

Chapter 5

Analysis of Alternatives



CHAPTER - 5

ANALYSIS OF ALTERNATIVES

5.0 PREAMBLE

Alternatives considered for the proposed project are evaluated and discussed with particular emphasis on environmental considerations.

The project alternatives discussed here include the rationale for the proposed project siting, raw materials availability and transportation and production technology, etc. Prior to arriving at a decision regarding establishment of a greenfield cement plant at Derba, the following options were considered:

- No project option
- Establishment of a new cement plant close to the quarry for production of cement.

5.1 NO PROJECT OPTION

The 'No project option' implies that cement production will not occur at the project site and the site would continue to remain abandoned. No socio-economic benefits would accrue to the nearby communities and the government.

A development activity in an area inevitably involves its alteration from the environmental point of view. However, to manage this alteration, an analysis of the project must also consider all the socio-economic elements in question in addition to ensuring the maximum protection of environment by use of latest, state-of-the-art technologies.

Failure to implement the proposed project would involve the following:

- Failure to rationalize the use of natural resources available in the project area which can be used to manufacture cement
- Loss of opportunity to increase revenue capacity at local, Regional and Federal levels
- Loss of opportunity to create direct employment for hundreds of Ethiopians and indirect employment to several other hundreds more through multiplier effect in terms of downstream socio-economic benefits and consequent improvement in the living conditions of local population in the project area.

Therefore, choosing the "No project option" will mean a loss of preliminary investments on the project and there would be no benefit to the nation. No new employment opportunities would be created. Nonetheless there will be no alteration of the environment apart from nature induced changes that would invariably have no significant impact.

5.2 ESTABLISHMENT OF GREENFIELD CEMENT PLANT IN THE VICINITY OF MINING AREA

The location of a new cement plant is normally determined by the following parameters

- Raw material availability
- Market for cement

- ❑ Energy supply
- ❑ Infrastructural requirements
- ❑ Socio-economic conditions

Fig. 5.1 shows the factors affecting the location of a plant in diagrammatic form.

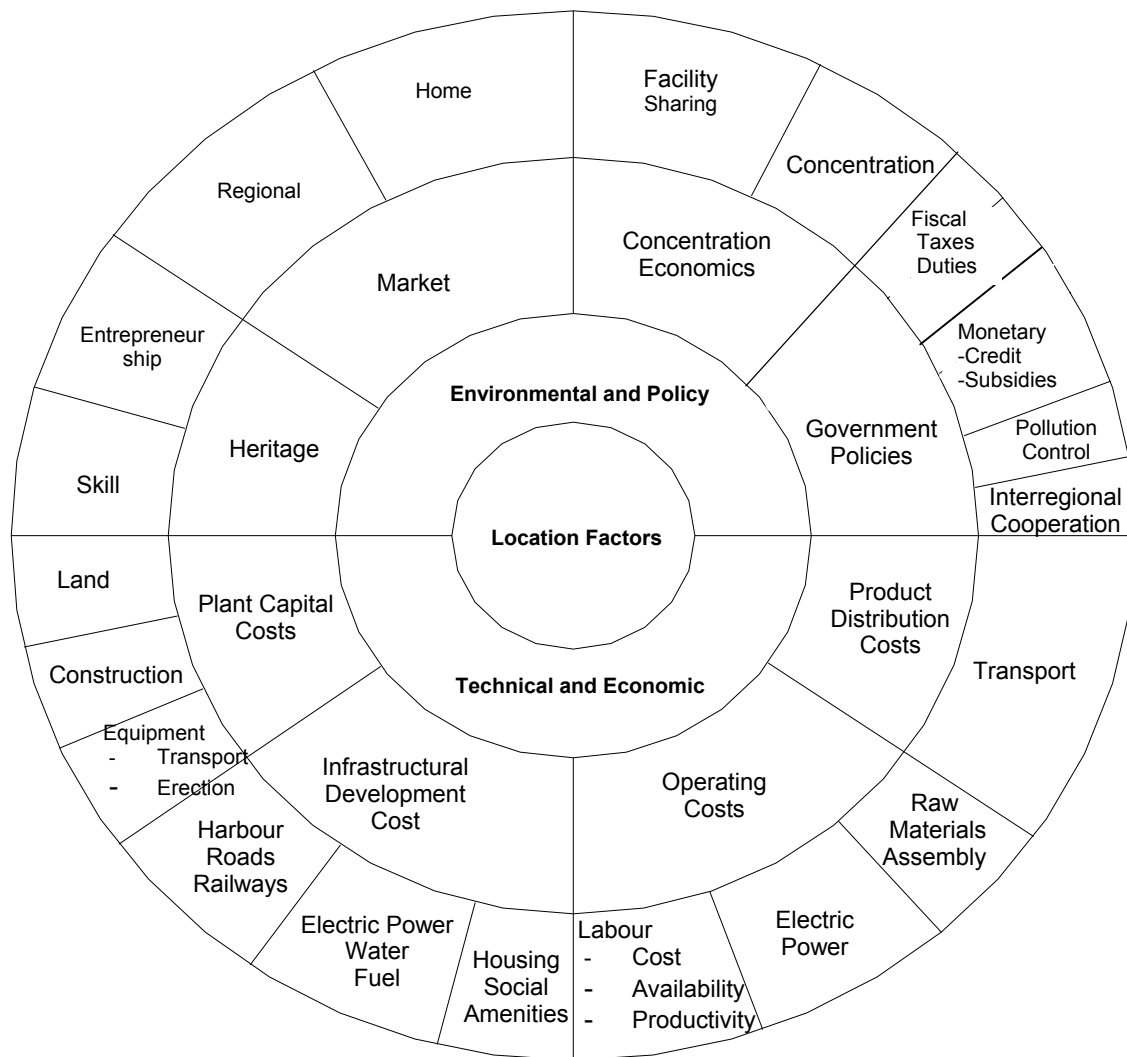


Fig. 5.1 : Plant Location Factors

The following major parameters have been taken into account when deciding the location of the new cement plant:

5.2.1 PROCESS TECHNOLOGY

Well known and established, dry process shall be used for manufacturing of cement. A production process technology has been recommended which consumes only the minimum possible process water and cooling water. The installation of bag filters instead of ESPs eliminates the need of water spray towers for exhaust gas conditioning.



5.2.2 PUBLIC POLICY

FDRE supports the establishment of private industries outside the established commercial and industrial centers in order to decentralize economic activities. Further, there is currently a large upsurge in demand for cement in the target market area i.e. in and around Addis Ababa for construction and development. This demand cannot be met from the existing cement plants due to their limited production capacities. Therefore, the decision to locate a new cement plant in Derba not far from Addis Ababa is a key for living standard development in Ethiopia.

5.2.3 RAW MATERIALS AVAILABILITY

Sufficient mineable reserves of the raw materials, limestone and clay of suitable quality occur in large quantities in the vicinity at a distance of 7 km (crow fly) from the plant site.

5.2.4 PLANT LOCATION

Three possible plant locations have been considered. The three options are shown in **Fig. 5.2**.

Option 1 (Mugher, in the valley): This option would entail minimal transportation for limestone. However, other materials like pumice, coal, clay, which are available at a higher altitude, will have to be brought down to the valley. There is no road at present linking the highs to the valley area. Thus, a new 14 km long road shall have to be built. In addition cement shall have to be transported from the valley to the highlands, which shall be difficult.

Air emission dispersion would be difficult, as a stack of almost 800 m shall be required to disperse the stack emissions above the plateau.

Moreover, contiguous adequate flat land to the tune of 125 ha for location of plant is not available in the valley.

Option 2 (Derba): This village has a good road connection. However, locating the plant close to habitation of Derba village is not advisable since it would lead to detrimental impacts on the local population.

Option 3 (8 km from Derba): About 8 km from Derba village, adequate flat area is available which is suitable for locating the plant with a residential complex. A road shall have to be built from Derba to the site over 8 km distance. The plant site can be connected to the mining area in the valley by a 7 km long belt conveyor for transportation of limestone. The site is also far from habitation of Derba village.

Thus Option 3 i.e. location of plant about 8 km from Derba has been selected to allow for minimal site disturbance and to avoid a site close to habitation.

5.2.5 LIMESTONE TRANSPORTATION

For the transportation of limestone and marl from the quarry to the plant, several options have been studied.

- Transportation through road
- Conventional belt conveyor system



- ❑ Pipe conveyor
- ❑ Tramway / Ropeway

Each of the above options is discussed briefly.

Option 1 (Road transport): Looking at the sharp fall in contours, it is difficult to construct a haul road with moderate light gradient to transport raw materials. Road construction will also involve several high capacity bridges and culverts to cover large gorges and rivers. Looking at the difficulties in road construction and the high cost of road transportation as compared to mechanized transport, this option is not being proposed for the project.

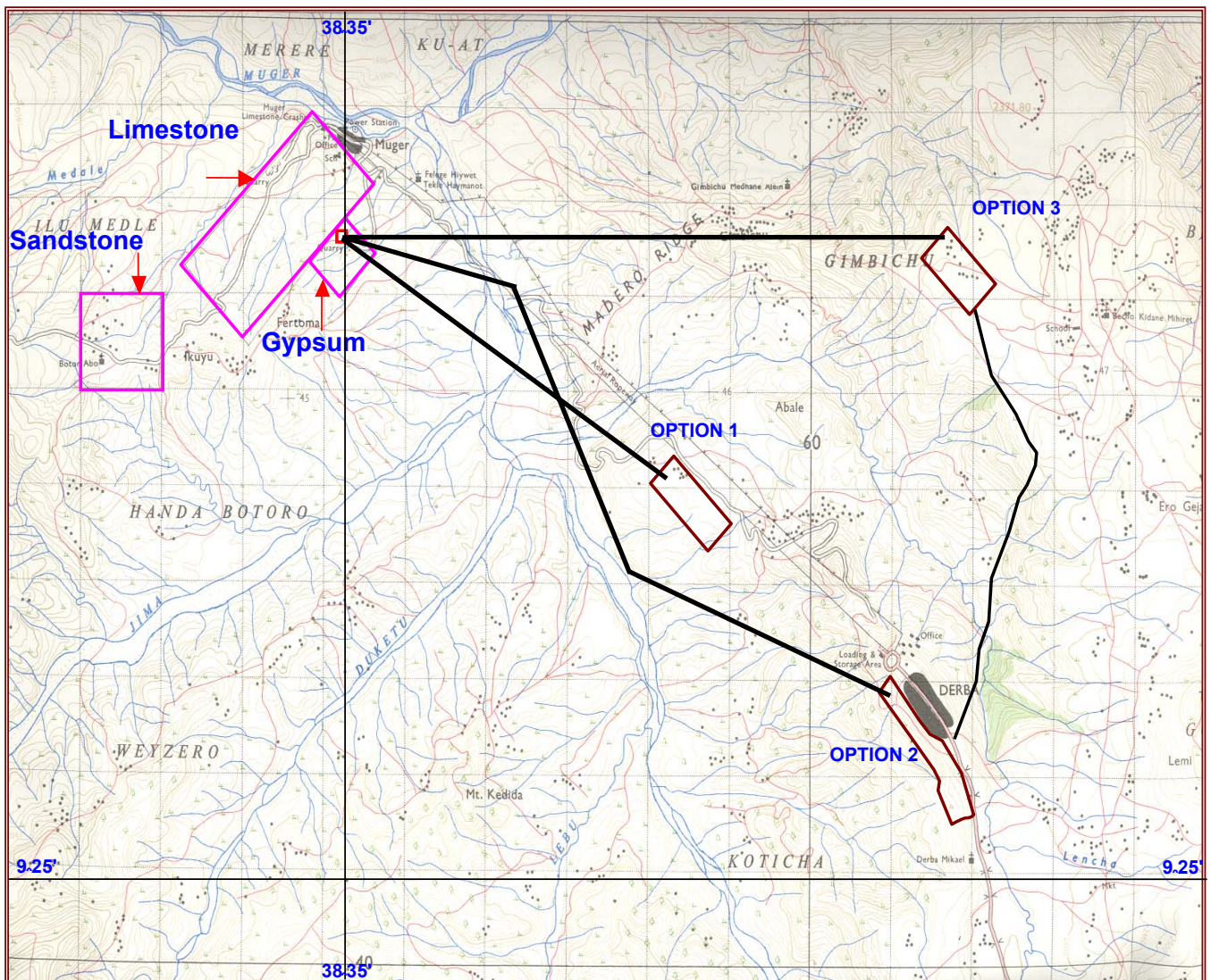


Fig. 5.2 : Alternative Plant Locations Evaluated

Option 2 (Conventional Belt Conveyor System) : For the transportation of material an enclosed conveyor belt system will be used. The conveyor will feed the limestone/ marl directly to the stockpile.

Option 3 (Pipe Conveyor) : Pipe conveyor is a modern material transportation system, which eliminates several constraints like training of conveyor, spillage, nuisance dust



generation, covering of conveyors etc. associated with other means of transport systems. The conveyor can accept steep angles and inclinations and protect material from natural weather conditions. For the distance of 7 km a single conveyor will be required. Pipe conveyor will feed to the limestone/ marl stockpile directly. However, the equipment is comparatively more expensive.

Option 4 (Ropeway) : Ropeways are conventional material transportation system, which have been used for tackling sharp inclinations/ altitude differences since ages. Due to the rope capacity, bucket filling time and bucket movements, ropeways are generally designed only upto a maximum capacity of 600 tph. Due to limitations in the design capacity of ropeways and very high maintenance requirements, this option is not proposed for this project.

Based on the above discussions, a belt conveyor system consisting of four belt conveyors has been selected for the transportation of limestone and marl from the crusher to the pre-blending stockpiles. The capacity of the conveyor is proposed as 1,250 tph considering a 25% margin on the limestone and marl crusher. The other corrective sand and additive gypsum shall also be transported through the same conveyor during off time of limestone crusher.

5.2.6 MARKET

According to a comprehensive market survey carried out, the new cement plant at Derba shall take a large share of the domestic market. **DMC** is expected to command a market share of around 37% in its first year of operation, which will increase to 41% in its fourth year of operation. **DMC** will achieve 100% capacity utilization in its fourth year of operation.

Based on the current and estimated future demand of various types of cement, a product mix of 30% OPC and 70% PPC is proposed.

5.2.7 ENERGY SUPPLY

The availability of power in Ethiopia is largely based on hydro-electric generation and may be considered reliable. The main feeder line passes close to Chancho. A substation shall be constructed here and a power line at 132 kV will be drawn over a distance of 20 km. Sufficient power is available for supply to the plant.

5.2.8 FUEL SUPPLY

Imported coal has been considered as the main fuel for the plant. Use of agricultural waste may also be explored for calciner firing in the future, as large quantities of agricultural waste are available in the nearby areas.

5.2.9 SOCIO-ECONOMIC CONDITIONS

There are a number of small communities around the proposed project site. A sizeable reservoir of semi-skilled and unskilled labor can be recruited in the nearby areas, thus creating employment and improving the living standards of the people in the vicinity. Skilled personnel can be recruited in the neighbouring towns of Derba, Chancho, Addis Ababa, etc. Bus transport will be provided for employees of **DMC** between Derba and the plant site during normal and shift changing hours. As an added facility, transport will be provided for the workers up to Addis during weekends.



A large number of local people shall benefit from the direct and indirect employment opportunities that shall be created with the establishment of the plant. The details are provided in ESMP Report.

Chapter 6
Environmental & Social Impact
Assessment



CHAPTER - 6

ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT

6.0 PREAMBLE

Actual and foreseeable events, including operational and typical events are evaluated. Processes that may create risks to the environment are considered and are analyzed in terms of key potential environmental impacts.

