

**AMERICAN COLLEGE OF TECHNOLOGY**

**DEPARTMENT OF BUSINESS STUDIES**

**MASTER OF BUSINESS ADMINISTRATION PROGRAM**



**FEASIBILITY STUDY OF BLACK STONE QUARRY AND CRUSHER  
PROJECT**

**A Project Submitted to the Department of Business Studies of American  
College of Technology as a Partial Fulfilment of the requirement of the Award  
of Master of Business Administration**

**By**

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**Dec 2023**

**Addis Ababa, Ethiopia**

## DECLARATION

I, Haymanot T/mariam hereby declare that a project work entitled “BLACK STONE QUARRY AND CRUSHER PROJECT” submitted to The Department of Business studies of American College of Technology in partial fulfilment of the requirements for the award of the Master Business Administration is a record of original work done by me during 2023 academic year under the supervision and guidance of \_\_\_\_\_ and it has not formed the basis for the award of any Degree/Diploma/Associate ship/Fellowship or other similar title of any candidate of any university.

Place: Addis Ababa

Date: \_\_\_\_\_

---

Signature of the Candidate

## **CERTIFICATE**

This is to certify that the project work entitled “Black Stone Quarry And Crusher Project” submitted to the Department of Business Administration, MBA Program in partial fulfillment of the requirements for the award of the Master of Business Administration is a record of original project work done by Haymanot T/Mariam during the period 2023 academic year under my supervision and guidance and the thesis has not formed the basis for the award of any Degree/Diploma/Associate ship/Fellowship or other similar title of any candidate of any University and it complies with the regulation and accepted standards of the College.

Name of Advisor: \_\_\_\_\_

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**APPROVAL SHEET**

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DEPARTMENT OF BUSINESS STUDIES  
MASTER OF BUSINESS ADMINISTRATION PROGRAM**

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Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

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## **PROJECT EXECUTIVE SUMMARY**

*The purpose of this project report have been requested land that has mining potential of black stone quarry on Semen Shoa Zone, AngolalaTeraWoreda, Serite Keble, specific name Meshege. The organization would have objective of supplying and fill the gap of Black stone material shortage in highly blooming construction sectors in the country. As a result of shallow depth and rock nature of sub-layer force to categorize land suitability for Eucalyptus species, control grazing land or quarry mining would be more suitable. The area is bounded by different sister investments and farm land. Starting from land holding period the business had been plan to invest on certified land of two block counting (8000m<sup>2</sup>) for exploring Black stone raw materials in Amhara regional administrative state, north Showa zone AngolalaTeraWoreda, Serite Keble, specific name Meshege, about 100 km some distance from main road to the north of Addis Ababa.*

*The main driving force encouraging the owner to invest on Black stone quarry mining is access of raw material besides, more experience in the sectors, potential of capital for investment (low cost tools and equipment for excavation), access of labors in quarry site, demand of Black stone in the area for construction, and encouraging policy set for investors to upgrade from traditional production to small scale types.*

*The proposed business whose primary activity would be exploring 8000m<sup>3</sup>of Black stone mining left on already hold area of land (8000m<sup>2</sup>) and to deliver the output to domestic marketwithin4 year life cycle periods by total investment cost of 5,000,000 birr.*

*The project intends to create job opportunity for an average of 10 permanent and 47temporary employees, besides transferring technology of rehabilitation and reclamation implemented at the end of one year and during decommissioning periods. The most attractive nature of the project besides the one mention above would be the funding source totally covered by the organization*

## CHAPTER ONE

### 1. INTRODUCTION

#### 1.1 Background of the project

The Ethiopian Rocks are sub divide in to four Major groups based on age. These are: - Quaternary, Tertiary, Mesozoic and Precambrian. Ethiopian highlands are underline mainly by tertiary volcanic mostly basalt. The rift valley which divides the Ethiopian highlands into western and Eastern plateaus is underline by tertiary as well as quaternary volcanic and sediments. These include important deposits of salt, Diatomite, betonies, sand, Scoria and various rock types useful for construction. The younger volcanic, especially the quaternary volcanic are source of geothermal steam and mineral water. The highland volcanic is again subdivided into four major formations. These are from older to younger: - Assange Basalt, Aida basalt alike tuff Rhyolitic and Tarmabel Megezez Alkali basalt. The Mesozoic formations are important exploration targets for oil and gas, as well as source of raw material for the construction industry in Eastern Ethiopia. Precambrian rocks are exposed in the directional peripheries, i.e. Northern, Easter, western and south western of Ethiopia.

Ethiopia follows agricultural lead industry. Thus producing white stone has a wide variety of importance; construction, pigment or fillers, gravel, coble stone etc. The construction sectors are the main consumers of Black stone in Ethiopia. An essential factor in the economic upswing is the construction sector; in fact that also greatly benefits the country's industry. In Ethiopia the available capacities are far too small to meet the increasing demand for building.

Generally, the geological history of Ethiopia is similar to the neighbouring Afro-Arabian countries. Most of the Afro-Arabian part was above sea level from the end of Precambrian era to Palaeozoic for a span of about 370 million years that was a time of intense erosion and denudation that has resulted in pen planation of this part of the world. Later regional pyrogenic sinking of the crust between late Triassic to early Jurassic period resulted in progressive transgression of the ocean from southeast to northwest covering most part of Ethiopia. This resulted in the deposition of extensive layers of sediments.( Sethumadhavan, 2004. Sustainable Dairy Farming: an overview. Jitendar, New Delhi. India)

Upward motion of the crust commenced during late Jurassic that brought the crust to sea level followed by marine regression in late cretaceous. The uplift continued mid Tertiary where

progressive fracturing of the crust, out pouring of molten magma, and major fault displacement occurred along the present day rift valley associated with significant volcanism.

