prices and through discussions with the GGCACSE Committee.

Table 2. forecast retail one-kilogram certified coffee seed Prices.

Certified coffee seed variety	Year 4			Year 5			Year 6 ⁺		
	Price ETB/kg	Total kg	Total price (ETB)	Price ETB/kg	Total kg	Total price (ETB)	Price ETB/kg	Total kg	Total price ETB
Limu	110	5,000	550,000	110	8,000	880,000	110	15,000	1,650,000
Nakemt	110	5,000	550,000	110	7,000	770,000	110	12,000	1,320,000
Harer	110	4,000	440,000	110	5,000	550,000	110	12,000	1,320,000
Sidama/Yirgacheffee	110	6,000	660,000	110	10,000	1,100,000	110	11,000	1,210,000
Total		20,000	2,200,000		30,000	3,300,000		50,000	5,500,000

ETB-Ethiopian birr, kg- kilogram

4.3. Comparative Competitor Analysis

Now, there is one coffee seed multiplier and distributor well known in the country; i.e., Jimma Agricultural Research Center (JARC) that offers direct competition. Some NGO'S also produce seeds for themselves but they do not supply for others.

Table 3. Comparative Competitor Analysis.

	Product/Service	Quality	Price	Location	Marketing Program	Germination & viability
GGCASE	5	5	4	4	5	5
JARC seed multiplication	3	5	5	5	3	4

Note: Range 1-5 (5 being highest/best possible score, lowest score.)

5. Marketing Plan

GGCACSE will be promoted in various local media. Clients might be already beginning promotion by word of mouth after the first product. Formal advertising planned to begin six months before the company is scheduled to start giving production.

Promotion

They may use a combination of advertising, personal selling, sales promotion, newspaper, media, public relations, and direct marketing tools to communicate with current and prospective customers. Promotion activities will be targeted at both end consumers and middlemen. End consumer promotion events will be intended to bring customers to the market. Events

targeting intermediaries will focus on building relationships and reestablishing contact. A large focus of the promotion campaign will be developing good public relations among customers and the community. A significant percentage of certified coffee seed will be used for promotional purposes.

6. Management Plan

Mr. X will be responsible for the overall operation of the GGCACSE service. He has experience with repairs and light construction projects, while, Mr. Y will be responsible for account and administration of the company for the first three years. The selection and retention of employees, as well as the expenditure of funds will be jointly shared.

6.1. Leadership / Entrepreneurial Team

The business owners will need recruit, train and quality employee for the enterprise. They acquire well experience in coffee planting, management, processing, and so on. There is accessible labor around the area for daily activities. Most of the workers will be temporarily and contract employee due to

the seasonal nature of the business as shown in tables 4, 5 and 6. However, even if some workers will be in contract way they stay in company throughout the year. Those employees will be accountant and other service providers. The employees will be paid according to their educational background and the company profit. Additionally, the payment will be considered with the other governmental sectors and NGO'S.

Table 4. Projected Personnel Requirements.

Employee job descriptions					
Position Job Description	required no.	monthly salary	Profession	experience	Jobdescription
General Manager	1	6000ETB	B. SC./M. SC. In plant science, agronomy	4/2 years	coffee seed quality control, coordinating operation and maintenance, sales, marketing, financial record keeping, and staffing (Starting in year 4)
Coffee processor	1	4000ETB	B. SC./M. SC. In plant science, agronomy	4 years	Coffee production, processing management, and quality control (Starting in year 4)
Sales Person	1	4000ETB	B. SC. in accounting	3 years	Promote and market certified coffee seed, organize product shippingfunctions, and maintain relationship with distributors (Starting in year 4)
Secretarial	1	3000ETB	College diploma orB. SC in computer science or IT	3/1 year	Answer phone calls, file papers, assist with accounting (Starting in year 4)
Temporary harvest worker	20	600ETB		1 year	used for land preparation, planting, nursery and field management and harvest coffee production during maturity
Temporary processing worker	20	600ETB		1 year	pulping and washing the mature red coffee (Starting in year 4)

Table 5. Full time Personnel Requirements & Expenses.