The environmental impacts include all those that are beneficial or adverse, short or long term (acute or chronic), temporary or permanent, direct or indirect, and local or regional. The adverse impacts include all those leading to harm to living resources, damage to human health, hindrance to other activities, impairment of quality for use, damage to cultural resources, and damage to physical structures. For each identified potential environmental impact, the associated environmental risk is assessed based on its likelihood and significance. The impacts assessment is performed in three steps:

- ❑ Step 1: Identification of interactions between activities and environmental receptors
- ❑ Step 2: Identification of potentially significant environmental impacts
- ❑ Step 3: Evaluation of all significant environmental impacts

In Step 1, based on the project description and environmental baseline description, a detailed matrix of activities and environmental receptors is prepared and it is determined whether an interaction exists between an activity and a receptor.

In Step 2, based on the interactions identified in Step 1, potentially significant impacts due to the proposed changes are identified. The impacts may be beneficial/ adverse, direct/ indirect, reversible/ irreversible and short-term/ long-term.

In Step 3, all the potentially significant impacts are evaluated. A qualitative evaluation is used whereby an adverse impact is rated as “low”, “medium” or “high”. The impact rating is based on two parameters: the “significance of impact” and the “likelihood of occurrence of impact”. The significance depends mainly on the nature and size of the activity and the environmental sensitivity, while the likelihood of occurrence depends mainly on nature of the activity and the control measures in place. The details of criteria adopted for impact assessment are as follows:

Impact Rating		Criteria
Nature of impact	Beneficial	Positive
	Adverse	Negative
Duration of impact	Short term	Impacts shall be confined to a stipulated time
	Long term	Impacts shall continue till the end of plant life
Likelihood of occurrence	Negligible	<10%
	Low	10-40%
	Medium	40-60%
	High	60-80%
	Very high	80-100%



Impact Rating		Criteria
Significance of impact	Slight	Very difficult to notice impacts
	Minor	Noticeable impacts only
	Localized	Noticed by adjacent locality and may have direct impacts
	Major	Have direct sustainable impacts
	Massive	Ability to change the system
Potential impact level	Low	Has practically no impact
	Medium	Has impact in local area
	High	Has impact in region

The likely impacts of the proposed plant would be:

- Due to construction phase and development phase which would be regarded as temporary or short term
- Due to operation, which would have long term impacts.
- Due to closure, which would have long term impacts

The construction, operation and closure phases of the proposed project comprise of various activities each of which has been considered to assess the impact on one or other environmental parameter.

6.1 IMPACTS DURING CONSTRUCTION AND DEVELOPMENT PHASE

Construction and development activities normally spread over pre-construction, preparatory construction, machinery installation and commissioning stages and end with the induction of manpower and startup.

Pre-construction phase involves completion of all legal formalities from various statutory bodies, surveys/ studies required, finalization of contract for procurement of machinery/ equipments, recruitment and hiring of requisite skilled, semi-skilled manpower and labour, provision of space and other facilities like water supply, disposal of wastewater and solid waste, etc. on temporary basis for the contracted labour to be employed and provision for storage of machinery and materials to be used for construction.

Preparatory construction phase mainly consists of setting up of construction camp, transportation of machinery and materials to be used for construction, clearing and leveling of land, transportation of machinery/ equipment to the site, construction of foundations, buildings and approach roads required for installation of the same, etc.

Machinery installation and commissioning phase involves activities like cutting, welding and construction of buildings and other facilities, laying of cables and pipelines, installation of machinery, etc. Start up involves testing of plant for any type of leakages and designed capacity.

The details of activities and actions to be undertaken and their impacts during construction and development phase are summarized in **Table 6.1** and described below:



Sn	Component	Activities	Potential Impacts
1	Movement of manpower, machinery and materials	<ul style="list-style-type: none"> <input type="checkbox"/> Increase in traffic movement <input type="checkbox"/> Encroachment of area for parking & camping <input type="checkbox"/> Washing and maintenance of vehicles 	<ul style="list-style-type: none"> <input type="checkbox"/> Disturbance to community & its safety <input type="checkbox"/> Contribution of dust and gaseous pollutants like SO₂, NO_x, CO, VOC to ambient air quality <input type="checkbox"/> Contribution to ambient noise level <input type="checkbox"/> Employment to locals <input type="checkbox"/> Business opportunities to locals
2	Site clearing, leveling & excavation	<ul style="list-style-type: none"> <input type="checkbox"/> Operation of heavy earth moving machinery & equipment <input type="checkbox"/> Removal of vegetation at site <input type="checkbox"/> Piling of soil <input type="checkbox"/> Storage of oil <input type="checkbox"/> Disturbance to groundwater by intersection of shallow aquifer <input type="checkbox"/> Operation of D.G sets 	<ul style="list-style-type: none"> <input type="checkbox"/> Disturbance to native vegetation and habitats <input type="checkbox"/> Change in Land use pattern <input type="checkbox"/> Disturbance to existing nearby land users creating visual impact <input type="checkbox"/> Contribution of dust and gaseous pollutants like SO₂, NO_x, CO, VOC to ambient air quality <input type="checkbox"/> Contribution to ambient noise level <input type="checkbox"/> Disposal of solid waste & waste water <input type="checkbox"/> Employment to locals <input type="checkbox"/> Business opportunities to locals
3	Civil Construction	<ul style="list-style-type: none"> <input type="checkbox"/> Transportation and storage of construction materials <input type="checkbox"/> Storage of oil <input type="checkbox"/> Operation of construction equipment & machinery <input type="checkbox"/> Storage of waste material <input type="checkbox"/> Exploitation of water resources <input type="checkbox"/> Operation of D.G sets 	<ul style="list-style-type: none"> <input type="checkbox"/> Disturbance to existing nearby land users creating visual impact <input type="checkbox"/> Contribution of dust and gaseous pollutants like SO₂, NO_x, CO, VOC to ambient air quality <input type="checkbox"/> Contribution to ambient noise level <input type="checkbox"/> Disposal of solid waste & waste water <input type="checkbox"/> Employment to locals <input type="checkbox"/> Business opportunities to locals



Sn	Component	Activities	Potential Impacts
4	Mechanical Construction	<ul style="list-style-type: none"> ❑ Transportation of equipment, metal sheets etc. ❑ Operation of cutting and welding machines ❑ Storage of oil ❑ Storage of waste material ❑ D.G set operation 	<ul style="list-style-type: none"> ❑ Contribution of dust and gaseous pollutants like SO₂, NO_x, CO, VOC to ambient air quality ❑ Contribution to ambient noise level ❑ Disposal of solid waste and waste water ❑ Employment to locals ❑ Business opportunities to locals
5	Camp	<ul style="list-style-type: none"> ❑ Construction of temporary accommodation ❑ Supply of fuel and other material ❑ Supply of domestic water ❑ Storage of domestic waste ❑ Medical facilities ❑ Recreational facilities ❑ Supply of electricity 	<ul style="list-style-type: none"> ❑ Disturbance to existing nearby land users creating visual impact ❑ Contribution of dust and gaseous pollutants like SO₂, NO_x, CO, VOC to ambient air quality ❑ Contribution to ambient noise level ❑ Disposal of solid waste & waste water ❑ Price hike of essential commodities ❑ Cultural and aesthetic features ❑ Influx of outsiders/ foreigners ❑ Employment to locals ❑ Business opportunities to locals

Table 6.1: Impacts During Construction Phase

6.1.1 COMPONENTS CREATING RISKS TO NATURAL ENVIRONMENT

The components of the construction and development phase that could result in effects on the natural environment include the following:



6.1.1.1 Land Use

The total land acquired for the proposed plant is 125 hectares. This land is basically agricultural and grazing land and has been acquired by Oromiya Regional Government from individual landowners after paying compensation as required under Ethiopian statutes. The acquisition of grazing land shall lead to adverse impacts on livestock rearing.

6.1.1.2 Ambient Air Quality

The sources of air emission during construction and development phase will include site clearing, vehicles used for transportation of men and materials to the site and operation of construction equipment. Emissions from these are expected to result in degradation of air quality, primarily in the working environment affecting construction employees. However, SPM in the ambient air will be coarse and would settle within a short distance close to the construction site so measures will need to be taken to protect workers. Hence, dust and other emissions are unlikely to spread sufficiently to affect the surroundings of the construction site.

Traffic to the site during construction will be more intensive and much heavier than at present in normal operating conditions. In turn, it will subject existing roads to more stress. The increase in traffic shall also lead to an increased accident risk to livestock in the neighbouring areas.

Gaseous emissions like SO₂, NO_x, CO, HC are also anticipated as a result of burning of fuel to accomplish construction phase due to operation of machinery/ equipment.

Site clearing is proposed to be limited and confined to the plant area only. Moreover, the standard facilities/ infrastructure for dust suppression shall be implemented.

Thus the impact shall be adverse and for a short term which shall be localized in extent.

6.1.1.3 Noise Level

The general noise levels due to construction and development activities such as working of heavy earth moving equipment and machinery installation may sometimes go up to 85 dB(A) at the work sites during day time. The workers in general are likely to be exposed to an equivalent noise level of 85 dB (A) in an 8-hour shift for which all statutory precautions as per law will be implemented. Use of proper personal protective equipment shall further mitigate any adverse impact of noise to the workers. By using standard practice of operation, these impacts can be minimized and made insignificant.

Thus the impact shall be adverse and for a short term which shall be localized in extent.

6.1.1.4 Water Resources

During the construction phase of proposed plant, total water requirement is estimated as 250 to 300 m³/ day depending upon type of construction activities at site. This requirement of water will be drawn through ground water. The impacts on the water resources during construction and development phase shall be adverse, for short term and localized in nature.



6.1.1.5 Waste Water

The wastewater generated during construction and development phase shall be mainly from domestic activities. Since most of the workers will be from local area, wastewater generated will be minimal. The domestic waste so generated in campsite shall be treated in portable Sewage Treatment Plant (STP), which shall be provided at the site. The treated domestic wastewater will be used in dust suppression and construction activities.

Thus the impact during construction and development phase shall be adverse, for short term and localized in nature.

6.1.1.6 Soil & Solid Waste

During construction and development phase, solid waste such as excavated top layers, debris, metal waste and oil and grease from construction machines will be generated. This waste may contaminate the plant site temporarily and would be restricted to a small area. Excavated top layers will be used for backfilling and as soon as construction is over all waste will be cleared as soon as possible.

During the construction and development phase, hydraulic oil, fuels and lubricating oils would be used. There is potential for accidental spills while re-fuelling or servicing vehicles and through breakage due to wear and tear. Procedures for maintenance of equipment would ensure that this risk is minimized and cleanup response is rapid if any spill occurs.

During construction phase, waste oil shall be generated as and when lubricating oil is changed. Waste oil shall be collected through the drain ports and stored in leak proof steel drums and sent to the "Spent Oil Storage Site" of. The waste oil drums shall be properly identified with label of what is contained in Oromiya/ Amahrik and English and shall be disposed off through licensed vendors or stored for later use in kiln if the required permit is obtained from authorities.

The solid waste generated by workers as municipal waste will be minimal as most of them belong to the local area. Solid waste shall be disposed off on municipal waste disposal site allocated by local administrative authorities. Other solid waste like debris, metal pieces, cotton waste, etc. so generated will be collected and segregated and will be disposed off in municipal approved site.

The impact of solid waste during construction and development phase shall be adverse, for short term and localized in nature.

6.1.2 COMPONENTS CREATING RISKS TO SOCIO-ECONOMIC ENVIRONMENT

The components of the construction and development phase that could result in effects on the socio-economic environment include the following:

6.1.2.1 Disturbance to Community Resources and Safety

Disturbance to Topography

Construction and development activities are proposed to be confined to a limited area, which would be very small as compared to total study area. Thus the impact on topography shall be adverse, long term and localized.



Impact on Ecology

The potential impacts to ecology as a result of the project are habitat losses associated with land take, habitat degradation, and disturbance caused by construction activity and operations. Given the ecology of the mountains and minimal land take requirements, impacts on the site are considered to be insignificant.

During construction and development phase, disturbance to vegetation shall be localized and confined to a limited area only.

Road crossings and traffic

There are safety risks related to transportation of construction workers and machinery and materials through public roads due to increase in the local traffic and also, there is a requirement for warning signs to minimize damage to the third-party vehicles. In addition, risks to public need to be managed. There will be a higher risk of accidents to animals due to increased traffic on these roads.

Existing road conditions up to Derba are good to take the load during construction and development phase. However, four bridges on the road from Chancho to Derba are old and narrow and new bridges will be constructed along side these before arrival of heavy plant machinery and equipment.

The issue of right of way along the road and the conveyor belt from mines to plant has been addressed with the consent of Zonal and Wereda administration officials. A Committee involving elders and government officials has been established to follow up and resolve issues related to right of way. This committee is accountable to the Wereda Council headed by the Wereda chief administration.

6.1.2.2 Employment and Socio-economic

In addition to permanent staff, the labour strength engaged in the construction shall be about 1,500 persons depending upon construction activities, since many items of construction are labour intensive. Most of the unskilled and semi-skilled labour will be by and large available from the nearby villages. Thus, impact on the physical and aesthetic resources will be minimal.

Further local skilled, semi skilled and unskilled labourers will get direct and indirect employment during the construction phase. This might also result in a steep rise in agricultural wages in the surrounding villages, especially at the time of harvesting for short duration.

Thus the impact on employment and socio-economic scenario shall be mainly beneficial, short term and localized.

6.2 IMPACTS DURING OPERATION OF PLANT AND MINES

The Operation phase of the proposed cement project shall mainly comprise of the following:

- Excavation of limestone from the captive mines
- Crushing of limestone
- Transportation of limestone from mines to plant site



- Transportation of other additives to the plant site
- Preparation of raw meal by adding additives to limestone
- Clinkerisation of raw meal
- Cooling and heat recovery
- Blending & grinding of clinker by adding additives
- Packing & Despatch

The details of main activities and actions to be undertaken and their impacts during operation phase of plant and mines are summarized in **Table 6.2 & 6.3** respectively:

Sn	Component	Activities	Potential Impacts
1	Transportation of raw materials and products	<ul style="list-style-type: none"> <input type="checkbox"/> Increase in traffic movement <input type="checkbox"/> Washing and maintenance of vehicles 	<ul style="list-style-type: none"> <input type="checkbox"/> Disturbance to community & its safety <input type="checkbox"/> Contribution of dust and gaseous pollutants like SO₂, NO_x, CO, VOC to ambient air quality <input type="checkbox"/> Contribution to ambient noise level <input type="checkbox"/> Disposal of solid waste & waste water
2	Operation of plant	<ul style="list-style-type: none"> <input type="checkbox"/> Crushing of limestone and other raw materials <input type="checkbox"/> Preparation of raw meal <input type="checkbox"/> Clinkerisation of raw meal <input type="checkbox"/> Cooling and heat recovery <input type="checkbox"/> Blending & grinding of clinker by adding additives <input type="checkbox"/> Packing & Despatch 	<ul style="list-style-type: none"> <input type="checkbox"/> Air emissions from operations are Dust, NO_x, SO₂, GHG and unburnt hydrocarbons. <input type="checkbox"/> Increase in noise level <input type="checkbox"/> Waste water generation is mainly anticipated from: <ul style="list-style-type: none"> o Water treatment plant o Domestic usages in plant <input type="checkbox"/> Solid waste is anticipated to be generated mainly from wastewater treatment plant as dry sludge, waste lubricating oil from machinery/ equipments and municipal waste from domestic usages <input type="checkbox"/> Accidental spillage of oil, if any.
3	Socio-economic	<ul style="list-style-type: none"> <input type="checkbox"/> Acquisition of land <input type="checkbox"/> Payment of taxes and royalty <input type="checkbox"/> Direct and indirect employment <input type="checkbox"/> Development of infrastructure like road, medical, transportation etc 	<ul style="list-style-type: none"> <input type="checkbox"/> Loss of grazing area <input type="checkbox"/> Change in Land use pattern <input type="checkbox"/> Business opportunities to locals <input type="checkbox"/> Employment to locals <input type="checkbox"/> Demand for drivers <input type="checkbox"/> Regional development <input type="checkbox"/> Saving of foreign exchange