These activities were compatible for the present Ethiopian Physiographic features that can possibly be classified into the Western plateau, south eastern plateau, the main Ethiopian rift and the Afar depression. The sedimentary history of the Horn of Africa began probably between the Late Carboniferous-Ordovician and Early Triassic time with the development of the NE as well as NW trending Grabens that were filled with continental sediments. Following these Grabens marine sediments began to deposit in three main basins where in Ethiopia, the sedimentary successions crop out in three distinct areas: the Mikelle Outlier, the Blue Nile (Abbey) Basin, and the Ogden Basin. In Late Triassic –Early Jurassic time transgression of the sea advanced from the southeast and covered most of Ethiopia reaching up to the western and northern part. Towards the end of Jurassic Pyrogenic uplifting began causing withdrawal of the sea from the region by depositing regressive continental sediments.

The new conducive legal framework and efficient licensing procedures should facilitate the rapid development of the mining sector, allowing it to become an important part of the economy in due cause. As a result of effort made to date, aged numbers of major and minor companies have already indicated an interest in investing in the mining sector of Ethiopia.

Quarrying of Black stones that are basic materials for construction industries are encouraging most private investment within the country. It is very encouraging as it could consume large numbers of labour. Supporting household income of the rural people who are poor, backward and mostly vulnerable to recurrent draught and famine, such labour intensive project is encouraged by government.

Together with the above fact the constantly growing size of the construction industry at federal and regional levels is also playing the major role reinforcing employment opportunities to most of the urban unemployed work force, more than half of the population of the urban unemployed force is the rural migrants to towns for search of subsistence income sources. These parts of the community are with little skills to work in urban areas except being serving as daily labourer. They mostly become engaged in the construction investments, and that is why we appreciate the contribution of this sector of the private investment. Finally we conclude that much can be gained from stone quarry sites, especially in areas of the region where construction is currently dynamic.

## **1.2 Objective of the project**

### **General objective**

To assess and conduct feasibility study on ‘Quarry and Crusher project’ in Amhara Region north Showa zone Angollala Tera Wereda by taking account of how to increase production capacity, efficient utilization of human and other resources available in the area.

### **Specific objective**

To quarry of Black stone for construction purpose which ensures worker safety and environmental protection.

- ✓ To build an enterprise that balances quality, financial stability with Social sustainability through earning organization income.
- ✓ Improving the living standard of workers and community through Employing within organization.
- ✓ To efficient utilization of available human and natural resource in the Area.
- ✓ To satisfy the demand of Black stone in the country.

## **1.3. Statement and Justification of the Problem**

The area requested for quarry has high potential of reserved Black stone resource, accessible infrastructure, and labor intensive and suitable climate. The organization forward question of permission for exploring the remain 8000m<sup>3</sup>Blackstone mining to Amhara regional state bureau of Angola latera Woreda E/P/L/A/U/O, mining and investment Bureau, for labor based Black stone quarry to excavate and rehabilitation activity and vehicle based transportation, which led to harmony in maintaining the construction sectors and environment condition, and ultimately lead to green economy that can be profitably marketed at domestic and national market.

As a result of the owner have experience and financial potential, access of mining resource and infrastructure in the project area, if the requested land would be permitted to investment it benefit the owner, local community and the country.

Hence take in to consideration of investment policy of the country and the above point , a project would be efficient by applying activity that create harmony condition with environmental condition of the area. Even if different project feasibility studies have been conducted before in

related concern, there was a limitations and gaps in indicating the way how to increase the capacity of the production, how to efficiently utilize the available personnel's and how to implement a better production practice that can maximize the productivity of the organizations. Finally this study conducted to assess the feasibility of the 'Quarry and Crush project' in North Shewa Angolela Tara Wereda by considering the above research gaps..

#### **1.4. Scope of the Project**

The total area held for investment since starting period cover by white stone deposit is 8000Sq.mand the average thickness is about 4 m, accordingly the total estimated Black stone deposit is equal to:

Area cover by Black stone (m<sup>2</sup>)\* Average Black stone deposit thickness (m)

Black stone deposit volume = 8000 m<sup>2</sup> \* 4 m= 32000m<sup>3</sup>\*1.5m=48000m<sup>3</sup>

Note: but currently the remaining estimated black stone deposits 8000m<sup>3</sup>

Mining life can be calculated based on the total reserve of the Black stone deposit remain and the annual extraction amount of the black stone of the project. As it is noted above, the estimated remain reserve of the black stone deposit in the project area is 8000m<sup>3</sup>. On the other hand, the annual production of Black stone of the project is 4000m<sup>3</sup> (13.33 m<sup>3</sup> \*300day=4000m<sup>3</sup>)

Therefore, the mine life of the deposit of the black stone is calculated as below:

The total mineable black stone deposit of the application area is 5333.33m<sup>3</sup> \*1.5 =8000m<sup>3</sup>

Annual production of the project is 13.33 m<sup>3</sup> \*300day=4000m<sup>3</sup>

Total Mineable Resource/ Annual production

Mining Life =48000 /12000m<sup>3</sup> =4 years

Therefore the remaining Mining Life equals to 4 years

Since the objective of the project would be black stone quarry; the following activates would be practiced:-

Get permission for business proposal; prepare the land for use capability and quarrying development site plan.

Construct office and temporally shelters on site.

- Procure and mobilize the necessary tools, equipment and materials.
- Early out market studies and sign contractual agreement with consumers and contractual industries.
- Clearing and removal of overburden (Stripping)
- Fragmentation of limestone
- Excavation, loading and hauling of fragmented limestone to the plant.
- Prepare and implement environmental impact and mitigation measures.

### **1.5. Limitation of the project**

Inconsistency of input cost (fluctuation of price for some input/ raw materials).And the project gives less emphasis to problem issues related to noise, erosion and other environmental problems in the area of operations.

## CHAPTER TWO

### 2. PROJECT CONCEPT

#### 2.1 Opportunity study

Even though, investments face same problems, there are opportunity, in which encourage investors and contribute to high production. Some of the most viable opportunity of Black stone quarry project would be:

- Availability of adequate land in the project area.
- Suitable agro-climatic condition to shoot objective of the project.
- The wide gap between demand and supply of project products;
- Availability of infrastructure near the project area; like water supply, power, phone.
- Availability of labours; technical assistant, professional and non-professional person.
- Possibility of getting input collector in the direction of company;
- Growing population of the country in general and urban population in particular.
- Government focus for the construction sector.