Job Title	year 1	year 2	year 3	year 4	year 5	year 6+
General Manager				72,000	84,000	84,000
Coffee processorexpert				48,000	60,000	60,000
Sales Person				48,000	60,000	60,000
Clerical/ secretarial				36,000	36,000	48,000
Total Full time annual labor Expense				204,000	240,000	252,000

Table 6. Part time Personnel Requirements & Expenses (ETB).

Job Title	year 1	year 2	year 3	year 4	year 5	year 6+
Temporaryland preparation workers	45,000	50,000	75,000	20,000	20,000	20,000
Temporary planting workers	20,000	24,000	50,000	10,000	10,000	20,000
Nursery & field mang't workers	13,000	20,000	70,000	150,000	300,000	350,000
Temporary harvest workers				125,000	250,000	340,000
Temporary transport workers				70,000	80,000	100,000
Temporary processing workers				75,000	200,000	270,000
Total Part time annual labourExpense	78,000	94,000	195,000	450,000	860,000	1,100,000

Table7. The GGCACSE working plan for certified coffee seed production

Activities	jul.	aug.	sep.	oc.	no.	dec.	jan.	feb.	mar.	ap.	may.	jun
Land prep/seed purchasing						X	X	X	X			
Nursery preparation				X	X							
seed sawing					X							
Transplanting												X
planting												X
management	X	X	X	X	X	X	X	X	X	X	X	X
fertilizer application	x	X	x									
seedling watering						x	x	x	x			
Harvesting				x	X	x						
Processing				x	X	x						
Drying				x	X	x	x	x				
Storing									x			
Marketing									x	x	x	

6.2. Operational Plan

The enterprise will be accomplishing different activities according to the seasonal distribution as shown in table 7.

Table 8. Sources and uses of cash.

Financial Data	
a. Sources and uses of cash	
sources of cash (ETB)	
1. Bank loans:	ETB
term loan (15 years)	500,000
2. Personal investment:	500,000
Total	1,000,000
Uses of cash	
Cost	
Purchase coffee processing machine	40,000
Tractor	300,000
Purchase generator	10,000
Office materials	50,000
Farm equipments	20,000
Working capital	568,018
Reserve for contingencies	11,982
Total	1,000,000
b. Capital equipment list	
Equipment and accessories	
Cost	
Tractor	300,000
Coffee processing machine	40,000
Generator	10,000
Office materials	50,000
Farm equipment	20,000
Total equipment	420,000

7. Financial Plan

The financial projections will be based on three-year expenditure of 580,000 ETB. During the fourth years of production expense will be birr 654,000 ETB and the fifth, sixth and the consecutive years of operation costs will be 1,100,000 ETB and 1,352,000 ETB, respectively, it covers from coffee seed. The first three successive years, there is no production service because the coffee plants take 3-4 years to give yield. So, during this time only expenditure and there

is no revenue or income. This project will give the corporation a gross profit of 2,200,000 ETB, 3,300,000 ETB and 5,500,000 ETB and net income profit of 546,582 ETB, 769,096 ETB and 1,912,153 ETB in the fourth, fifth, sixth and consecutive production year, respectively. Initial enrollment is expected to be 20, increasing 40- 50 by the successive year of production. The employments perform the activities of coffee plant management, harvesting, transport, processing, packing and selling. Each enrollment has its own work descriptions and they perform other tasks according to the workload and the condition.

7.1. Cash Flow Statement

Table 9. Pro-Forma Cash Flow Template (ETB).

	year 1	year 2	year 3	year 4	year 5	year 6+
Beginning Cash Balance	1,000,000	858,308	699,541	431,983	1788564	3762660
Cash Inflows						
Equity Injections	500,000	0	0	0	0	0
Loan Proceeds	500,000	0	0	0	0	0
Cash Sales	—	—	—	2,200,000	3,300,000	5,500,000
Total Cash Inflows	1,000,000	858,308	699,541	2,631,983	5,088,564	9,262,660
Cash Outflows						
Other Wages	78,000	94,000	195,000	654,000	1,100,000	1,352,000
Payroll Taxes	5244.2	6319.93	13110.5	43,971	73,957	90,899
Insurance	0	0	0	50,000	50,000	50,000
oil, lubricant & Fuel	5000	5000	5000	15,000	15,000	20,000
Repair & maintenance	0	0	0	5,000	10,000	13,000
Advertising	0	0	0	20,000	20,000	30,000
License and tax	4000	4000	5000	5,000	6,000	6,000
Other expense	2000	2000	2000	3,000	3,500	3,500
Interest Expense	47447.64	47447.64	47447.64	47447.64	47447.64	47447.64
Total Cash Outflows	141,692	158,768	267,558	843,419	1,325,905	1,612,847
Ending Cash Balance	858,308	699,541	431,983	1,788,564	3,762,660	7,649,813