Sn	Component	Activities	Potential Impacts
		etc <input type="checkbox"/> Implementation of Welfare schemes like drinking water supply, education, health etc <input type="checkbox"/> Demand of local products and agricultural products <input type="checkbox"/> Development of green belt	<input type="checkbox"/> Increase in per capita income <input type="checkbox"/> Increase in literacy rate <input type="checkbox"/> Change in living standards

Table 6.2 : Impacts During Operation Phase of Plant

Sn	Component	Activities	Impacts
1	Operation of Mines	<input type="checkbox"/> Drilling <input type="checkbox"/> Blasting <input type="checkbox"/> Loading & transportation of raw materials <input type="checkbox"/> Operation of mining machinery/equipment	<input type="checkbox"/> Air emissions from operations are Dust, NO _x , SO ₂ , and VOCs. <input type="checkbox"/> Generation of noise and vibrations from blasting <input type="checkbox"/> Waste water generation is mainly anticipated from: <ul style="list-style-type: none"> ○ Workshop ○ Domestic usages <input type="checkbox"/> Solid waste is anticipated to be mainly generated as: <ul style="list-style-type: none"> ○ Dry sludge from wastewater treatment plant ○ Waste lubricating oil from machinery/ equipments ○ Municipal waste from domestic usages <input type="checkbox"/> Accidental spillage of oil, if any.
2	Socio-economic	<input type="checkbox"/> Payment of taxes and royalty <input type="checkbox"/> Direct and indirect employment <input type="checkbox"/> Development of infrastructure like road, medical, transportation etc <input type="checkbox"/> Implementation of Welfare schemes like drinking water supply, education, health etc <input type="checkbox"/> Demand of local products and agricultural products	<input type="checkbox"/> Business opportunities to locals <input type="checkbox"/> Employment to locals <input type="checkbox"/> Demand for drivers <input type="checkbox"/> Regional development <input type="checkbox"/> Change in Land use pattern <input type="checkbox"/> Saving of foreign exchange <input type="checkbox"/> Increase in per capita income <input type="checkbox"/> Increase in literacy rate <input type="checkbox"/> Change in living standard



Sn	Component	Activities	Impacts
		<ul style="list-style-type: none"> ❑ Development of green belt ❑ Acquisition of land, relocation of households 	

Table 6.3 : Impacts During Operation Phase of Mines

6.2.1 COMPONENTS CREATING IMPACTS ON NATURAL ENVIRONMENT

The components of the operation phase that could result in effects on the natural environment include the following:

6.2.1.1 Ambient Air Quality

Greenhouse Gas Emissions

Cement Plants have significant emissions of Greenhouse Gases. GHG emissions, especially CO₂ are mainly associated with fuel combustion and with the calcination of limestone, which in its pure form is 44% CO₂ by weight. Roughly 50% of the emitted CO₂ originates from the fuel and the balance 50% from the conversion of raw material.

As per calculations, around 1.67 mio tonnes of CO₂ will be generated per annum during production of 2.46 mio tonnes of cement per annum.

CO makes a minor contribution to GHG emissions (<0.5-1% of total emitted gases). These emissions are normally related to the organic matter content of the raw material.

The proposed measures for CO₂ emission prevention and control, in addition to proper smoothing of kiln operations, include the following:

- ❑ Production of blended cement, i.e. PPC, which has the potential to significantly reduce the fuel consumption and subsequently the CO₂ emissions per tonne of final product.
- ❑ Selection of Preheater-Precliner process to promote energy efficiency

The proposals for reduction and control for GHGs at the proposed plant once it is operational include Carbon Financing, which may include the Ethiopian Government's Clean Development Mechanism, among others.

Waste heat recovery for power generation is also considered BAT technology, but due to high heat demands for raw material drying there will not be enough remaining waste heat left to make this option viable.

The impacts of GHG emissions are considered to be adverse, high, long term and regional in extent.

Stack Emissions

The major sources of emissions from the operation of cement plant are shown in **Fig. 6.1** (Adapted from AP-42, Section 11.6). Emissions released from the plant during operation phase will get dispersed in the atmosphere and finally reach the ground at a specified distance from the sources.

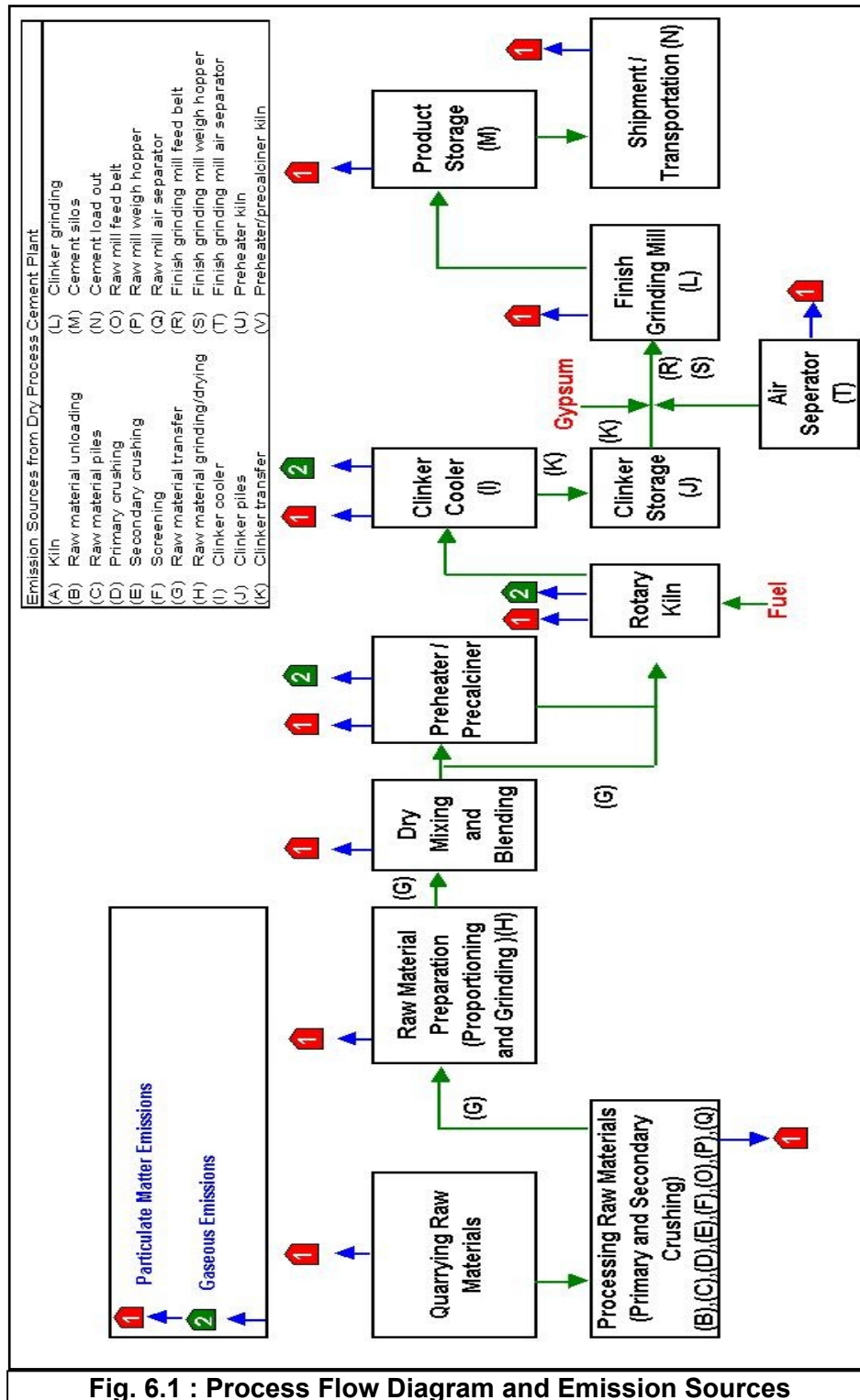


Fig. 6.1 : Process Flow Diagram and Emission Sources



Point Source Emissions

The pollutant emitted from the cement plant is Particulate matter. Sources of PM at cement plants include (1) limestone mining and crushing, (2) raw material storage, (3) grinding and blending (4) clinker production, (5) finish grinding, and (6) packaging and loading. The largest emission source of PM within cement plants is the pyroprocessing system that includes the kiln and clinker cooler exhaust stacks. Dust from the kiln is collected and recycled into the kiln thereby producing clinker from the dust. However, some of the dust is discarded or leached before returning it to the kiln. Additional sources of PM are raw material storage piles, conveyors, storage silos, and unloading facilities.

The sources of particulate emission from the proposed cement plant constitute flue gases from Kiln and cooler. Other sources of particulate system include ventilation systems from Limestone weigh feeder, Raw material storage silo, Raw meal blending silo, Clinker stock pile, Clinker transport to cement mill, Clinker Transport at discharge end, Clinker Hopper at cement mill section, Cement Silo and Packing Machines.

All the pollution control equipment in the proposed cement plant are designed for an outlet emission of less than 25 mg/Nm³. It is proposed to install a bag house for raw mill/Kiln, bag filter for coal mill, cement mill and ESP for cooler. At all other sources, it is proposed to install suitable bag filter systems. The dust collected from the various pollution control equipment will be recycled in the cement manufacturing process

Sulphur dioxide is generated both from the sulphur compounds in the raw materials and from sulphur in the fuel. However, the alkaline nature of the cement provides for direct absorption of SO₂ into the product, thereby mitigating the quantity of SO₂ emissions in the exhaust stream. SO₂ emissions of the kiln are influenced by the operation of the raw mill kiln, where considerable amount of SO₂ generated in the kiln process gets absorbed in the raw material (about 80%).

Oxides of nitrogen are generated during fuel combustion by oxidation of chemically bound nitrogen in the fuel and by thermal fixation of nitrogen in the combustion air. As flame temperature increases, the amount of thermally generated NO_x increases, and the amount of NO_x generated from fuel increases with the quantity of nitrogen in the fuel. In the cement manufacturing process, NO_x is generated in the burning zone of the kiln and the burning zone of a precalcining vessel. Fuel use affects the quantity and type of NO_x generated.

In order to control NO_x emission of kiln, an automatic kiln control system will be installed for maintaining constant burning conditions in kiln thereby reducing the NO_x emission. A well designed burner system shall limit the core flame temperature to ensure a reasonably low value of NO_x generation.

In view of the firing technique of keeping a positive oxygen balance, emission of CO shall be minimal.

Emissions from various stacks have been considered as point sources; there are about 23 major point source emissions from the proposed plant. Each point source is identified based on the location of the each stack and emission strength and flue gas properties.

The list of point sources and their characteristics are discussed in **Table 6.4**. For the purpose of air pollution modeling, controlled emissions at the outlet of each pollution control system have been considered.



Area Source Emissions

Area source emissions are described as the emissions generated during the handling of raw material and other intermediate material in the plant. In cement plants, the major area source emissions will be the dust generation from clinker stockpile and raw material stockpiles etc. However, in the proposed cement plant, a closed clinker stockpile has been proposed and suitable ventilation system with bag filter is proposed and hence the emissions from the stockpiles have been considered as point sources with controlled emissions.

6.2.1.2 Dispersion Modelling

The sources of emissions from the proposed cement plant are given in **Table 6.4**. The particulate emission at the outlet of pollution control systems has been computed based on the design parameters to achieve the outlet concentration of 30 mg/Nm³ though the filters are designed to maintain 25 mg/ Nm³. In addition to the particulate matter, the possible impacts due to release of gaseous pollutants has been considered for the prediction of cumulative ground level concentration of SO₂ and NO_x.

Incremental Ground Level Concentrations (GLCs) of particulate matter, SO₂ and NO_x have been predicted by *Industrial Source Complex Short Term model Version-3 (ISCST 3)* Breeze software developed by U.S. Environmental Protection Agency (USEPA). This model uses a steady state, sector-averaged Gaussian plume equation for application in complex terrain (i.e. terrain stack or release height) and stability classes developed by Pasquill and Gifford.

The details of main stacks attached to proposed unit are given in **Table 6.4**.

Sn	Description	Stack Details											
		Control Equip.	Ht. (m)	Dia. (m)	Vel. (m/s)	Temp (0C)	Emission rate (g/s)			IFC Standard SPM (mg/ Nm ³)	IFC standards		Design Cap. of PM (mg/Nm ³)
							SPM	SO ₂	NO _x		SO _x (mg/ Nm ³)	Nox (mg/ Nm ³)	
1	Coal Crusher	Bag Filter	20.5	0.55	15.21	25	0.09	0	0	50	-	-	25
2	Kiln / Vertical Roller Mill	Bag House	113.5	4.7	9.71	94	2.35	33.67	134.69	30	400	600	25
3	Clinker Cooler	ESP	40	4.4	15.16	250	5.76	0	0	50	-	-	25
4	Cement Mill	Bag Filter	10	1.3	9.7	62	0.187	0	0	50	-	-	25
	Cement Mill	Bag Filter	10	1.3	9.7	62	0.187	0	0	50	-	-	25
	Cement Mill	Bag Filter	10	1.3	9.7	62	0.187	0	0	50	-	-	25
	O-Sapa	Bag Filter	42	2.3	12.9	40	0.821	0	0	50	-	-	25
	O-Sapa	Bag Filter	40	2.3	12.9	40	0.821	0	0	50	-	-	25
	O-Sapa	Bag Filter	40	2.3	12.9	40	0.821	0	0	50	-	-	25
5	Packing Plant	Bag Filter	10.3	0.75	12.40	25	0.14	0	0	50	-	-	25
	Packing Plant	Bag Filter	10.3	0.75	12.40	25	0.14	0	0	50	-	-	25
	Packing Plant	Bag Filter	10.3	0.75	12.40	25	0.14	0	0	50	-	-	25
	Packing Plant	Bag Filter	10.3	0.75	12.40	25	0.14	0	0	50	-	-	25
	Packing Plant	Bag Filter	10.3	0.75	12.40	25	0.14	0	0	50	-	-	25
	Packing Plant	Bag Filter	10.3	0.75	12.40	25	0.14	0	0	50	-	-	25
	Packing Plant	Bag Filter	8.5	0.6	9.08	25	0.06	0	0	50	-	-	25
	Packing Plant	Bag Filter	8.5	0.6	9.08	25	0.06	0	0	50	-	-	25
	Packing Plant	Bag Filter	8.5	0.6	9.08	25	0.06	0	0	50	-	-	25
	Packing Plant	Bag Filter	8.5	0.6	9.08	25	0.06	0	0	50	-	-	25
	Packing Plant	Bag Filter	8.5	0.6	9.08	25	0.06	0	0	50	-	-	25
	Packing Plant	Bag Filter	8.5	0.6	9.08	25	0.06	0	0	50	-	-	25
6	Coal Mill	Bag Filter	46	1.6	14.78	95.3	0.41	0	0	50	-	-	25
7	Correctives Crusher	Bag Filter	22	0.65	14.95	25	0.09	0	0	50	-	-	25

Table 6.4 : Source Characteristics/ Release Characteristics



6.2.1.3 Application of ISCST-3

ISCST3 Model with the following options has been employed to predict the cumulative ground level concentrations due to emissions from the proposed cement plant.

- Area being rural, rural dispersion parameters are considered;
- Predictions have been carried out to estimate concentration values over radial distance of 10 km around the sources;
- Polar receptor network has been considered;
- Emission rates from the point sources and area sources were considered as constant during the entire period;
- Consideration of settling velocity of the particles for cement plant sources;
- The ground level concentrations computed were considered on basis without any consideration of decay coefficient;
- Calm winds recorded during the study period were also taken into consideration;
- 24 hourly mean ground level concentrations have been used for the period Aug-Sept 2007 as recorded at the meteorological station set up at Derba village.