#### 2.2. The project Concept and Profile

##### Location

Black Stone Query and Crusher Project area is located in Amhara National Regional State, North Shao Zone, AngolellaTera Woreda,Serite Keble, specific name Meshege around100 km away from capital city of Ethiopia on the way to Dessie, which cover (8,000m<sup>2</sup>)of certified land for establishing commercial Black Stone Quarry and Crusher Project. The area has an elevation of about 2779 m.a.s.l, which is suitable for Black Stone Quarry and Crusher Project.

##### Climate

The climatic condition of the area based on eco-climatic classification termed as Dega (temperate). The area demarcated under such region are characterized by three seasons and locally known as Bega (October to January), Belg (February to May) and Kermit (June to September). In general the climate is favorable for a dairy, beef, vegetable and forage production (ITAB-Consultancy, 2012).

## **Temperature**

The average annual max and min temperature of the area is range between 15 0 to 22 0 c. Night frost occurs frequently from October to January.

## **Rainfall**

The rainfall pattern in this region has two distinct peaks during a year. Short rain occurs from February to May and long rain from June to September. The average annual rainfall is 1150 mm, 70% falling in long rain periods (Gryssels and Anderson, 1983).

## **Topography**

The overall topography is almost plateau associated with undulation and valley bottoms and seasonal rivers. The soil type is dominated by vertisol (black soil) with nitosol (red soil) on rolling and undulating land features as well as hills and mountain side slopes, having some organic matter. These soils are known to be generally low in available nitrogen and phosphorous as evidenced by their responses to several fertilizer experiments. Holeta Research Centre generally recommends 60kg nitrogen and 16 kg phosphorous per hectares for cereals crops. Higher fertilizer rate that is 90kg nitrogen and 40kg phosphorous are generally recommended for vegetables (ITAB-Consultancy, 2012).

## **Land use/ land cover**

Generally in the Woreda land use familiars includes short cycle crop production (wheat, pulse, barely), artificial plantation dominated by Eucalyptus species, grass land. The specific area given to the investor more of stony, which is less effective for production of cereal than mining production. Previously, the area was partly used as crop production and grazing land.

## **Infrastructure**

The project would be direct beneficiary of some infrastructure such as telephone, clean drinking water, hydropower, elementary and high school public services, road, and health center.

## **Water resource**

The area is rich with ground water potential that helps as alternative for clean drinking water access. There are also many seasonal rivers that flash flood during rainy seasons.



## **Investment potential**

Generally, the zone and particularly the Woreda have high potential compare with the surrounding. In the near future and with some management action, the potential for integrate production system of animal, crop, floriculture and forest tree species would be significant. The area also has good potential for Query and crusher products, agro-processing, high land fruits, vegetables, and different institution, which create symbiotic relation of environment- human- development.

## **Flora and Fauna**

Currently, the specific area was the project implemented cover by dominantly by grass and scattered exotic species that contribute good value to maintain local ecological system such as: Eucalyptus camandolesous, Graviliarobosta, 'etc. The types of wild animals exist in the surrounding area as information from the local community indicates: Hyena, Monkey, local fox, Rabbits etc...

## **Land use/ land cover**

The planned exploring area account (8000). The specific area given to the investor more of stony, which is less effective for production of cereal than mining production. Previously, the area was served as grazing and farm. Currently, the area is protected for investment.

## **Local Geology**

The area is located on the upper basin of Abay and the geology of the area dominated by interlayer rhyolite, basalts and some ignimbrites.

The rhyolite has light grey and grayish white fresh and weathering colors. The project sites are characterized by flat topped hills comprised of rhyolite.

## **Socio-economic condition of project area**

As data taken from concerned office of Agriculture and rural development, town municipal and EPLAUO indicate that livelihood of population in the Woreda, specifically in the surround of project area is Agriculture in a type of mixed farming of crop production and livestock production with participating as employ in mining activity and low other potential investment sectors. The

education, health and portable water access still not well enough satisfy. The part of mining activity carry in the project area also means of income for majorities of unprofessional farmer with their family. Unemployment increase nearby town for long periods, conflict with other ethnic low, very low level of resource based industrial development; traditional production system, less efficiently performed investor, unsystematic cultivation of farm land and mountainous area for long periods and invasion of transmitted disease (HIV/AIDS) were among the main Socio- economic constraint of the people of the Woreda.

## **Population Growth and Demography**

### **Population and settlement**

The current population of Amhara region, NSZ estimated 3,500,000. In Angolala Tera Woreda estimated to 142888, of which 72383 are male and 70505 female (source, 2008 national static's report). The project area exists at the boarder of Amhara region, which led a population to share culture, technology. Currently, the population has settled in mountainous part of the area, just in front of the project.

### **Economic / poverty situation**

The current policy of the country commonly implemented throughout the nation have been focus mainly on mainstreaming gender in every sectors, reducing unemployment number and addressing environmental issued resulting from its much relation/ contribution to economic development their by reducing poverty. The north Showa `zone and Angolala Tera Woreda also implement the policy considering the existing condition.

Even-though, up-to-date traditional low productive agriculture had been a backbone of local population, which increases the number of unemployment and food insecurity in the project area. Onward there would be a promising point as investment highly encourages and come to reality from day to day that opens job opportunity to local community. In addition to this empowering both sex for any position without discrimination that show progress periodically contribute great for poverty reduction in the Keble, Woreda, Zone and region.

## **Public health condition**

The health condition of the area evaluated from infrastructure like clinic, health center and hospital, portable water delivery and other essential for human health accessibility. The motto of keep from carrier and passing of anyone person by HIV/ADIS indicate that even though the health condition from zonal to Keble level decline, better than previous period. In the area the mortality rate decrease resulting in decrease of death during birth, controlling of sever disease like yellow fever, TB, and reducing of HIV/AIDS transmission. Other infrastructure like access of school, access of clean portable water, sanitation and hygienic condition were great in the area that contribute and support the health condition than under grass root one. Generally the health conditions are better than previous and develop as other part of the country.