7.2. Income Statements

Table 10. Income statements six-years summary (ETB).

	Year 1	Year2	Year3	Year4	Year5	Year6+
Income						
Gross sales	0	0	0	2,200,000	3,300,000	5,500,000
Less: returns and allowances	0	0	0	40,00	50,000	50,000
Net sales	0	0	0	2,160,000	3,250,000	5,450,000
Less cost of goods sold	0	0	0	770,000	1,155,000	1,925,000
Gross profit	–	–	–	1,390,000	2,095,000	3,525,000
Operating expenses:						
Employee wages	78,000	94,000	195,000	654,000	1,100,000	1,352,000
Payroll taxes	5244.2	6319.93	13110.5	43,971	73,957	90,899
Oil, lubricant and fuel	5000	5000	5000	15,000	15,000	20,000
Repairs& maintenance	0	0	0	5,000	10,000	13,000
Advertising& promotion	0	0	0	20,000	20,000	30,000
Insurance	0	0	0	50,000	50,000	50,000
Taxes& licenses	4000	4000	5000	5,000	6,000	6,000
Interest	47447.64	47447.64	47447.64	47447.64	47447.64	47447.64
Coffee seed, fertilizer expenditure	2000	2000	2000	3,000	3,500	3,500
Total operating expenses	141,692	158,768	267,558	843,418	1,325,904	1,612,847
Net profit	–	–	–	546,582	769,096	1,912,153

Less cost of goods sold is equal to 35% of the sales

7.3. Balance Sheet Statements

Table 11. Balance sheet statements (ETB).

Balance sheet		
Assets	Liabilities& net worth	
Current assets		
Cash	194,244	Current liabilities
Total current assets	94,244	Accounts payable
Fixed assets		Total current liabilities
Equipment	47,448	
Total fixed assets	47,448	Long-term liabilities
Total assets	241,692	Notes payable*
		Bank loan payable*
		Total liabilities
		Net worth: owner's equity
		Total liabilities& net worth

7.4. Break Even Analysis

Break-even point (BEP) Calculation

BEP Sales

$$\text{BEP Sales} = \frac{\text{Annual Sales} \times \text{Annual Fixed Cost}}{\text{Annual Sales} - \text{Annual Variable Costs}}$$

$$\text{BEP Sales} = \frac{2,200,000 \times 47447.64}{2,200,000 - 795970.36}$$

$$= 74346.58$$

BEP Production

$$\text{BEP Production} = \frac{\text{Break – even Point Sales}}{\text{Unit Selling Price}}$$

$$\text{BEP Production} = \frac{74346.58}{2,200,000}$$

$$= 0.034$$

BEP Percentage

$$\text{BEP Production} = \frac{\text{Annual Fixed Costs} \times 100\%}{\text{Annual Sales} - \text{Annual Variable Costs}}$$

$$\text{BEP Production} = \frac{47447.64 \times 100\%}{2,200,000 - 795970.36}$$

$$= 3.34\%$$

Therefore, at 3.34 percent of sales or production at which the GGCACSE business will makes neither profit nor loss. Production/sales above this level will result in a profit and Production/ sales below this point will result in a loss.

8. Conclusions

Research showed that customer's requirement is much more than the amount of supplied certified coffee seed production at the moment; i.e., demand and supply is not balanced. Few coffee seed producers in Jimm zone focus exclusively on limited coffee growing location to supply certified coffee seed and doing so will differentiate us from local competitors and create broad market opportunity. Therefore, starting business on certified Arabica coffee seed production is profitable, alleviate the current improved seed shortage, increase production and boost the coffee exporting volume of the country.