6.2.1.4 Predicted Ground Level Concentrations

In order to estimate the worst-case scenario, the ground level concentration was computed considering the cement plant emissions as multi source emissions.

Suspended Particulate Matter (SPM): The Maximum 50, 24-Hr Average Concentration Values for source group are predicted and are given in **Table 6.5**.

Sn	Receptor		Conc. ($\mu\text{g}/\text{m}^3$)	Sn	Receptor		Conc. ($\mu\text{g}/\text{m}^3$)
	X	Y			X	Y	
1	400	-400	24.62755	26	400	0	10.06484
2	800	-400	16.77568	27	800	-1200	10.03888
3	800	-400	15.14638	28	400	-400	9.73432
4	800	-400	15.04345	29	1200	-400	9.58151
5	800	-400	14.56254	30	800	0	9.44078
6	800	-400	14.56219	31	800	-400	9.38678
7	800	-400	14.27173	32	800	-400	9.3435
8	800	-400	13.08895	33	800	-400	9.05476
9	800	0	13.03435	34	800	-400	8.93025
10	400	-400	12.99912	35	800	-400	8.89264
11	400	-400	12.21528	36	400	-400	8.83964
12	800	-400	12.03509	37	400	0	8.4714
13	800	-400	11.88534	38	400	-800	8.41985
14	800	0	11.85945	39	800	0	8.38327
15	800	-800	11.67374	40	800	-400	8.37889
16	800	-400	11.61069	41	400	-400	8.37422
17	800	-400	11.44688	42	800	0	8.28565
18	400	-800	11.44674	43	800	-400	8.19918
19	800	-400	11.20461	44	400	400	8.12846



Sn	Receptor		Conc. ($\mu\text{g}/\text{m}^3$)	Sn	Receptor		Conc. ($\mu\text{g}/\text{m}^3$)
	X	Y			X	Y	
20	400	-400	11.15705	45	800	-400	8.10888
21	400	-1200	10.98818	46	0	400	8.0376
22	400	-400	10.73729	47	800	-800	7.82001
23	800	-400	10.27876	48	800	-800	7.79127
24	800	-400	10.26515	49	0	800	7.77598
25	1200	-400	10.10403	50	1200	-400	7.7143

Note: All receptors are grid card type and distances are in meter

Table 6.5: 24 Hourly Average Incremental GLCs of SPM

Maximum 24 hourly average incremental GLC value for SPM has been found to be 24.62 $\mu\text{g}/\text{m}^3$ at a distance of 0.4 km.

The predicted ground level concentrations of SPM are shown below in **Fig. 6.2**.

**ISCST3 -BREEZE MODEL FOR SPM
(PLOT FILE OF 1ST HIGH 24 HR. VALUES FOR A TOTAL OF 2500 RECEPTORS)**

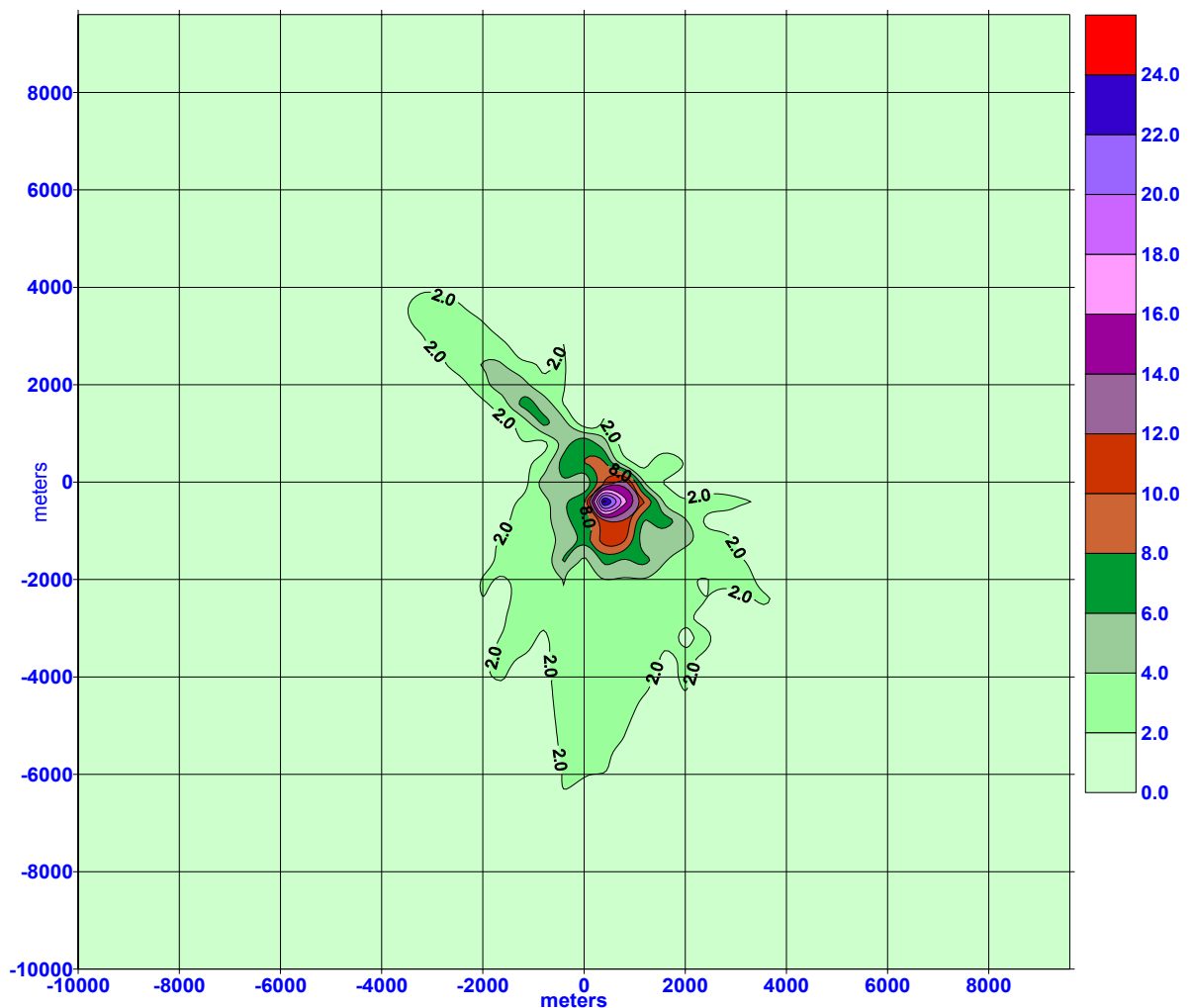


Fig. 6.2 : 24 hourly Incremental GLCs of SPM ($\mu\text{g}/\text{m}^3$) resulting from the proposed project



Sulphur Dioxide (SO₂): The Maximum 50, 24-Hr Average Concentration Values for source group are predicted and are given in Table 6.6.

Sn	Receptor		Conc. µg/m ³	Sn	Receptor		Conc. µg/m ³
	X	Y			X	Y	
1	-200	-3400	5.37393	26	200	-3200	5.02925
2	-200	-3200	5.36121	27	0	-4000	5.02728
3	-200	-3600	5.33325	28	0	-2600	5.02715
4	0	-3200	5.30134	29	200	-3000	5.02577
5	0	-3400	5.29491	30	0	-3400	5.02268
6	-200	-3000	5.28332	31	-1000	-1800	5.00268
7	-200	-3800	5.25043	32	-200	-4200	4.99723
8	0	-3000	5.24879	33	0	-2600	4.99545
9	-1000	-2000	5.24761	34	200	-3400	4.97944
10	0	-3600	5.24038	35	-1400	-2600	4.97684
11	-1000	-2200	5.23782	36	200	-2400	4.96385
12	-1200	-2400	5.23316	37	200	-2200	4.95652
13	0	-2200	5.22326	38	200	-2800	4.95525
14	-1200	-2200	5.2061	39	-400	-3600	4.94767
15	0	-2400	5.15803	40	-1200	-2000	4.94397
16	0	-3800	5.1481	41	-400	-3400	4.93669
17	0	-2000	5.14311	42	0	-2600	4.92641
18	0	-3000	5.13825	43	-400	-3800	4.91272
19	-200	-4000	5.13554	44	0	-3600	4.90905
20	-200	-2800	5.12895	45	-1400	-2400	4.90159
21	0	-2800	5.12675	46	-1400	-2800	4.89808
22	0	-2800	5.11743	47	-200	-2600	4.8889
23	0	-3200	5.10265	48	200	-3600	4.88873
24	-1200	-2600	5.09511	49	0	-4200	4.88584
25	-1000	-2400	5.06214	50	-400	-3200	4.86978

Note: All receptors are grid card type and distances are in meter

Table 6.6: 24 Hourly Average Incremental GLCs of SO₂

Contours for incremental GLC of SO₂ are drawn and corresponding isopleths are shown in Fig. 6.3.

Maximum 24 hourly average incremental GLC value for SO₂ has been found to be 5.37 µg/m³ at a distance of 3.4 km.



ISCST3 -BREEZE MODEL FOR SO₂
(PLOT FILE OF 1ST HIGH 24 HR. VALUES FOR A TOTAL OF 10000 RECEPTORS)

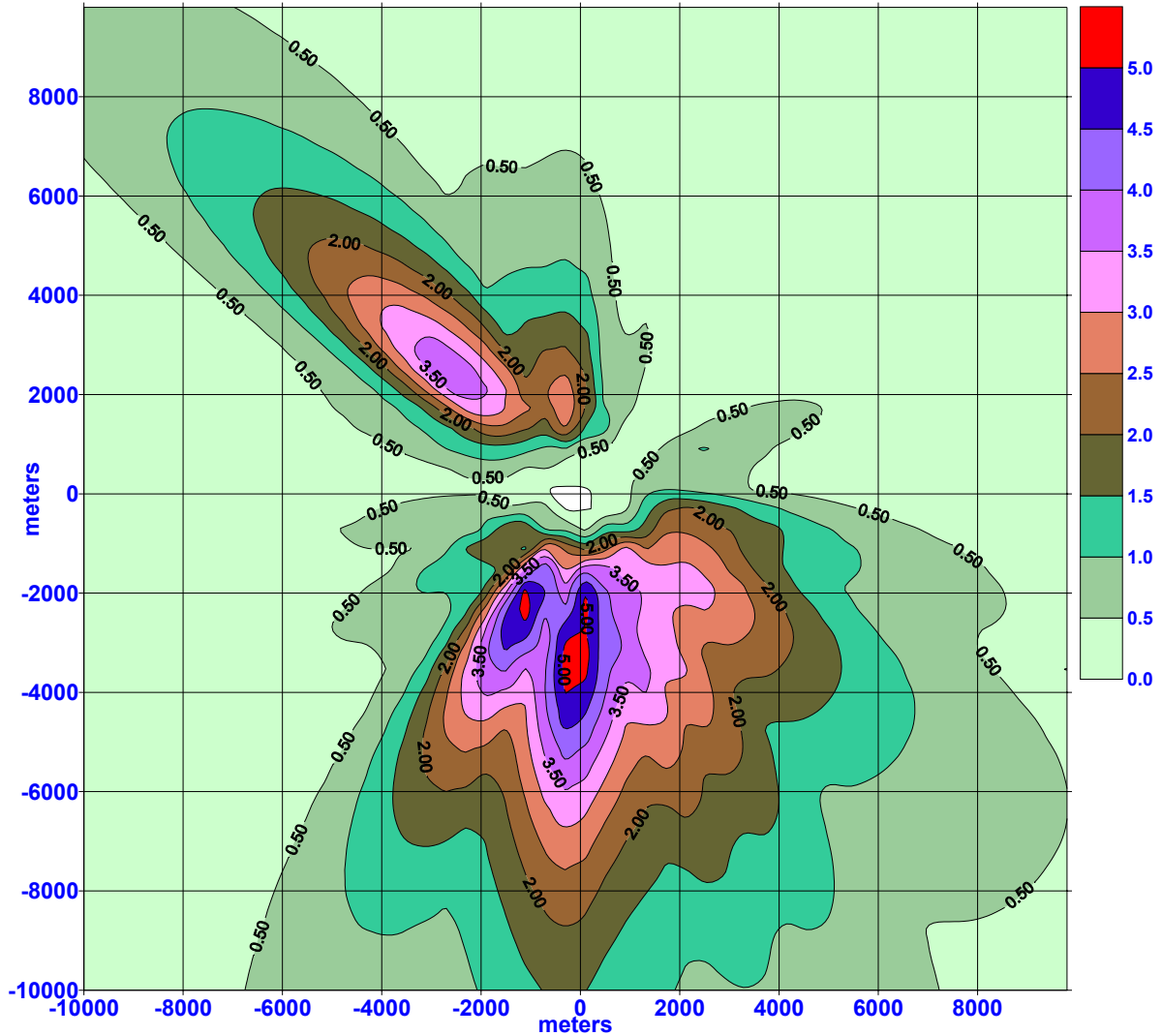


Fig. 6.3 : 24 hourly Incremental GLCs of SO₂ (µg/m³) resulting from the proposed project

Oxides of Nitrogen (NOx) : The first maximum 50 values of incremental GLCs of NOx resulting from operation of proposed plant are given in **Table 6.7**.

Sn	Receptor		Conc. µg/m ³	Sn	Receptor		Conc. µg/m ³
	X	Y			X	Y	
1	-200	-3400	21.4973	26	200	-3200	20.1185
2	-200	-3200	21.44645	27	0	-4000	20.11063
3	-200	-3600	21.33458	28	0	-2600	20.1101
4	0	-3200	21.20693	29	200	-3000	20.10458
5	0	-3400	21.1812	30	0	-3400	20.09221
6	-200	-3000	21.13484	31	-1000	-1800	20.01219
7	-200	-3800	21.00327	32	-200	-4200	19.99041
8	0	-3000	20.99674	33	0	-2600	19.98328



Sn	Receptor		Conc. $\mu\text{g}/\text{m}^3$	Sn	Receptor		Conc. $\mu\text{g}/\text{m}^3$
	X	Y			X	Y	
9	-1000	-2000	20.99199	34	200	-3400	19.91926
10	0	-3600	20.96309	35	-1400	-2600	19.90884
11	-1000	-2200	20.95282	36	200	-2400	19.85687
12	-1200	-2400	20.93418	37	200	-2200	19.82755
13	0	-2200	20.89459	38	200	-2800	19.82249
14	-1200	-2200	20.82593	39	-400	-3600	19.79215
15	0	-2400	20.63367	40	-1200	-2000	19.77736
16	0	-3800	20.59394	41	-400	-3400	19.74823
17	0	-2000	20.57398	42	0	-2600	19.70709
18	0	-3000	20.55453	43	-400	-3800	19.65234
19	-200	-4000	20.54368	44	0	-3600	19.63765
20	-200	-2800	20.51732	45	-1400	-2400	19.60781
21	0	-2800	20.50853	46	-1400	-2800	19.59376
22	0	-2800	20.47122	47	-200	-2600	19.55705
23	0	-3200	20.41212	48	200	-3600	19.55636
24	-1200	-2600	20.38196	49	0	-4200	19.5448
25	-1000	-2400	20.25006	50	-400	-3200	19.48057

Note: All receptors are grid card type and distances are in meter

Table 6.7: 24 Hourly Average Incremental GLCs of NO_x

Contours for incremental GLC of NO_x are drawn and the corresponding isopleths are shown in **Fig 6.4**.

Maximum 24 hourly average incremental GLC value for NO_x has been found to be 21.5 $\mu\text{g}/\text{m}^3$ at a distance of 3.4 km.