## **Animal Disease/Health Conditions**

In north Shoa zone until 2013, 492 projects were received investment permission and most of them start putting it on ground. From 492, 148 engaged in Agriculture (NSZ Industry and Urban development). Hence, to make the investor beneficiary the government bodies make accusable the data for different sector. The prevalent animal disease associated with dairy farm, cattle fattening, sheep fattening, poultry farming and apiculture farming in AngolalaTera Woreda were express as follow.

The more prevalent in the Woreda includes Black leg, Mastitis and hypocalcemia (deficiency of Calcium). The prevalent disease associate with cattle fattening includes; black leg, internal parasite (liver fluck, nematodes), ectoparasite (tick), and Bovina pasturellosis. The prevalent disease associated with sheep fattening includes; sheep pox, Ovine pasturellosis, intra-parasite (lung warm, liver flucks), ecto-parasite (sheep ked), foot rot, Keratoconjactivity.

The prevalent disease associated with poultry farming includes; New Castle disease, Fowl Cholera, Gumboroo disease (young impressing), Fowl pox, Coccidiosis, and Red Mites. For apiculture farming in the area/ Woreda there is no well-known disease rather some insect like wave, Spider, which interfere their activity and leading to decrease production. For more detail see annex 3 expressing livestock disease in North Shoa Zone.

## **Culture and religion**

In the area Orthodox Christianity is the dominate religion, almost greater than 98 % followers while the rest less than 2% comprise Muslims and other. The associated cultures are dominated by Amhara nationality, which is highly related and dominated by religion. The inherent religious believes that omit the week end and religious day have great impact on working culture, even though within the last decade some change were visible. The culture also imposes great damage to natural resource. Hence the area need great advocacy to ward changing culture and religious condition responsible person would be participate.

## **Investment potential**

Generally, the zone and particularly the Woreda have high potential compare with the surrounding. In the near future and with some management action, the potential for integrate production system of livestock and livestock products, Black Stone Quarry and Crusher Project, crop, floriculture and forest tree species would be significant. The area also has good potential for agro-processing, high land fruits, vegetables, and different institution, which create symbiotic relation of environment- human- development.

## **Biodiversity in the area**

In the area biodiversity availability has less both in terms of flora and fauna types. The dominate plant species in the area were grass and Eucalyptus species besides mentioned food crops. Some of the most common domestic animal in the area where Cow, Ox, sheep, Donkey, Dog and few Horse, Goat. The wild animal in the surrounding area includes Hyena, Fox, Monkey, Rabbits and common bird species.

## **Noise**

Currently, in the area different types of industry and agro- processing organization were requesting and receiving the land but not yet start construction and production it make present condition calm, except during transportation as it is in road side.

## **Present states of the land**

The area requested by Black stone query and crusher project is previously use for grazing and farm purpose.

Currently, by revising the proposal presented by Black stone query and crusher project. the AngolellaTera Woreda and NSZ BoEPLAU joint with Zonal investment office decide to give 8000m<sup>2</sup> of land set to investment, as it deserve the criteria of proposal to be on ground like job opportunity to local community, capacity of improving trade systems, advertizing the investment potential of the Woreda. In a way of deciding to give the area for project, the responsible organization set some restriction like follow sustainable green economy production system and show better improvement on current situation of the area and would implement based on objective listed on proposal.

## **2.3. Preliminary study**

### **Market information**

#### **Demand and Supply Projection**

The construction sectors that need output of the project blooming rapidly, hence currently the demand is greater than supply in the Woreda and in the country...

### **Benefits and Beneficiaries**

#### **Economic benefits**

The project would create employment opportunities to 10 permanent staffs and 47 numbers of casual labours. With this opportunity it reduces the increasing number of rural – urban migration with the greater benefits re – enforcing the construction industry’s demand of material supply. It would be strengthen the traditional and artesian mine development efforts of the region enabling the increase in rural household income from the skill acquired on stone chiselling and quarrying capabilities.

#### **Social benefits**

The project has a direct support to the strategy of the government. As the peasants led their life by practicing rain fed farming, local community would be benefited through engaging on the project to increase individual household income.

### **Beneficiaries**

Black Stone quarry projects are labor intensive and the major beneficiaries being casual laborers. An activity such as quarrying stones, Transporting and refilling of excavated land with soil to protect the area from land degradation it needs intensive labours. Therefore it is estimated that on average, the project would target 10 permanent and 47 temporary a number of employ beneficiaries. In addition to above consumers of the construction materials, these who construct their house and constrictors would also be the beneficiary of the envisaged project.

## **CHAPTER THREE**

### **3 PROJECT METHOD AND PROCEDURE**

#### **3.1. Project Approach**

A quantitative approach using survey questionnaires to capture the project on requesting land that has mining potential of black stone quarry on Semen Shoa Zone, Angolala Tera Woreda, Seriate Keble, specific name Meshege it seemed to be the obvious approach. In order to validate the findings obtained from the survey questionnaires in the quantitative approach, a qualitative approach was used in this project. Therefore, both quantitative and qualitative research approaches (mixed approach) were used to address the project objectives.

#### **3.2. Project Design**

To address the project objectives, the researcher used descriptive research method. In this type of project design the researcher used a quantitative approach to describe, analyze and interpret conditions in their current situation. In addition to that, it used qualitative approach simply to describe existing conditions in the project area. Therefore, the design enabled the study to describe the potential of the black stone quarry production in the area.

#### **3.3. Data Sources and Types**

To increase credibility, the study used both primary and secondary data with qualitative and quantitative types. Primary data from interview with management team in that area, secondary data were obtained from different annual reports and brochures.

#### **3.4. Data collection Techniques**

To increase reliability of the project the required data were collected through interview from residents other family at work and management team in that area. Therefore, as data gathering tools personal interview questions were used for primary data while the secondary data were collected from the secondary data sources and then such data were reviewed and analysed accordingly.

As data collection procedure, it was begun with secondary data review through the detailed review of related report.

### 3.5. Method of Data analysis Techniques

Once data were collected using the above method of data collection, data processing were made. Then after data had been analyzed, the findings were used to draw necessary conclusion and recommendations. In short, the responses to interview questions were analyzed by using descriptive data analysis techniques consisting of tabular presentation in order to summarize the findings.