Acronym

BSC	Bachelor of Science
CP	Coffee plantation
ETB	Ethiopian birr
GGCASE	Green gold Arabica coffee seed enterprise
HA	Hectare
KG	Kilogram
M.	Meter
MASL	Above sea level
M. SC	masters of Science
MR	Mister
NGO'S	Nongovernmental organizations
NO	Number
US\$	United states dollar

Appendix

Table 12. Lists of farm tools and equipment required and their estimated costs.

Equipments	Model	Measurement	Amount per Measurement	Cost paramount	Total cost
1. Major farm equipments					
Tractor	FORD-152	No.	1	300,000	300,000
Coffee processing machine	MS-1874	No.	1	40,000	40,000
Generator	L-451	No.	1	10,000	10,000
Total				350,000	350,000
Minor farm equipment					
Hoe		No.	20	100	2000
Shovel		No.	20	40	800
Meter		m.	100	100	200
Polyten tube		Fold	2	200	400
Rake		No.	20	30	600
Watering can		No.	30	40	1200
Axe		No.	10	100	1000
Small hoe		No.	30	30	900
Harvesting bag		No.	50	30	1500
Machete		No.	40	100	4000
Sickle		No.	10	80	800
Sac		No.	250	10	2500
Blade		No.	50	20	1000
Wire		Fold	20	100	2000
Nile		Kg	20	30	600
Pruning scissor		No.	10	50	500
Total minor equipment					20,000
Furniture & fixtures					
Store		No.	1		40,000
Stationery					2,000
Furniture		No.	5		8,000
Total furniture & fixtures					50,000
Total equipment					420,000

References

- [1] Admasu S, Klause F (2007). National production Effect of Investment in Coffee Berry Disease Resistant Selections in Ethiopia. *In: Proceedings of the workshop on four decades of coffee research and development in Ethiopia: A National workshop*, 14-17 August 2007.
- [2] Babur D (2009). Effectiveness of farmer field school in promoting coffee management practices: the case of Jima and Sidama Zones. Msc. Thesis presented to school of graduate studies of Haramaya University.
- [3] Bayetta B (1986). Exploration and collection of coffee germplasm from Gambella plain. IAR news letter. Addis Ababa. 1 (2) 3-5.
- [4] Bayetta B (2001). Arabica Coffee Breeding for Yield and Resistance to Coffee Berry Disease (*colletotrichumkaahawaesp.nov*). Ph. D dissertation, Imperial College at Wye, University of London, England
- [5] Bayetta B, Behailu A, Gibramu T (1998). Description and production Recommendation for new Cultivars of Coffee. IAR Research Report, No. 34.
- [6] Central Statistical Agency (CSA), 2016. The Federal Democratic Republic of Ethiopia Agricultural sample survey report on area and production of major crops, volume, I. statistical bulletin, 584.
- [7] Fernie LM (1966). Some Impressions of Coffee in Ethiopia. *Kenya Coffee* 31: 115-121.
- [8] Gole TW, Senebeta F (2008). Sustainable management and promotion of forest coffee in Bale, Ethiopia. Bale Eco-Region Sustainable Management Programme SOS Sahel/FARM-Africa, Addis Ababa.
- [9] International Coffee Organization (ICO) (2012). Ethiopian coffee production exceeds expectation. International coffee organization London.
- [10] International coffee organization (ICO) (2001). Positively coffee. International coffee organization, London.
- [11] Mesfin A (1988). Recommendation Adoption and impact of Improved Coffee Production Technologies in the Western Region of Ethiopia. pp. 136-141. *In: 20th NCIC*, 28-30 Mar 1988, Addis Ababa.
- [12] MOA (2019). Crop Variety Register Issue No. 22. Ministry of Agriculture Animal and Plant Health Regul. Directorate. 2019. Addis Ababa, Ethiopia.
- [13] Workafes W, Kassu K (2000). Coffee production system in Ethiopia. Pp 90-106. *In: Proceedings of work-shop on control of coffee berry disease in Ethiopia*. 13-15th. August 1999, Addis Ababa, Ethiopia.