ISCST3 -BREEZE MODEL FOR NOx
(PLOT FILE OF 1ST HIGH 24 HR. VALUES FOR A TOTAL OF 10000 RECEPTORS)

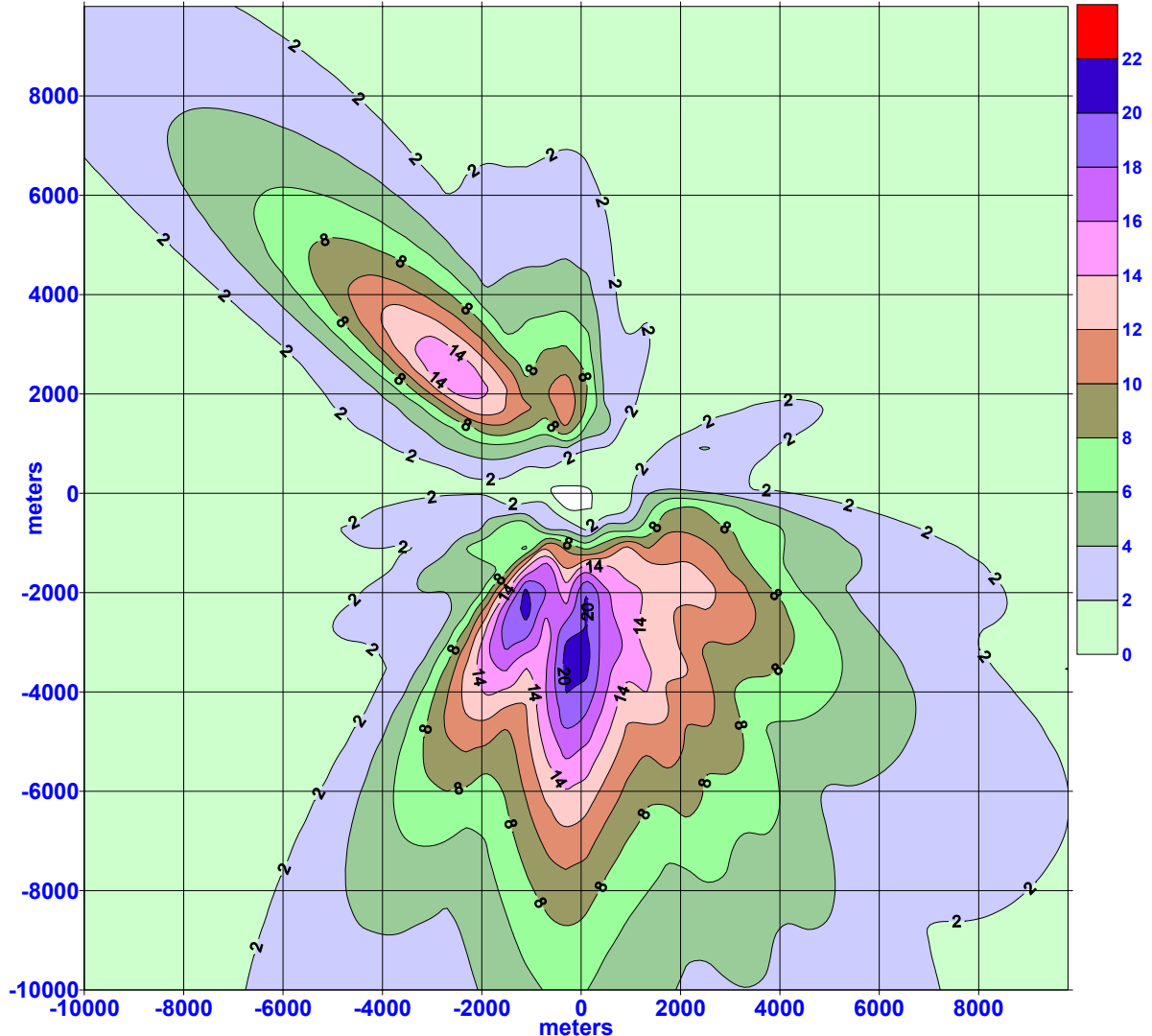


Fig. 6.4 : 24 hourly Incremental GLCs of NOx ($\mu\text{g}/\text{m}^3$) resulting from the proposed project

Thus, it is predicted that the contribution of the proposed cement project to the Ground Level Concentrations of SPM, SOx and NOx levels is very low. The ambient levels of SPM, SOx and NOx being low in the area, the resultant levels of these parameters are expected to remain within the norms.

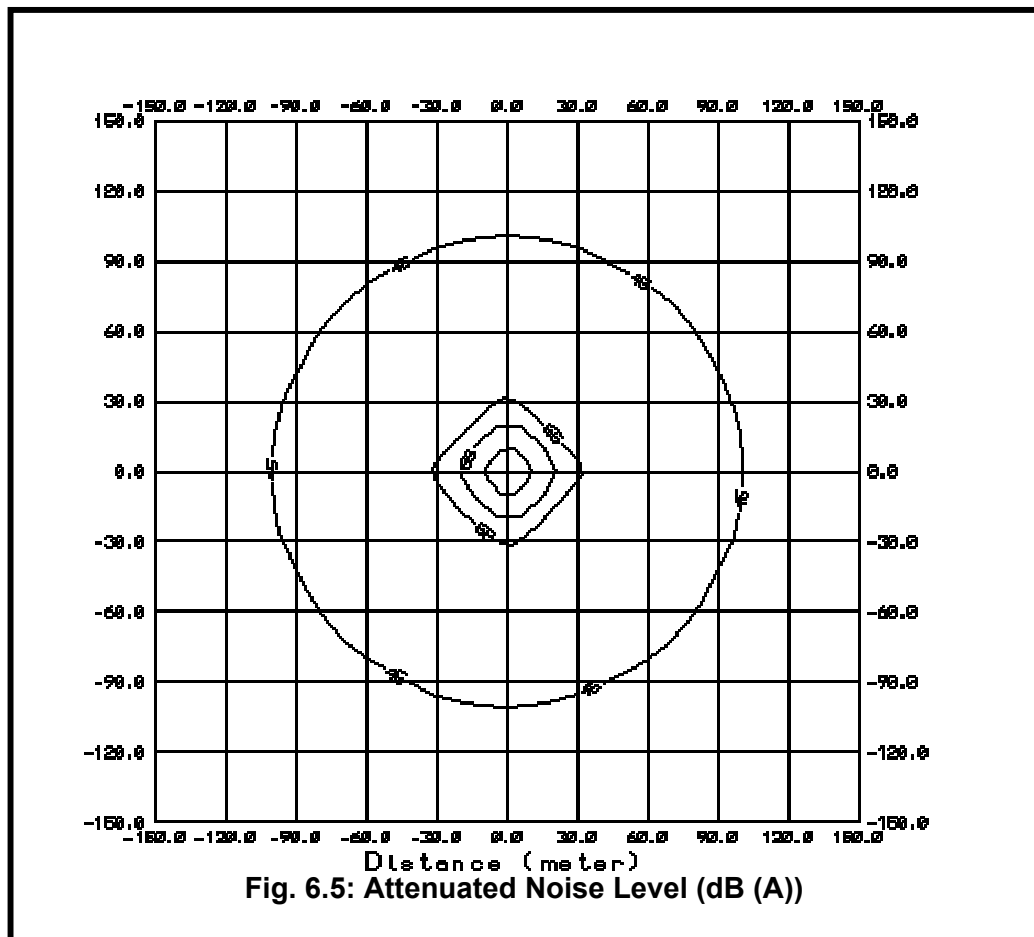
6.2.1.5 Noise Levels

General cumulative noise levels generated from equipment of the operation of proposed cement plant and mines (except blasting) shall be less than 85 dB(A).

For an approximate estimation of dispersion of noise in the ambient from the source points, a standard mathematical model for sound wave propagation is used assuming total cumulative noise level of 85 dB(A). For the modelling purposes, flat terrain is considered and environmental attenuation factors are not considered. Based on the model,



calculations are made and the estimated attenuated noise levels from the proposed activities at different distance are given in **Fig. 6.5**.



The above results show that the elevated noise levels will be limited to a short distance from the source. Further the resultant noise level will be mingled with the background noise levels of 70 dB(A) within 20 m from the center point of the plant site as shown in **Fig. 6.6**, which is well within the plant premises.

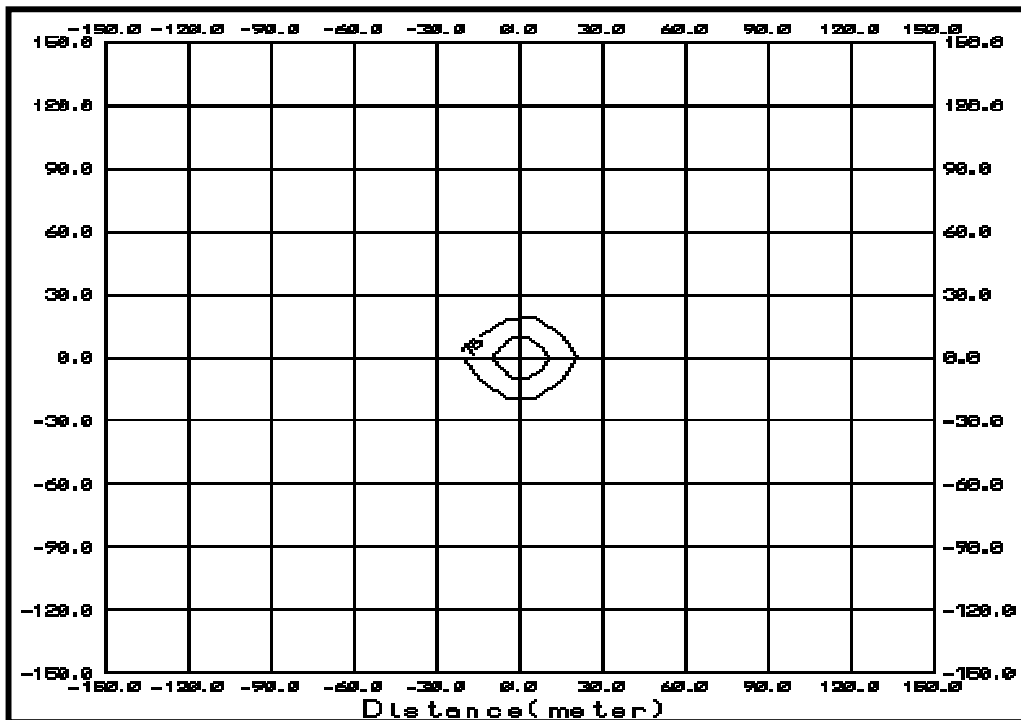


Fig. 6.6: Resultant Noise Level (dB (A))

The above noise levels worked out are without mitigative measures. With the mitigative measures in place, the noise levels will be further restricted within very short distance from the source. Hence impact may be rated as adverse, long term and localized with medium potential impact level.

6.2.1.6 Traffic Movement

Road Traffic to and from the plant during operation will be more intensive and much heavier than at present in normal operating conditions due to transportation of raw materials and cement. In turn, it will contribute to noise as well as ambient air quality in terms of dust and other gaseous pollutants. The regular maintenance of vehicles shall limit the pollution within limit.

The present road conditions upto Chancho are satisfactory for proposed movement of traffic and the existing traffic density is almost insignificant. From Chancho to Derba, the road is a gravel road, which shall be strengthened and converted to a black-topped road in stages. In addition four bridges on the way from Chancho to the Plant site shall be strengthened to be able to take the load of increased heavier traffic. Additional trucks for transportation of raw materials and cement will increase the traffic tremendously.

A new road connecting Derba to the Plant site will also be constructed. The impacts of traffic movement due to proposed project will be adverse, long term, high but localized in extent.

6.2.1.7 Water Resources

During the operation of proposed plant, the water requirement is estimated at around 2,000 m³/ day, which shall be made available through ground water resources at village Muluseya. The detailed hydrological studies carried out in the area during the course of EA



studies have revealed the availability of balance 19.9 mio m³ per year of ground water after considering the exploitation of water by the existing cement plants and the local villages.

The exploitation of water resources during the operation will not affect the water availability in the area for other competing users and the overall impact may be rated as adverse, long term and medium.

6.2.1.8 Soil Erosion

During construction and operation phases, soil erosion could result from cutting of soil. To prevent this from happening, run off control measures shall be implemented, which include installation from siltation ponds and traps. Thus the impact shall be adverse and low in potential.

6.2.1.9 Waste Water

The wastewater generated from the operation of proposed plant shall be about 100 m³/ day, which shall be mainly contributed by waste water from domestic activities and rejects from RO plant.

The wastewater so generated shall be treated in STP of 300 m³/ day capacity, which shall consist of primary to tertiary treatment. Treated water shall be reused for dust suppression, green belt development and in the process to the extent possible. Nothing shall be discharged outside the plant premises. Thus there shall be no adverse impact.

6.2.1.10 Solid Waste

A detailed Quarry Reclamation Plan will be prepared before commencement of mining operations. The reclamation shall be simultaneous with excavation. Once the mining has reached the ultimate pit depth, the pit shall be backfilled, soil be spread on it and plantation shall be developed.

Waste oil shall be generated as and when lubricating oil is changed from various gearboxes. Waste oil shall be collected through the drain ports and stored in leak proof steel drums and sent to the "Spent Oil Storage Site" of the plant. The waste oil drums shall be properly identified with label of what is contained both in Amahrik/ Oromiya and English. Lubricant so generated shall be disposed off as per approved methods or stored for future use in kiln after the requisite permissions have been obtained.

Domestic solid waste generated shall be segregated and will be sent to waste disposal site allocated by the local administrative authorities.

6.2.2 COMPONENTS CREATING IMPACTS ON SOCIO-ECONOMIC ENVIRONMENT

The components of the operation phase that could result in effects on the socio-economic environment include the following:

6.2.2.1 Loss of Agricultural/ Grazing Land

The details of the land acquired from local farmers and the compensation paid are given in the Resettlement Action Plan. Loss in agricultural/ grazing land will result in shift from traditional occupations like farming and livestock rearing to other industry based occupations resulting in a long term adverse impact.



6.2.2.2 Terrestrial Ecology

Vegetation would be disturbed due to clearing of the area. The overall impact on the terrestrial ecology can be considered positive as a green belt/ plantation of appropriate width shall be developed and maintained in the area by **DMC**.

6.2.2.3 Ground Vibrations

There shall be a risk of ground vibrations during mining activities at the quarry site, which will be controlled by using appropriate blasting techniques. The blast holes shall be initiated by short delay detonators. Multi row blasting shall be undertaken. Use of ANFO as explosive, which has a low velocity of detonation, shall restrict the vibrations to a large extent.

In addition, a detailed vibration study will be carried out after commencement of mining to arrive at an optimized blasting programme.

6.2.2.4 Fly Rocks

Fly rocks are generated during blasting activity in mining operations. The burden shall not be excessive. Keeping an adequate stemming column and keeping the stemming length less than the burden shall control the fly rock generation. This shall result in an adverse, long term impact of medium potential.

6.2.2.5 Occupational Health and Safety

Storage and handling of explosives, exposure to high dust and noise levels are some of the occupational hazards associated with cement plant and mining operations.

Safe storage and handling practices for explosives shall be insisted upon. Specially trained and qualified staff only will be allowed to handle explosives.

Workers shall be provided with Personal Protective Equipment (PPE) like dust masks, ear muffs, helmets, boots, etc. All workers will undergo periodic and regular health check ups and detailed records will be maintained for the same. They shall be trained in safe work practices and frequent third party audits will be carried out.

6.2.2.6 Employment and Economic Growth

Increased quantity of cement produced and provided to local market at a fair price will in general result in the industrial growth, which in turn would generate direct and indirect opportunities of employment and business in the region. The setting up of a cement project would result in payment of various types of taxes to the Government that will have positive regional impacts.

Though there would be a loss of cultivable land, the overall indirect impact on the land use is considered as positive due to adoption of latest methods of seeding and irrigation as there is likelihood of increase in purchasing power of local habitats, which could be attributed to the improvement in income.

The area currently lacks any industry or any avenue for large scale employment. The establishment of the cement plant will lead to direct and indirect employment opportunities.