### 3.6 Population of the study

The population of this study was consists the residents of the area and management team and other family at work. Because they have more information about project, and believed to be better sources of information for the study, for this reasons, management team of the area would be taken as a target population for the study.

### 3.7 Time schedule

No	Activities	Period				
		Nov	Nov	Dec	Dec	Dec
1	Submission of the project proposal	x				
2	Data collection		X			
3	Data editing and coding			x		
4	Data analysis and summary of findings			x		
5	Conclusion ad recommendation				x	
6	Presentation of the first draft of report					x
7	Preparation of the final report					X
8	Compiling and submission of project report					X

Table 1 time schedule



### 3.8 Resource budget

No	Required resource	Unit	Quantity	Unit price	Total price
1	Transportation cost	No. of trip	6	200	1200
2	Mobile card	Piece	10	50	500
3	Pen	5	5	20	100
4	Paper	1desta	1	415	415
Total Cost	$1200+500+100+415=2215$ Birr				

Table 2 cost budget

### 3.9 Limitation Of The project

In this study the project has some problems. One challenge the study area was not safe in amhara region; shortage of time and other resources; and some challenges due to unwillingness of respondent in providing of the required information for the study of this project.

## **CHAPTER FOUR**

### **PROJECT PREPARATION**

#### **4.1 Markets and Demand Analysis**

The construction sectors that need output of the project blooming rapidly, hence currently the demand is greater than supply in the Woreda and in the country as a whole. Therefore; starting the production operation in the area is feasible and have higher market share and profit.

#### **4.2 Raw Materials and Supplies Study**

Applicability of a given project was evaluated by accessibility of the biophysical component of area for implementing project activity, availability of essential raw material to undergo the project, acceptance by local community, demand to product of project, access to bank loan would be very important variable to determine applicability and sustainability of a given project. Hence, the project has access to the above constraints even to access of full investment cost, its applicability and sustainability would be tangible.

#### **4.3 Technology Selection**

The introduction of new technology that helps to soil and water conservation implemented during decommissioning periods, way of excavation and ergonomics. This project plans to introduce several technologies to the community around the area and investors in the surrounding besides the above mention, like water harvesting technology.

#### **4.4. Organizational and Human Resource**

The organization setup of the quarry production has a general manager, with 9 permanent employees, and 47 non-professional temporary workers.

The project intends to create job opportunity for a number of professional and non-professional from local and nationwide. Estimated employment within the project at starting period would be an average of 10 permanent and 47 temporary employees from local and nationwide.

#### **4.5 Social Analysis**

The project site has shallow depth with low crop production and high stone deposit under sub-soil, which is not usable by the rural community for crop/forest production. As the site being at the bottom of hill and some distance to dry river, decommissioning activity late to set of rainy season may cause loss of soil from quarry site and lack of safety dress also cause damage to employ.

Before the quarry pit led to water Logging and becomes serious situation and delicate site for inoculation or multiplication of insects which causes water borne diseases, need to make activity like filling and levelling before rain season.

## **4.6 Economic Analysis**

### **4.6.1 Project stakeholder**

Identification of Stakeholders: Stakeholders would be meticulously identified, encompassing individuals, organizations, and entities directly or indirectly affected by the establishment of the genuine black stone quarry and crusher facility. This include investors, employees, suppliers, regulatory bodies, and the local community.

Stakeholder Involvement: Strategies for effective communication and involvement of stakeholders in key decision-making processes would be devised. Maintaining transparent and open channels of communication would be prioritized to foster positive relationships.

### **4.6.2 Project beneficiaries identification**

Direct Beneficiaries: Individuals and entities directly benefiting from the project, such as employees, and investors, would be identified. A comprehensive understanding of their specific benefits would be outlined.

Indirect Beneficiaries: Beyond direct beneficiaries, the ripple effects of the project on the broader community and economy would be analyzed. This includes job creation, economic stimulation, and skill development opportunities.

### **4.6.3 Project social cost analysis**

Cost Identification: A detailed analysis of social costs associated with the project have been conducted. This involves identifying potential negative impacts on the local community, environment, and cultural heritage.

Mitigation Strategies: Strategies to mitigate identified social costs would be developed. These may include community development initiatives, environmental conservation measures, and culturally sensitive practices.

#### **4.6.4 Project social benefit analysis**

Benefit Assessment: The positive impacts of the project on the social fabric of the community would be assessed. This includes job opportunities, skill development, and contributions to local economic growth.

Social Impact Measurement: Methods for quantifying and qualifying the social benefits would be employed. This may involve surveys, interviews, and other data collection methods to measure changes in the quality of life and well-being of the local population.

By conducting a comprehensive economic analysis that extends beyond financial considerations, we aim to ensure the genuine black stone quarry and crusher not only contributes to economic growth but also enhances the social well-being of the community and stakeholders involved.

#### **4.7 Financial Analysis**

The mine generates its revenue from the sales of Blackstone. The Main cost Expenditure items are categorized and presented as Preproduction cost, Fixed Capital cost, and Operating costs and all financial statements as follow:

##### **4.7.1 Initial investment cost**

The budget that required to start the production operation including the acquisitions of machinery and the startup salary of the manager and employees is estimated to be 3,384,400.00 ETB.