Preference is being/ will be given in employment to able bodied locals whose land has been permanently acquired for the project. Currently around 70 local labour have been employed at the plant site. This figure will go up to 400 as the construction progresses. Currently around 63% of the labour employed is Chinese because of the Chinese contractor implementing the project. However, this figure shall reduce to 33% as construction progresses. The details of labour employment are as follows:

Sn	Labour source	Labour type	Currently employed	Proposed to be employed
1	Local labour	Skilled	10	50
		Semiskilled	-	50
		Unskilled	60	300
Sub-total			70	400
2	Chinese labour	Skilled	111	1200
		Semiskilled	-	-
		Unskilled	-	-
Sub-total			111	1200
Total			181	1600

The project will generate direct employment for about 475 persons. The indirect employment generated by way of transportation, workshops, petty contractors, shopkeepers and other casual employment is expected to be above 1,500.

The company may need to have a network of retailers (cement stockists) throughout the country and in its marketing regions. Each stockist will have at least 3 employees. This will mean employment to several thousand persons. Thus the project will have positive impact on the employment pattern of the region.

A shift in household industry is likely towards carpentry, blacksmiths and cobblers (the essential services required for any plant and /or its township) from traditional vocations like livestock rearing, etc.

The livestock-rearing pattern is likely to change in the vicinity of the plant to an increase in cows rearing. A moderate increase in poultry farming is also likely, to meet the increased demand for eggs and poultry items.

6.2.2.7 Socio-Economic

DMC shall actively contribute to improve the socio-economic conditions of the area. Infrastructure like roads, facilities for transportation, health and education, which shall be developed as a result of the operation of proposed project, shall also add to socio-economic development of the area.

DMC is committing an annual contribution of Birr 250,000 per year to the project area for establishing a revolving fund to support/ supplement the efforts to help finance small scale businesses for the local communities. A Committee comprising of Wereda officials, affected PAs, DMC will oversee the implementation of the Community Development Fund. **DMC** shall continue the contribution till the cumulative contribution reaches Birr 2.5 million.



A Health Post is already operational at the plant site. This will be upgraded to Health Centre for catering to the **DMC** employees. **DMC** plans to extend health facilities for the local community by establishing a Clinic for inhabitants around the plant site. The ownership and administration of the Clinic shall be with the Regional Government. The estimated cost of the Clinic, which will be allocated by **DMC** in its budget, is estimated as Birr 500,000.

DMC is willing to support the upgradation and upkeep of the established Centre by providing up to Birr 10,000 per month aimed at supplementing the running expenses like manpower. In addition to the above, professional assistance to organize and run the Centre will be provided by **DMC** health professionals.

The health facility at quarry site will also be established to the same standards as the plant facility. The cost of health facility, which will be borne by **DMC**, is estimated as Birr 200,000. However, the administration and management of the health facilities will remain with the concerned office of the Regional Government. A financial assistance of Birr 10,000 per month will be given for meeting the running expenses of the Health Centre. **DMC** health professionals will extend close cooperation in periodic health surveys and during occurrence of any accidents, calamities, etc.

DMC proposes to build new or expand the existing elementary school at the plant and quarry sites and hand over the same to the concerned Government office for managing them. **DMC** is allocating 750,000 Birr in its budget for expanding and upgrading the educational facilities at plant site and quarry. A Regional Vocational Training Centre is planned to be established by Sululta Wereda at Chancho. **DMC** will contribute about Birr 224,000 for the establishment of Vocational (Health Extension Workers and Farmers Training Centre).

Water supply access will be extended to a total of seven villages around the plant and mining sites. These villages are Adero, Abale, Becho Kidanemehrat, Debedebe, Muger, Anda Wezero and Anda Botero. The amount of water, which shall be made available, is estimated to be 83,560 litres per day (assuming consumption of 20 l/ day) in the form of one water point per village. The water points shall be run by a Water Committee, which shall be established comprising of members of the community. The community will be expected to generate a small amount of revenue form the sale of water, so as to cover at least the maintenance cost of the system.

DMC will extend up to 2MW electric power line for the community along the Derba-plant road and around the plant site to facilitate personal connections for the community.

Development of infrastructure like roads, bridges shall improve connectivity in the area. A bridge is proposed to be constructed over Mughher River, which shall provide the only link from the valley to Derba village. Currently people have to walk a distance of 10 km on foot to reach from the quarry area to Derba wading and swimming through Mughher river. The area has until now remained undeveloped due to its poor accessibility.

The overall impact of the proposed project will be high, beneficial and long term.

6.3 IMPACTS DURING CLOSURE PHASE

6.3.1 COMPONENTS CREATING IMPACTS ON SOCIO-ECONOMIC ENVIRONMENT

The components of the closure phase that could result in effects on the socio-economic environment include the following:



6.3.1.1 Plant

Since the land has been given to **DMC** on a long-term lease for establishment of the Cement plant, the options for the final use of the site will depend on the Government.

For the proposed plant of **DMC**, a socio-economic assessment shall be conducted to identify possible impacts on the community and employees due to closure of the plant/quarry at the time of closure.

Post closure land use and socio-economic impacts are important issues for consideration in closure planning. A large industry and mine such as **DMC's** will be a catalyst around which a larger urbanized community will develop. A return to pre industry/ mining conditions may not be possible. As reasonably achievable, closure shall address the facilities and conditions that should be maintained post closure, to sustain the social and economic benefits. Indicators such as maintenance of access and power, ongoing protection of health and safety, etc. shall be considered.

It is proposed that **DMC** also prepare a Future Site Use Plan with the close involvement of the Government and the local community, prior to the decommissioning of the Plant. The Future Site Use Plan shall take into account the amount of remediation and rehabilitation that will be required, and any development of the site that can provide the stakeholders with a sustainable source of employment and income and be sustainable in the long run.

An effort shall be made to develop alternate skills in the local people employed at the Plant so that they may be gainfully employed in other ventures when the Plant closes down.

There shall be an impact on landscape, which shall be prominent at the stage of plant closure. Plant closure shall result in removal of all machinery, equipment and buildings and the plantation carried out in and around the plant site during its life shall result in a positive impact.

The detailed hydrological study carried out in the area has revealed that there is adequate water available in the area and it is safe to extract water for operation of the proposed project. Ground water harvesting schemes are also proposed to be implemented in the plant. No adverse impact on the ground water is anticipated.

6.3.1.2 Mine

Addressing the communities' and stakeholders' needs in relation to the option of site closure is essential. For the proposed plant of **DMC**, a socio-economic assessment shall be conducted to identify possible impacts on the community and employees due to closure of the quarry ahead of the closure.

The closure of a quarry can present safety issues. Prior to closure, a hazard assessment study shall be conducted to identify possible areas of concern, which may impact on the safety of the community and employees, giving particular consideration to preventing uncontrolled access as well as potential exposure to any hazardous materials on site.

A detailed progressive Mine Reclamation and Closure Plan will be prepared before start of mining activities. Progressively, as the extraction takes place and areas are exhausted according to the Mining Plan, the stacked reject material will be backfilled into the pit and a layer of topsoil spread over it and plantation done. The remaining part of the pit, if any, shall be converted to a water reservoir. The reservoir shall be properly fenced.



To avoid the water reservoir from turning into a breeding ground for spread of water and water related vector borne diseases, regular disinfection of the water body shall be done. Suitable insecticides/ pesticides shall be added to the water to prevent the propagation of such diseases.

Since the ultimate mining depth at abandonment of mine will remain above the highest flood water level of Muger river which is 1497 m RL, there shall be no adverse impact on ground water due to the mining activities.

6.4 IMPACT EVALUATION

Based on the qualitative impact assessment, the evaluation of the impacts of the proposed project on the environment both in terms of quantity has been made. The environmental impact evaluation of possible impacts as a result of proposed project activities on various environmental parameters is primarily based on careful study of plant operations, surrounding environment etc. The aspects such as air, water, land, noise and related issues of environment have been assessed on the basis of plant operations for similar plants and baseline of the study area.

For quantification of impacts, matrix system as modified to some extent has been used. For quantifying impacts on the environment, the policies of FDRE, guidelines and standards prescribed by AfDB and the World Bank are being considered. Weightage to each environmental parameter based on its importance has been assigned.

The severity has been divided in impact scores from 0-5 for calculating the severity of impacts on the environmental parameters due to various project activities as given below.

Severity criteria	Impact score
No impact	0
No appreciable impact	1
Significant impact-slight or short term effect	2
Major impact-occasional irreversible effect	3
High impact-irreversible or long term impact	4
Permanent impact	5

The impact score can be -ve or +ve depending on whether the impact is adverse or beneficial.

Based on the above importance values and impact scores, the impact value (impact score x importance value) for the environmental parameters is calculated. The impact value for individual parameter is added to arrive at the total impacts value. The criteria, which shall be used to make conclusive statement based on the total impacts value without control measures, are given below.

Total impact value	Conclusions
Upto (-) 1000	No appreciable impact on environment
(-) 1000 to (-) 2000	Appreciable but reversible impact. Mitigation measures important.
(-) 2000 to (-) 3000	Significant impact mostly reversible after short period. Mitigation measures crucial.
(-) 3000 to (-) 4000	Major impact which is mostly Irreversible. Site selection to be considered.



Total impact value	Conclusions
Above (-) 4000	Permanent irreversible impact, alternative sites to be considered.

The environmental impact matrix based on the above principles has been attempted for the proposed project and is given in **Table 6.8**. The total impact value for the project works out to:

- During construction stage (-) 250
- During operation stage (+) 250

Environmental parameters	Importance value	Constructi on Phase	Operation Phase		Impact Value	
			Without EMP	With EMP	Construction	Operation with EMP
Air Quality	100	(-)1	(-)2	(-)1	-100	-100
Waste Water	50	(-)1	(-)2	(-)1	-50	-50
Water resources	100	(-)1	(-)2	(-)1	-100	-100
Noise & vibration	50	(-)1	(-)2	(-)1	-50	-50
Solid waste	50	(-)1	(-)2	(-)1	-50	-50
Land use	100	(-)1	0	(-)1	-100	-100
Ecology	100	(-)1	(-)1	(-)1	-100	-100
Infrastructure & support services	200	(+)1	0	(+)2	+200	+400
Employment & economic growth	200	(+)1	(+)1	(+)2	+100	+400
Total					-250	+250

Table 6.8 : Quantitative Impact Evaluation During Construction and Operation Phase

The results indicate a definite positive impact of setting up of the proposed project. To summarize, most of the plant activities are not likely to adversely affect the environmental quality of the area surrounding the plant.

Chapter 7

Public Consultation



CHAPTER - 7

PUBLIC CONSULTATION

7.0 PREAMBLE

The Constitution of FDRE highlights the importance of Public Consultation in connection with development projects as per article 92 of Chapter 10 (which sets out national policy principles and objectives), which specifies:

“People have the right to full consultation and to the expression of their views in the planning and implementation of environmental policies and projects that affect them directly.”

The Environmental Policy of Ethiopia (EPE) recognises the need for an EIA to address social, socio-economic, political and cultural impacts, in addition to physical and biological impacts, and for public consultation to be integrated within EIA procedures.

The Environmental Assessment Proclamation and related procedures also place emphasis on the need for public consultation. Therefore, in response to the requirements of the EPA guidelines, a detailed Public Consultation has been carried out as an integral part of the EIA for the proposed Cement project of **DMC**.

Public consultation plays a key role in enabling the public to participate in the planning of project that affects the people directly. As of the beginning of this project, there have been several public/ stakeholders' consultation and participation briefings and meetings, which have taken place at the local, Wereda and Federal levels.

For the proposed cement plant near Derba, consultations are being carried out with various stakeholders of the project at national and local level, to solicit their views regarding the project.

At the Federal and Regional levels, the stakeholders include:

- Federal Environment Protection Authority
- Regional Environment Protection Authority
- Ministry of Water Resources
- Ministry of Agriculture
- Ministry of Mines
- Oromiya Regional Government
- Wereda Administrative Offices

The public consultation process has been carried out with the following objectives:

- To identify potential negative and positive impacts of the project as well as the associated appropriate remedial measures that could be identified through the participation of the people
- To include the opinion of the community and the officials that will be affected by the project so that their views and proposals are addressed in the formulation of mitigation and benefit enhancement measures
- To increase public awareness and understanding of the project and its acceptance.



7.1 CONSULTATION METHODOLOGY

In order to assess the awareness, perception and attitude of the communities about the project and its potential impacts, several meetings and discussions were held with a large number of impacted community members and their leaders from various Wereda sector offices. A number of household individuals were consulted privately so that the people were given a chance to express their views freely.

The groups that are chosen for the consultative meetings were selected with great care on the basis of the location of the project so that their views could represent the entire response of the community as well as the officials in which the project is located. The sampling groups of the people are taken from the communities residing within various villages and Kebeles as well as Wereda offices. The people that can best represent the viewpoint of the community were selected from the project site and its surrounding areas and from the administration offices that administer the project areas. The individuals who are randomly selected include people from different age groups and a balanced selection was made so as to consider the viewpoints of both the gender categories. The sample mainly focused at economically active people and this helped to include the people who will be directly affected by the project.

The effects of the development projects are not limited to their immediate environment but rather extend to its surrounding areas. It is important to discover all aspects of the project effects and include in the study so that a comprehensive understanding of the perception of the project could be achieved.

The project consists of plant, mining, access roads and other related components. The negative and positive impacts of the project are considered to reach within a ten km radius measured from the project sites (mining and plant sites). The public consultation therefore doesn't limit itself only to the immediate places of the mining and plant sites where the major impact of the project will be experienced but it also includes the surrounding places located within the stated radius area.

Consecutive field trips were taken in August 2007 to these project and the neighbouring areas in order to assess the views and comments of the concerned administrative units within and around the project areas.

The consultative meetings were undertaken by the team of experts comprising of economists, socio-economist, environmentalists and surveyors having relevant work experience and qualifications in the field.

Appropriate guidelines and related studies were referred before the launching of the consultative meetings and on this basis; the points of discussions were formulated to facilitate the discussion towards the desired output.

Several related issues were designed for discussions and these include:

- Identifying major impacts of the project
- Identifying potential benefit enhancement and mitigation measures
- Other relevant issues

The project, its intended objectives, the location, its ownership as well as the need of public consultation were briefly discussed with the participants so that they can forward their views on these bases.



The consultative meetings were done through an official language of Amharic. However, the community and individual based discussions were conducted in Oromiffa, the language of the local communities, through an interpreter of the consultative members who could speak the language.

7.2 IDENTIFICATION OF STAKEHOLDERS

The project is proposed to be located within Oromiya Regional State of the country. The project area and the 10 km study area around it fall within North and West Shoa Zones.

There are five Weredas located within and around the project:

North Shoa Zone:

- Sululta Wereda
- Mulo Wereda
- Yaya Gulele Wereda
- Wichale Wereda

West Shoa Zone:

- Adaberga Wereda

There are twenty-eight Kebeles or Peasant Associations (PAs) that are organized under the Weredas consisting of a number of settlement villages. The Kebele Peasant Association is the lowest governmental administrative unit of the rural area.

Following the Scoping of issues and review of findings, the following stakeholders were identified for consultation:

- Government officials at Federal, Wereda and Kebele levels
- Communities and people located in and around the project area

The focus community and individual groups, development agents, experts and government institutions have given their opinions, shared their experiences and discussed critical issues. During this consultation process, a number of project implementation related issues were identified by the stakeholders and these are presented in the later subsections.

7.2.1 FEDERAL LEVEL GOVERNMENT OFFICIALS

At the Federal Governmental offices level, the Environmental Protection Authority was consulted prior to the launching of the study. The meeting was held on 12 July 2007. The office is the prime responsible governmental body concerning the environmental issues of the country. The Ministry of Water Resources and the Ministry of Mines and Energy was also consulted. Meetings were held on 11 and 12 July 2007 with the two Ministries.

The general description of the EIA process and the permit requirements are detailed in the Environmental Impact Assessment Procedural Guideline Series 1 of the FDRE released in Nov 2003.

Subsequent to Screening, Scoping and EIA Study, the stages, which have already been completed for the proposed DMC project, the balance stages involved in the EA include the following:



Reviewing

The purpose of review is to examine and determine whether the EIA report is an adequate assessment of the environmental effects and of sufficient relevance and quality for decision-making. Reviewing is conducted at various stages in the EA processes and includes reviewing of Screening report, Scoping report, TORs, EIA Report, and Performance (monitoring or audit) reports at different stages in the project cycle.

Reviewing may include considerations of the adequacy of:

- Compliance with the “approved TOR”;
- Required information;
- The examination of alternatives, assessment of impacts, appropriateness of mitigation measures and monitoring schemes as well as implementation arrangements;
- The use of scientific and analytical techniques;
- The extent of public involvement and reflection of their concerns, and
- Presentation of the information to decision makers at Regional, Sectoral, and Local levels.

Decision Making

EIA is an on-going process of review, negotiations and incremental decision-making at various levels of the project cycle, about whether or not the proposal is to proceed, and under what conditions. Decision-making is consultative, participatory and influences others to behave responsibly and sustainably. It also acknowledges and implements mandates and responsibility. Full-scale assessment is required where the project is known to have significant adverse environmental impacts. Important considerations of decision-making are:

- A summary of evaluation is made available to the public
- Reasons for decision and conditions of approval are made public
- There is the right of appeal against decision
- Approval can be reversed or permit can be revoked on the advent of changing circumstances
- Approval of a proposal cannot immune the proponent from being accountable of the occurrence of adverse significant impacts in the course of the implementation of the project.

The licensing agency shall, prior to issue of an operating license for a project, ensure that the EIA of the project has been approved.

Approval of an EIA report is only to mark a simple agreement to the proposal. The culmination of the approval procedure will be the issuance of an Environmental Clearance Certificate upon the satisfactory trial operation phase.

Licensing Agency

The licensing agency is a government organ empowered by law to issue an investment permit, or operating license permit. Licensing agencies are required to:



- Ensure that prior to issuing their respective licenses and permits, they have legal duty to require proponents to submit authorization, a letter of approval or Environmental Clearance Certificate awarded by the appropriate Environmental Agency,
- Ensure that environmental performance criteria are included in their respective sectoral incentive or disincentive structure,
- Ensure that renewal or additional permits issuance should also consider integration of environmental concerns,
- To seek advice or opinion from the appropriate environmental agency, etc.

The draft ESIA and ESMP reports for the proposed **DMC** project have been submitted to the EPA for their comments and approval.

7.2.2 WEREDA LEVEL GOVERNMENT OFFICIALS

Consultation was carried out with the Wereda level government offices that administer the project area. These offices are responsible for the activities taking place within their administrative capacities and are therefore directly concerned with any socio-economical issues of the project related to their specific area. The prime responsibility of the community rests on Wereda level and they will also be responsible for any socio-economic impacts of the project.

All the five Weredas listed above were included in the sample and their views are considered to best represent the entire views and responses of the people. The study has given special emphasis to the Wereda level. A full coverage of the Weredas provides an exhaustive list of the impacts of the project and their associated recommendations proposed to overcome the anticipated negative impacts. The Wereda consultative meetings were held with a total number of 40 officials who are the members of the Wereda Council office.

7.2.3 KEBELE LEVEL GOVERNMENT OFFICIALS

All of the twentyeight Peasant Associations (Kebeles) were made to express their views in an exhaustive Questionnaire specially formulated for the Consultation. It was possible to obtain an exhaustive list of their concerns. The Peasant Associations have got an immediate contact and concern with their surroundings so that any specific issues related with the project could be forwarded by them. The studies have therefore given special importance to all of them during Consultation.

7.2.4 COMMUNITY GROUP DISCUSSIONS

The consultative meetings at Kebele level were done with the total number of 223 community members of three Kebeles:

- Anda Wezero Kebele which is the mining site,
- Becho Kidanemihret Kebele where the plant site is located
- Derba Gulele Beresa Kebele the nearest Kebele to the plant site. Derba is under the administration of this Kebele PA.

These three Kebeles are located entirely within Sululta Wereda and were selected among others due to their proximity to the site of the project.



7.2.5 FOCUS GROUP DISCUSSION

The Consultation was done through detailed Questionnaires prepared for this purpose. Accordingly, all of the 956 sampled households were made to fill their views towards the project specifically on the positive and negative impacts as well as recommending remedial measures and other related issues. This larger number of consulted individuals comprises of both sexes and are people having various types of immovable properties that will be affected by the project.

7.2.6 NGOs

There are some Non-governmental Organizations (NGOs) operating at the Wereda level and these institutions are operating with Sululta, Wichale, Yaya Gulele and Mulo Weredas. In the Sululta Wereda, two NGOs named HUNDE and Arat kilo are reported to be working under their own independent objectives. Within the Wichale Wereda, organizations called PADET (Professional Alliances for Development in Ethiopia) and other two called as EENGO and SUNAMA are functioning. The EENGO concentrates on promotion of environmental protection whereas PADET operates in the area of family planning and reproduction, health and hygiene as well as HIV/ AIDS. In Yaya Gulele Wereda too, OODA whose objective is provision of child education and PADET are operating. Another institution named as WASHOO is engaged in mineral extraction and the provision of rural water supply. However, none of the mentioned NGOs are currently operating within the area delineated as the project area.

7.2.7 TOTAL CONSULTED STAKEHOLDERS

The overall number of the consultative participants from administrative and community levels total to 1,247 consisting of:

- 40 Wereda officials
- 28 Kebele Peasant Associations Council members,
- 223 community members consulted through community discussions
- 956 individual household heads consulted privately.

The consultative meetings included people from different demographic characteristics and this gave a wider opportunity to gather satisfactory baseline information about the viewpoint of the people towards the implementation and the consequences of the project.



Sn	Consultative Meetings	Name	Number of Participants	Place of Consultation	Consultation Date
I					
1.1	Wereda Consultation	Sululta Wereda	9	Chancho	August 15, 2007
1.2		Mulo Wereda	10	Mulo	August 20, 2007
1.3		Wichale Wereda	5	Muketuri	August 22, 2007
1.4		Yaya Gulele Wereda	8	Fital	August 14, 2007
1.5		Adaberga Wereda	8	Enchini	August 15, 2007
		Sub-Total	40		
II					
2.1	Community Consultation	Handa Weyzero Kebele Peasant Association	50	Muger	August 14, 2007
2.2		Becho Kidanemihret Kebele Peasant Association	89	Becho k/Mihret	August 18, 2007
2.3		Derba Gulele Beresa Kebele Peasant Association	84	Derba	August 18, 2007
		Sub-Total	223		
III					
3.1	Kebele Peasant Association Consultation		28	Within their Kebele Peasant Associations	August 8, 2007 to August 18, 2007
3.2	Individual Consultation		956	Within their Kebele Peasant Associations	August 8, 2007 to August 18, 2007
		Grand Total	1,247		

Table 7.1 : Consulted Wereda Administrative Offices and Communities of PA

7.3 FINDINGS OF PUBLIC CONSULTATIONS

7.3.1 CONSULTATION WITH THE ENVIRONMENTAL PROTECTION AUTHORITY, FDRE

The EPA was consulted regarding environmental issues in general and consultative meetings with particular reference to the project. The EPA briefly discussed various issues regarding the methodology of conducting studies of environmental aspects of any development projects of the country. The office explained the relevance of undertaking consultations for such development projects. The appropriate timing of consultation, the formulation of discussion points, conducting and recording of consultation meetings, relevant legal frameworks regarding the participation of the people in development projects and other relevant issues including legal requirements as per Ethiopian statutes were discussed by EPA with the study team. This consultation has been shaped partly by the knowledge obtained thereof.

7.3.2 CONSULTATION WITH WEREDA COUNCILS

The consultative meetings were held within the five Wereda administrative councils namely Sululta, Yaya Gulele, Mulo, Wichale and Adaberga. The consultative meetings were held at Wereda level Council Meetings comprising of members from various Wereda level



governmental offices. The names and responsibilities of the participants are enclosed as **Annex 7.1**.

The consultant prepared attendance records as well as minutes recording sheets to facilitate the recording of the discussions. The administrator of the Wereda was kindly requested to organize the consultative meeting at any convenient time. The points of discussions were disclosed to him in order to inform other members so that they could prepare themselves on the agenda. However, the administrator took the initiative of conducting the meeting on his own and communicated the recording of the discussion to the study team.

All the discussions were recorded in the official language of Amharic by reporters assigned by the respective Chairmen. The points raised and agreed by each Wereda are almost similar to each other. The positive impacts discussed relate to the local / Wereda and national level whereas the negative aspects highlighted are mainly related to the socio-economic environment of the project area.

The general perception is that the remedial measures for the negative impacts are expected to be the prime responsibility of the project proponent. However, the Wereda Council and the people could collaborate within their capacity for the effective implementation of the measures. The summary of the points of the consultative meetings for each of the Weredas is presented below.



A summary of the Consultation at Wereda Level is given in **Table 7.2:**

Date/ Venue of Consultation	Consulted		Summary of Consultation	
	Organisation	Official/ Position	Positive Impacts	Negative Impacts
14 August 07 Office of the Administrator at Fital the Wereda capital	Yaya Gulele Wereda Council	Eight Wereda Council Members	<ul style="list-style-type: none"> <input type="checkbox"/> Creation of temporary and permanent job opportunities for the local people. <input type="checkbox"/> Diversification of marketing activities of the area. <input type="checkbox"/> Access roads proposed to be constructed will lead to development. The people residing in the low lands will specifically benefit more from the construction of roads. <input type="checkbox"/> The development of access roads shall help to extract valuable natural resources of the Wereda. More areas will benefit at large if the construction of roads includes roads to the Wereda and the capital city of the North Shoa zone. <input type="checkbox"/> Opportunities for the development/ expansion of school and health facilities around the project area. <input type="checkbox"/> It will solve the problem of scarcity of cement supply prevailing at the national level. Since the factory is located near their Wereda, the production of cement will largely benefit them. 	<ul style="list-style-type: none"> <input type="checkbox"/> The project shall displace the people residing within its demarcated area. <input type="checkbox"/> Dust, chemicals and noise from the factory could cause negative impacts upon the immediate environment. <input type="checkbox"/> The negative consequences are expected to be reflected through air pollution, deforestation, disturbance to wildlife, water pollution, decline or elimination of fish resources and health problems especially STDs <input type="checkbox"/> Locals may develop dependence and may look at DMC for solutions to all their problems
15 August 07 Office of the Wereda Administrator	Sululta Wereda Council	Nine Wereda Council Members	<ul style="list-style-type: none"> <input type="checkbox"/> Creation of temporary and permanent job opportunities for the local people. <input type="checkbox"/> The proposed project shall utilize natural resources of the country and assist in development of the country. 	<ul style="list-style-type: none"> <input type="checkbox"/> The project shall lead to environmental pollution like air, water, ecology, etc. <input type="checkbox"/> If the project does not involve the local community and establish a good relationship with them, crime, robbery,



Date/ Venue of Consultation	Consulted		Summary of Consultation	
	Organisation	Official/ Position	Positive Impacts	Negative Impacts
at Chancho the Wereda capital			<p>The Ethiopian cement market shall stabilize leading to a saving of precious foreign exchange.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Basic social amenities such as electricity, telecommunication, and schools around the project area shall be developed and the people will benefit from them. <input type="checkbox"/> Revenue accrual to the State shall increase. The project will accelerate the expansion of urban towns and training of skilled manpower. 	<p>prostitution, etc. in the area may increase.</p> <ul style="list-style-type: none"> <input type="checkbox"/> The project shall lead to inflation. <input type="checkbox"/> Project will contribute to the spread of health problems such as HIV/ AIDS. <input type="checkbox"/> The project shall cause displacement of the local community and this may lead to psychological problems for the displaced. <input type="checkbox"/> Project will result in the depletion of natural resources and lead to water scarcity, deforestation, soil erosion and depletion of wild life.
20 August 07 Office of the Wereda Administrator	Mulo Wereda Council	Ten Wereda Council Members	<ul style="list-style-type: none"> <input type="checkbox"/> As an investment is helpful to bring development at country level, this particular project will also help to develop the Wereda and the surrounding areas. The cement project shall lead to a higher income for the Government. <input type="checkbox"/> It will create employment opportunities. <input type="checkbox"/> It will reduce the scarcity of cement in the country. 	<ul style="list-style-type: none"> <input type="checkbox"/> The smoke and dust particles released from the factory could pollute the air, grass and land resources and this may create problems for the surrounding farmers. <input type="checkbox"/> It may harm the natural resources and ecosystem of the area.
15 August 07 Office of the Wereda Administrator at Enchine the Wereda capital	Adaberga Wereda Council	Eight Wereda Council Members	<ul style="list-style-type: none"> <input type="checkbox"/> It will bring large benefits to the surrounding people and the Wereda. <input type="checkbox"/> It will reduce the scarcity of cement supply in the country. <input type="checkbox"/> It will create job opportunities for the local people. <input type="checkbox"/> It will lead to improved infrastructural facilities to the community like access roads, telecommunications, and water supply. 	<ul style="list-style-type: none"> <input type="checkbox"/> The plant site is located within the Sululta Wereda near Derba town while the raw materials will be extracted from the neighbouring Kebele PA of Handa Weyzero. However, if the raw materials become scarce, the project could expand to Kebeles located within Adaberga Wereda. Blasting during mining may affect the surrounding people. <input type="checkbox"/> The emission of the factory may pollute



Date/ Venue of Consultation	Consulted		Summary of Consultation	
	Organisation	Official/ Position	Positive Impacts	Negative Impacts
			supply.	water and natural resources and harm the health of the people. <input type="checkbox"/> Deforestation and land degradation could also occur.
22 August 07 Office of the Wereda Administrator at Muketurie the Wereda capital	Wichale Wereda Council	Five Wereda Council Members	<input type="checkbox"/> The project will reduce the currently prevailing scarcity of cement supply in the country. <input type="checkbox"/> The project will lead to foreign exchange earnings through export of cement. <input type="checkbox"/> It will create job opportunities for the local people	<input type="checkbox"/> Smoke and dust particles will cause environmental pollution and this will cause health problems to the people residing around the plant and quarry sites for the Kebele and these include Nono, Bole Becho and Becho Fenili PAs.
Remedial measures proposed during Wereda Level Public Consultation: <ul style="list-style-type: none"> <input type="checkbox"/> Contain smoke, dust particles and chemicals discharge and minimize environmental pollution <input type="checkbox"/> Apply modern technology that can minimize the noise and other pollution from the factory. <input type="checkbox"/> To extend the health services to the local residents by constructing hospital or health centre. <input type="checkbox"/> Create awareness among the people to combat the spread of HIV/AIDS and other STDs and provide treatment for patients <input type="checkbox"/> Provide appropriate compensation for the People to be evicted from their land. In addition, project should seek ways and means of restoring their livelihood. <input type="checkbox"/> Create awareness among the people to benefit from project related activities such as trading, etc. <input type="checkbox"/> Develop infrastructure, school, electricity, telecommunications, hospital and the like for the community. <input type="checkbox"/> Seek jointly remedial measures to regulate the unemployment rate in the project area. <input type="checkbox"/> Assist the creation and operation of small and micro institutions. <input type="checkbox"/> Launch reforestation program near the project site. <input type="checkbox"/> The factory should be located far from settlement. <input type="checkbox"/> Community level discussion should continue to jointly identify and recommend corrective measures for the potential problems. This consultation will assist to maintain good relationships between the project and the local community. 				