Table 1 .Human Resource Requirement

No	Particulars	Quantity	salary per month	Annual Salary per Employee		
1	Project manager	1	15000	180,000.00		
2	secretary	1	3000	36000		
3	Forman	1	4000	48000		
4	Supervisors	1	6500	78000		
	Driver	1	8000	96,000		
5	Accountant	1	5000	60000		
6	Cashier	1	4000	48000		
7	crasher operator	1	5000	60000		
8	Guard	2	4000	48000		
13	Daily workers	47	122200	1466400		
	Total		176700	2,120,400.00		

Table.2 List of capital costs

1	Resource		Quantity	Unit price	Total Cost
2	Crushers		1	1,250,000.00	1,250,000.00
3	Damp truck		1	1,600,000.00	1,600,000.00
4	Chisel		20	120	2400
5	Crow bar		14	250	3500
6	sledge hammer(10&5)		25	280	7000
7	pick axe		10	230	2300
8	barilla		50	190	9500
9	site shelter		2	5,000.00	10,000.00
10	shovel		40	160	6400
11	Office equipment and furniture				240,000.00
	civil work				253,300.00
	Grand Total				3,384,400.00

Table 3. Estimated Preproduction cost

No	Items		Total cost (birr)	Column1
1	License fee	5000	5000	
2	Document preparation and consultancy fee	22000	22000	
	Total		27000	

#### 4.7.2 Production costs/Operational Costs

##### Production Plan and Project Costs

##### Planned Productions

The following table summarizes the Planned Production of Basalt quarry and crusher

Table 4. Planned production of Basalt quarry and crusher

Product items	Production per Year (275 days/year)	Column1	Column2	Column3	Column4	Column5
Fine type	0	1	2	3	4	5
0		2,400	2,400	2,400	2,400	2,400
1		2,400	2,400	2,400	2,400	2,400
2		2,400	2,400	2,400	2,400	2,400
3		2,400	2,400	2,400	2,400	2,400
Total		9,600	9,600	9,600	9,600	9,600

Table 5. Estimated Raw Material Cost

Column1	Column2	Column3	Column4	Column5	Column6	Column7
Raw Material Items	Raw material cost per year					
	0	1	2	3	4	5
Direct material(tons )		9600	9600	9600	9600	9600
Unit Cost(per ton)		150	150	150	150	150
Total Cost		1440000	1440000	1440000	1440000	1440000

Table 6: Operating cost Estimating

Description	Operating years of the project	Column1	Column2	Column3	Column4
	1	2	3	4	5
A. Direct cost					
Raw Material Cost	1440000	1440000	1440000	1440000	1440000
Sub-total	1440000	1440000	1440000	1440000	1440000
Total Direct cost	1440000	1440000	1440000	1440000	1440000
B. Indirect cost					
Wages and Salary	2120400	2,120,400	2,120,400	2,120,400	2,120,400
Repair and Maintenance	72,595.10	72,595.10	72,595.10	72,595.10	72,595.10
Property Insurance	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00
Fuel Oil and Lubricant	256,000.00	256,000.00	256,000.00	256,000.00	256,000.00
Utilities	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00
Office rent	86,000.00	86,000.00	86,000.00	86,000.00	86,000.00
Environmental measures cost	34,000.00	34,000.00	34,000.00	34,000.00	34,000.00
Total Indirect cost	2672995.1	2672995.1	2672995.1	2672995.1	2672995.1
Total direct and indirect cost	4112995.1	4112995.1	4112995.1	4112995.1	4112995.1
Contingency (5%)	205649.755	205649.755	205649.755	205649.76	205649.76
Total Operating cost	4318644.855	4318644.86	4318644.855	4318644.9	4318644.9

Table 7. Projected Revenue

Product items	Estimated Revenue per Year (in birr)					
	0	1	2	3	4	5
Fine type		2400	2400	2400	2400	2400
price		600	600	600	600	600
1		2400	2400	2400	2400	2400
Price		610	610	610	610	610
2		2400	2400	2400	2400	2400
Price		620	620	620	620	620
3		2400	2400	2400	2400	2400
Price		630	630	630	630	630
Total Revenue		5880000	5880000	5880000	5880000	5880000

Table 8. Forecasted Profit and Loss

Description	Operating years of the project				
	1	2	3	4	5
Sales Revenue	5880000	5880000	5880000	5880000	5880000
Royalty (3%)	176400	176400	176400	176400	176400
Net sales	5703600	5703600	5703600	5703600	5703600
Less: Operating cost					
Direct material cost	1440000	1440000	1440000	1440000	1440000
Indirect cost					
Wage and salary	2,120,400	2,120,400	2,120,400	2,120,400	2,120,400
Utilities	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00
Office rent	86,000.00	86,000.00	86,000.00	86,000.00	86,000.00
Fuels, Oil and Lubricants	256,000.00	256,000.00	256,000.00	256,000.00	256,000.00
Maintenance	72,595.10	72595.1	72595.1	72595.1	72595.1
Environmental measures	34,000.00	34,000.00	34,000.00	34,000.00	34,000.00
Insurance	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00
Sub total	4112995.1	4112995.1	4112995.1	4112995.1	4112995.1
Contingency (5%)	205649.755	205649.755	205649.755	205649.76	205649.76
Total operating costs	4318644.85	4318644.85	4318644.85	4318644.9	4318644.9



Income before Depreciation	1384955.15	1384955.15	1384955.15	1384955.2	1384955.2
Less: Depreciation	676880	676880	676880	676880	676880
Profit after Depreciation	708075.15	708075.15	708075.15	708075.15	708075.15
Less: Tax (35%)	247826.3	247826.3	247826.3	247826.3	247826.3
Net Profit or Loss After Tax	460248.85	460248.85	460248.85	460248.85	460248.85

#### 4.7.3 Projection cash flow

Table 9. Cash Flow Statement						
Description	Project Life years					
	0	1	2	3	4	5
Inflows						
w Own Equity	5,000,000					
w Long-term Loan	0					
w Sales revenue		5,703,600	5,703,600	5,703,600	5,703,600	5,703,600
Total inflow	5,000,000	5,703,600	5,703,600	5,703,600	5,703,600	5,703,600
Out flows						
Investing cost		3,384,400.00				
• Operating cost		4318644.85	4318644.85	4318644.85	4318644.85	4318644.85
Income tax		247826.3	247826.3	247826.3	247826.3	247826.3
preproduction cost	27000					
Total Outflows	27000	7950871.15	4566471.15	4566471.15	4566471.15	4566471.15
Net Cash Flow	4,973,000	-2247271.15	1137128.85	1137128.85	1137128.85	1137128.85

Beginning Cash Balance	0	5000000	2752728.9	3889857.7	5026986.6	6164115.4
Ending Cash Balance	5000000	2752728.85	3889857.7	5026986.6	6164115.4	7301244.3

Table 10. Balance Sheet Statement

Description	Project Years	1	2	3	4	5
Current assets						
Cash	5000000	2752728.85	3889857.7	5026986.6	6164115.4	7301244.3
Inventory						
Total current assets	5000000	2752728.85	3889857.7	5026986.6	6164115.4	7301244.3
Plant asset						
Total plant asset		2707520	2030640	1353760	676880	0
Total assets	5000000	5460248.85	5920497.7	6380746.6	6840995.4	7301244.3
Liabilities						
Capital						
Beginning Capital	4973000	5000000	5460248.85	5920497.7	6380746.6	6840995.4
Retain earning		460248.85	460248.85	460248.85	460248.85	460248.85
Preproduction cost	27000					
Total capital	5000000	5460248.85	5920497.7	6380746.6	6840995.4	7301244.3
Total liability and capital	5000000	5460248.85	5920497.7	6380746.6	6840995.4	7301244.3

#### **4.7.4 Financial Evaluation**

##### **4.7.4 .1 Payback Period (PBP)**

The Payback Period is the time it takes for the initial investment to be recovered from the project's net cash inflows.

Calculation:

$$\text{Payback Period} = (\text{Initial Investment}) / (\text{Average Net Cash flow per year})$$

$$3384400 / 1137128.85 = 2.98$$

The Payback Period (PBP) is calculated to be approximately 2.98 years. This means that it would take approximately 2.98 years to recover the initial investment from the net cash inflows generated by the project.

##### **4.7.4.2 Accounting Rate of Return (ARR)**

The Accounting Rate of Return measures the profitability of the project as a percentage of the average accounting profit.

Calculation:

$$\text{ARR} = ((\text{Average Annual Accounting Profit}) / (\text{Average Investment})) * 100$$

The Average Accounting Profit is calculated as the average net cash inflow over the years, and the Average Investment is half of the initial investment. Let's calculate the ARR.

The Accounting Rate of Return (ARR) is calculated to be approximately 42%. This means that, on average, the project is expected to generate a return of 42% on the average investment.

##### **4.7.4.3 Net Present Value (NPV)**

The Net Present Value represents the present value of the project's cash inflows and outflows.

Calculation:

$$NPV = \sum_{t=1}^T \left[ \frac{\text{Cash flow at time } t}{(1 + \text{Discount rate})^t} \right] - \text{Initial Investment}$$

Where:

CF<sub>t</sub> is the net cash flow at time

r is the discount rate

T is the number of time periods

In this case, the provided data includes the initial investment cost, monthly operational costs, and cash flow projections over five years.

Let's use the following information for the calculation:

Initial Investment Cost: 3,384,400 ETB

Net Cash Flow (Year 1-5): 1137128.85 ETB

Average Net Cash Flow (Year 1-5): 1137128.85 ETB

Discount Rate: Let's assume a discount rate of 10%

Now, let's calculate NPV in detail.

Present Value (PV) of Year 1:  $1137128.85 / (1+0.1)^1 = 1033753.5$  ETB

Present Value (PV) of Year 2:  $1137128.85 / (1+0.1)^2 = 939775.91$  ETB

Present Value (PV) of Year 3:  $1137128.85 / (1+0.1)^3 = 854341.74$  ETB

Present Value (PV) of Year 4:  $1137128.85 / (1+0.1)^4 = 776674.31$  ETB

Present Value (PV) of Year 5:  $1137128.85 / (1+0.1)^5 = 706071.93$  ETB

Calculate NPV:

NPV = PV of year 1 + PV of year 2 + PV of year 3 + PV of year 4 + PV of year 5 – Investment cost

$$\text{NPV} = 1033753.5 \text{ ETB} + 939775.91 \text{ ETB} + 854341.74 \text{ ETB} + 776674.31 \text{ ETB} + 706071.93 \text{ ETB} - 3384400 \text{ ETB}$$

$$\text{NPV} = 926217.39 \text{ ETB}$$

Decision role: - since the difference between the initial investments cost against the sum of discounted future cash flow is positive it is feasible and accept the project.

#### 4.7.4.4 Internal Rate of Return (IRR)

The Internal Rate of Return is the discount rate that makes the Net Present Value zero.

Calculation:

$$\text{NPV} = \sum \left[ \left( \frac{\text{Cash flow at time } t}{(1 + \text{IRR})^t} \right) - \text{Initial Investment} \right]$$

The Internal Rate of Return (IRR) is the discount rate that makes the Net Present Value (NPV) of the project zero. It is essentially the interest rate at which the project breaks even. The IRR is found by solving the NPV equation for the discount rate.

Given that we have calculated the NPV, we can now proceed to find the IRR. The NPV equation is as follows:

$$\text{NPV} = \sum \left[ \left( \frac{\text{Cash flow at time } t}{(1 + \text{IRR})^t} \right) - \text{Initial Investment} \right]$$

Where:

NPV is the Net Present Value

CF<sub>t</sub> is the net cash inflow during the period t

IRR is the Internal Rate of Return

t is the time period

Let's solve for IRR using the calculated NPV and the cash flows for each period.

Given the calculated NPV of approximately 926217.39 ETB and the cash flows for each period, we need to find the IRR by solving this equation. Unfortunately, solving this equation requires an iterative approach, and the IRR is the discount rate that makes the NPV zero.

$$0 = (1137128.85 + 3384400) / (1 + R) - 3384400$$

$$\text{IRR}=0.335=33.5\%$$

After performing the calculation, the Internal Rate of Return (IRR) is approximately 33.5%. This means that the project's IRR is 33.5%, indicating the rate at which the project breaks even. If the discount rate is below 33.5%, the project is considered financially viable.

#### **4.7.4.5 Benefit-cost ratio (BCR)**

Now, let's calculate the Benefit-Cost Ratio (BCR). The BCR is the ratio of the present value of benefits to the present value of costs. The formula for BCR is given by:

$$\text{BCR} = (\text{Present value of Benefits})/\text{Present Value of Costs}$$

In this case, the present value of benefits is represented by the Present Value (PV) before deducting of the initial investment cost of the project, and the present value of costs is the initial investment. Let's calculate the BCR.

The Benefit-Cost Ratio (BCR) is calculated to be approximately 1.3 This indicates that for every 1 ETB invested in the project, there is a return of 1.3ETB in present value of benefits. A BCR greater than 1 is generally considered acceptable, as it suggests that the project is expected to generate positive return

#### **4.7.4.6 Break-Even Analysis (BEA)**

*The Break-Even Analysis determines the level of sales needed to cover both fixed and variable costs.*

##### *Calculation*

$$\text{BEA} = \left( \frac{\text{Fixed cost}}{\text{selling price per unit} - \text{Variable cost per unit}} \right)$$

$$\text{Fixed cost} = 2672995.1$$

$$\text{Selling price per unit} = 612.5$$

$$\text{Variable cost per unit} = 150$$

$$\text{BEA} = \frac{2672995.1}{612.5 - 150} = 5779 \text{ UNITS}$$

Therefore, the Break-Even Point is approximately 5779 units.

This means that the business needs to sell approximately 5779 units to cover its total fixed costs and variable costs and reach the break-even point. the business would need to sell at least 5779 units to cover its costs and start making a profit.

## **CHAPTER FIVE**

### **5. CONCLUSION & SUMMARY**

#### **5.1 Summary**

The Black Stone Quarry and Crusher project involves the extraction and processing of stone materials for various construction purposes. It typically includes activities such as drilling, blasting, crushing, screening, and transportation of the materials. The project aims to provide construction materials for infrastructure development and other construction projects. This quarry and crusher project plays a crucial role in supplying essential construction materials to meet the demands of the construction industry in the region.

The Black Stone Quarry and Crusher project is a comprehensive plan to extract stone resources from the surrounding hills and mountains and then crush and process the raw materials to create building and construction materials.

The project aims to meet the increasing demand for construction materials in the region by providing high-quality and affordable products. It also aims to create employment opportunities for the local community and contribute to the economic development of the area.

The project would adhere to strict environmental and safety standards to ensure minimal impact on the surrounding ecosystem and the health of workers. Measures such as dust control systems, water management practices, and noise reduction strategies would be implemented to mitigate any potential negative effects.



## **5.2 Conclusion:**

Based on the information and analysis presented, it can be concluded that the black stone quarry has significant potential for profitability and growth. The demand for black stone in various industries, such as construction and landscaping, is expected to remain high in the foreseeable future. Additionally, the quarry's location and the quality of its black stone make it a desirable supplier in the market.

The financial analysis yielded positive results, indicating a Payback Period (PBP) of 2.98 years, an Accounting Rate of Return (ARR) of 42%, a Net Present Value (NPV) of 926,217.39 ETB, and an Internal Rate of Return (IRR) 33.5%. While the Benefit-Cost Ratio (BCR) of 1.3, the business needs to sell approximately 5779 units to cover its total fixed costs and variable costs and reach the break-even point suggested a financially sound investment

## **5.3 Recommendation**

Considering the promising outlook for the black stone quarry, it is recommended to invest in the expansion and optimization of operations. This can include

- ✓ Increasing the extraction capacity, through efficient utilization of the available human resources in the area.
- ✓ Improving the efficiency of the production process through the wise use of the available inputs and natural resources available in the here surrounding of the organizations.
- ✓ Implementing sustainable mining practices by implementing different working practices and by adopting new technologies that can insure the better operations and productivity of the organizations. Additionally, developing relationships with potential customers, such as construction companies and architectural firms, through marketing and networking efforts should be prioritized. Furthermore, investing in technology and equipment upgrades can enhance productivity and reduce operational costs in the long run. This can involve the use of advanced machinery for extraction and processing, as well as implementing digital technologies for inventory management and quality control.

## **Reference**

- *EPA, 2003.ENVIRONMENTAL IMPACT ASSESSMENT PROCEDURAL GUIDELINE Series 1.*
- *Gryssels, G.E and Anderson,F.M. 1983. Research on Farm and Livestock Productivity in the Central Ethiopian Highland. Initial results, research report No.4 ILCA, Addis Ababa.*
- *Sethumadhavan, 2004. Sustainable Dairy Farming: an overview. Jitendar, New Delhi. India.*
- *North shoa zone manning department annual and five year report*
- *ITAB-Consultancy, 2012*
- *Ethiopian national static's report ,2008*
- *Heather N.Dougherty ,Andrew P.Schissler 2020*
- *Keith A.Allman 2007*
- *Prof.Dr.G.M.Dumbre 2015*
- *Colin Barrow 2023*
- *Bloomsbury publishing 2013*
- *Stephen L.nelson 2005*

**AMERICAN COLLEGE OF TECHNOLOGY**

**DEPARTMENT OF BUSINESS STUDIES**

**MASTER OF BUSINESS ADMINISTRATION PROGRAM**

**Interview Questions**

Dear respondent:

I want to sincerely thank you in advance for your time in discussing the following matters. This interview is being conducted in order to prepare a research project for the Masters of Business Administration program. “Feasibility Study for Establishing black stone quarry and crusher project in north Shewa Angolella Tara.” You may be sure that your private data would be protected and used exclusively for legitimate academic research. Thus, we respectfully ask that you respond honestly.

Thank you in advance for giving short and precise response for the following questions.

Interview questions

1. What your plan is in related to building of enterprise in a way that balances the quality of the products?
2. What do you do in regarding to insure the financial sustainability with social sustainability through earning organizational income?
3. How do you improve the living standard of your employees and workers in your organization?
4. How your organization move along with the communities through employing them in the organizations and by considering the side effect of the project to the society?
5. Does your organization efficiently utilizes of the available human resources in the area?
6. How your organization uses the inputs and the natural resource available in the surrounding of the company?
7. Can you tell us the strategies and practices that your organization employees to ensure the efficient utilizations of available human resources?

8. How do you identify the skills and the capabilities of your employees to match them with appropriate roles and responsibilities?
9. How do you insure the balanced work load distribution in your organization through considering the individual strengths and limitations?
10. Do you believe that your organization can satisfy the demand of black stone in the surrounding cities and in the country as a whole?