Table 7.2 : Summary of the Consultation at Wereda Level



7.3.3 CONSULTATION WITH COMMUNITY GROUPS

As a part of the effort to ensure that the views of the local population are incorporated in preparation and subsequent implementation of the project, a series of consultative meetings were held in different parts of the project area. This consultation has attempted to gather qualitative information on perceptions and attitudes towards the proposed project.

In spite of the fact that there were no official engagements made to present the project to those groups previously, there were some people who had some limited knowledge of and mixed expectation from the project. For instance, while some members of the community expressed their worries about displacement and loss of livelihood due to the project, others voted for the project for they believe that that they need to make some sacrifices for national development in general and creation of new employment opportunities in particular. Generally speaking, the attitude of the community towards the proposed project was positive. The list of participants of community level public consultation is enclosed as **Annex 7.2**.

The findings and recommendations of the local communities are presented in **Table 7.3**.



Date/ Venue of Consultation	Consulted		Summary of Consultation	
	Community	Official/ Position	Positive Impacts	Negative Impacts
18 August 07 Derba town	84 Community Members from Derba Gulele Beresa Community	Chairman of Kebele Administration. Minutes recorded by Development Agent of Wereda	<ul style="list-style-type: none"> <input type="checkbox"/> Project shall help the surrounding areas and the country at large. <input type="checkbox"/> It will introduce various developmental activities to the community. <input type="checkbox"/> Many people can get jobs thereby improving their standard of living. <input type="checkbox"/> The cement products could be exported. <input type="checkbox"/> Basic social services like health centres, electricity, telecommunication, and water supply services could be developed. <input type="checkbox"/> Project will lead to urbanization of the area. 	<ul style="list-style-type: none"> <input type="checkbox"/> The project shall displace the farmers from their farmland and houses. <input type="checkbox"/> It will make living more expensive. <input type="checkbox"/> If the project concentrates only on its own profit and does not satisfy the needs of the people, the community will face many challenges. <input type="checkbox"/> If the project does not compensate the project-affected persons and help in restoring their livelihoods properly, the magnitude of poverty will worsen. <input type="checkbox"/> If the project does not give job priority to the surrounding people, the expectations of the local people will not be materialized. The project authorities should not bring labour from outside ignoring the local people on the basis of their skills. <input type="checkbox"/> The local people could be endangered by migrant workers unless their identity is well known. <input type="checkbox"/> The healthy relationship between the people and the project proponent could be affected if issues are not resolved in consultation with the community and their leaders from the Kebele PAs. <input type="checkbox"/> The people could be adversely affected if the project does not extend basic social services for the community.



Date/ Venue of Consultation	Consulted		Summary of Consultation	
	Community	Official/ Position	Positive Impacts	Negative Impacts
				<ul style="list-style-type: none"> <input type="checkbox"/> The inhabitants of Derba are keen that the road proposed for connecting the plant site should pass through Derba town and not bypass it as is being proposed. The town Derba will benefit economically if the existing road alignment through the town is maintained. <input type="checkbox"/> The project will lead to air and water pollution that will negatively affect the community, livestock population and the environment in general. <input type="checkbox"/> It will reduce livestock production in the area. <input type="checkbox"/> The liquid and solid waste coming from the factory will result in soil erosion.
18 August 07 Derba town	89 Community Members from Becho Kidanemihret Community	Chairman of Kebele Administration.	<ul style="list-style-type: none"> <input type="checkbox"/> The people expect to be employed during the construction of the factory. In the future the project should give job opportunities to the community in general and the displaced people. 	<ul style="list-style-type: none"> <input type="checkbox"/> Project displaced people do not get job opportunity in the construction phase of the project. <input type="checkbox"/> People displaced from the plant site are not provided adequate compensation. <input type="checkbox"/> The size of the affected land, which serves, as a basis for valuation of compensation was not correctly measured. <input type="checkbox"/> People who are paid compensation have consumed it and are highly vulnerable to poverty. <input type="checkbox"/> Compensation still to be received by the people whose lands will be affected by the construction of roads though the land is



Date/ Venue of Consultation	Consulted		Summary of Consultation	
	Community	Official/ Position	Positive Impacts	Negative Impacts
				<p>already measured.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Without the consent of the people and the provision of compensation, the project is extracting construction materials from their farmlands.
14 August 07 Muger	50 Community Members from Handa Weizero Community	Chairman of Kebele Administration.	<ul style="list-style-type: none"> <input type="checkbox"/> The people expect that the project will benefit their area. <input type="checkbox"/> The project will develop water supply schemes, health facilities, telecommunication services and other basic necessities of the people. 	<ul style="list-style-type: none"> <input type="checkbox"/> The project will cause problems in the places where material extraction will take place. <input type="checkbox"/> The project will take over farming and grazing lands, which is the basic means of income of the people. <input type="checkbox"/> Wild life could be disturbed in the area. <input type="checkbox"/> The people may not be compensated adequately.



Date/ Venue of Consultation	Consulted		Summary of Consultation	
	Community	Official/ Position	Positive Impacts	Negative Impacts
<p>Remedial Measures Proposed during Community Level Public Consultation</p> <p>Consultative meeting with Derba Gulele Beresa Community</p> <ul style="list-style-type: none"> <input type="checkbox"/> Give professionally recommended remedial measures for the smoke, dust and other chemicals to be released from the factory. <input type="checkbox"/> Give priority in job opportunities to the local people. <input type="checkbox"/> Provide resettlement land for the project affected people. <input type="checkbox"/> The displaced people need to be organized in associations and be engaged in various economic sectors. <input type="checkbox"/> Construct education, health centres, water supply schemes, electricity to the community. <input type="checkbox"/> The government should monitor the potential problems during operation of the plant. <p>Consultative meeting with Becho Kidanemihret Community</p> <ul style="list-style-type: none"> <input type="checkbox"/> The community and specifically the project affected people should get employment priority with the provision of appropriate training for unskilled persons. <input type="checkbox"/> Provide compensation for the people whose lands will be taken by the construction of access roads. <input type="checkbox"/> The extraction of construction materials with out the provision of compensation should immediately be stopped. <input type="checkbox"/> The overall attitude of the community is that the people specifically those whose lands are expropriated did not benefit from the project whereas on the contrary the negative impacts are much higher than the benefit. <p>Consultative meeting with Handa Weizero Community</p> <ul style="list-style-type: none"> <input type="checkbox"/> Provide appropriate and adequate compensation for the affected people. <input type="checkbox"/> Construct social services to the community found in the project area. 				

Table 7.3 : Summary of Community Level Public Consultation

The minutes of the Public Consultations are enclosed as follows:

- Consultation with Adaberga Wereda Officials : **Annex 7.3**
- Consultation with Mulo Wereda Officials : **Annex 7.4**
- Consultation with Sululta Wereda Officials : **Annex 7.5**
- Consultation with Wuchale Wereda Officials : **Annex 7.6**
- Consultation with Yaya Gulele Wereda Officials : **Annex 7.7**



Consultative meetings with Mulo Wereda



Consultative meeting with Adaberga Wereda Council



Consultative meetings with Wichale Werda



Consultative Meetings with the Community of Becho K/mihret



Consultative Meetings with the Community of Handa weizero

7.3.4 CONSULTATION WITH INDIVIDUAL HOUSEHOLDS

The views of the people have been taken during extensive Consultations carried out in the area during the period August 8 –18, 2007. The expectations of the people as well as the proposed remedial measures are almost the same everywhere. The views of the people are summarized and presented below. The minutes of Public Consultation with the communities at the Plant site and the Mining site are enclosed as **Annex 7.8 and 7.9** respectively.

7.3.4.1 Anticipated Positive Impacts of the Project

- The project will create temporary and permanent job opportunities for the people residing around the project area.
- The price of cement could be reduced and market activity could become stable.
- The establishment of the plant will stimulate the growth of the national economy.
- The establishment of the project shall lead to development of infrastructural facilities like access roads, electricity supply, health facilities and social services that can benefit the people.
- Due to the development of associated new businesses the surrounding areas and the Wereda could become economically developed.
- The project will expose the people to new types of technology and enhance education.

7.3.4.2 Anticipated Negative Impacts of the Project

- There is a fear of being undercompensated for any loss of livelihood and of being displaced from their area in case the boundaries of the project or its negative impact reach their villages. This may displace and affect the elder people in particular.
- The project may harm the health conditions particularly the respiratory system of the people and their cattle.
- The project may reduce soil fertility and production. It may result in noise, water, soil, and other environment pollution.
- The currently prevailing scarcity of land may be worsened.



- The local economy could be destabilized and poverty will be intensified

7.3.5 CONSULTATION WITH KEBELE PEASANT ASSOCIATIONS

The Consultation with the Kebele PAs were held during the period August 8 –18, 2007. The views of the PAs are summarized and presented below. The minutes of the Public Consultation with Derba Kebele PA are enclosed as **Annex 7.10**.

7.3.5.1 Anticipated Positive Impacts of the Project

- The project shall contribute to the development effort of the country. The project may be requested to give priority to satisfy the cement demand of the surrounding community.
- Establishment of the project shall create job opportunities for the local people. It can solve the Socio-economic problems of the surrounding communities. The people could be involved in temporary jobs at the project thereby increasing their income level.
- The project will construct various types of infrastructure for its own use and the community can benefit from these. Health facilities, water supply schemes, access roads, veterinary clinics, schools etc could be constructed by the project.
- It could be possible to produce fish and extract sand from the Mughher River.

7.3.5.2 Anticipated Negative Impacts of the Project

- It may displace the farmers. The project may take land without paying compensation.
- There could be air and water pollution due to the plant harming both human and cattle population. Vegetation removal could occur.
- Land could become scarce.
- The proposed project could lead to landslides in the area.



List of Consulted Officials

Sn	Zone	Wereda	Name of the Participant	Position of the Participants	Place of Meeting	Date
1	N/Shoa	Mulo	Getanehe Dame	Wereda Administrator	Mulo Town, Administration office	August 20, 2007
2			Taye Shume Dame	Wereda O.P.D.O Leader		
3			Feyisa Debebe	Wereda People's Organization		
4			Tasaw Lema	O.P.D.O Leader		
5			Bezuayehu Tekle	Wereda Public Health office		
6			Wundeneh Girma	Wereda Finance and Economy Office head		
7			Dereje Sadi	Wereda Health A/Head		
8			Dereje Asefa	Wereda Capacity Building A /Head		
9			Getahun Kebede	Wereda Youth & Sports Affairs Head		
10			Bekele Jimma	Wereda Security head		
1	W/Shoa	Adaberga	Ayele Fikru	Wereda OPDO Office	Enchini Town, Administration office	August 15, 2007
2			Alemu Wami	Wereda Health Officer		
3			Eshetu Begana	Planning Program		
4			Worku Bayissa	Wereda Water Office		
5			Addis Tamire	Wereda Rural Road Office		
6			Zewedu Teferre	Wereda Agricultural Office		
7			Aster Bekele	Wereda Women's Affair		
8			Tollesa Anbesse	Wereda Administrator		
1	N/Shoa	Sululta	Siyom Hailu	Administrator	Chancho Town, Administration office	August 15, 2007
2			Tabor Mekonnen	Wereda OPDO office		
3			Fikadu Mekonnen	V.o.k/b/ office		
4			Dassalgne Rega	OPOLSA Office		
5			Siyoum Mihirka	Rural W/sup Office		
6			Girma Siyoum	Woreda ED.office Team leader		
7			Astawesegne Muleta	RD & Agriculture		
8			Negadh Bedane	B/O Health Office		
9			Sefu Gosa	Youth & Sport		
1	N/Shoa	Yaya Gulele	Teshome Garredew	Wereda Administrator	Fital Town, Administration office	August 14, 2007
2			Tegene Beyene	Water Resource Office		
3			Habtamu Feyissa	Capacity Building office		
4			Wandwasan Bokorce	Wereda Health Office		
5			Meshepha Zewdie	Head Agri & Rural development		
6			Tekla Gudeta	W.E.O		
7			Habtamu Asseffa	Finance and Economy		
8			Gashaw Seyoum	Worda Kabine		
1	N/Shoa	Wichale	Kashun Worku	Administrative Office	Muketuri Town, Administration office	August 22, 2007
2			Ketema Wakjira	Educational office		
3			Daguachew Gitatehw	Exps HEW /Health		
4			Befrle Neda	Representative of W.ARD		
5			Tesfaye Teddese	Water Support Office		



List of Consulted Community Members

Becho K/Mihret Kebele Peasant Association

Sn	Zone	Wereda	Kebele	Name	Position of the Participants	Place of Meeting	Date
1	N/Shoa	Sululta	Becho K/mihret	Anebese Denboba	Elder	Becho K/Mihret	August 18, 2007
2	"	"	"	Negessa Aderu	Elder	"	"
3	"	"	"	Bersese Aderu	Elder	"	"
4	"	"	"	Abebe Gerege	Elder	"	"
5	"	"	"	Tolera Abedu	Elder	"	"
6	"	"	"	Dejene Aderu	Elder	"	"
7	"	"	"	Debebe Gerassu	Elder	"	"
8	"	"	"	Dereba Tera	Elder	"	"
9	"	"	"	Tsiga Gurmu	Elder	"	"
10	"	"	"	Abera Ayele	Kebele Council	"	"
11	"	"	"	Shifera Muleta	"	"	"
12	"	"	"	Dede Wake	"	"	"
13	"	"	"	Girma Ketsiele	"	"	"
14	"	"	"	W/o Aniget Bekela	"	"	"
15	"	"	"	W/o Aberu Raji	Women's Council	"	"
16	"	"	"	W/o Bizu Degefa	Council	"	"
17	"	"	"	W/o Enanu Hafte	Community Member	"	"
18	"	"	"	Ato Girma Ejigu	Elder	"	"
19	"	"	"	Ato Deressa Bekele	Community Member	"	"
20	"	"	"	Ato Birhanu Tolessa	"	"	"
21	"	"	"	W/o Ejigu Gedissa	"	"	"
22	"	"	"	Ato Alemu Belyu	"	"	"
23	"	"	"	W/o Tsige Wekitola	"	"	"
24	"	"	"	W/o Tenagne Hayle	"	"	"
25	"	"	"	Chale Atehu	"	"	"
26	"	"	"	Tesfa Abera	"	"	"

Annex 7.2
Page 2 of 9

Sn	Zone	Wereda	Kebele	Name	Position of the Participants	Place of Meeting	Date
27	N/Shoa	Sululta	Becho K/mihret	Tesome Bekele	Community Member	Becho K/Mihret	August 18, 2007
28	"	"	"	Shifera Adere	"	"	"
29	"	"	"	Fikadu Bekele	"	"	"
30	"	"	"	Gezu Beyssa	"	"	"
31	"	"	"	Girma Ejigu	"	"	"
32	"	"	"	Tesfaye Zewde	"	"	"
33	"	"	"	Sesay Wkijira	"	"	"
34	"	"	"	Mered Mengesha	"	"	"
35	"	"	"	Dereba Legesse	"	"	"
36	"	"	"	Kuma Beta	"	"	"
37	"	"	"	Birhanu Werku	"	"	"
38	"	"	"	Girma Fye	"	"	"
39	"	"	"	Sefua Abera	"	"	"
40	"	"	"	Tegenu Adegna	"	"	"
41	"	"	"	Megerssa Alelmu	"	"	"
42	"	"	"	Bune Ordifa	"	"	"
43	"	"	"	Drereba Konu	"	"	"
44	"	"	"	Diriba Tere	"	"	"
45	"	"	"	Dejene Aderu	"	"	"
46	"	"	"	Dejenu Beyenu	"	"	"
47	"	"	"	Deba Nagi	"	"	"
48	"	"	"	Hayle Mengistu	"	"	"
49	"	"	"	Alemayehu Mile	"	"	"
50	"	"	"	Ayele Bekele	"	"	"
51	"	"	"	Fikadu Ayele	"	"	"
52	"	"	"	Dede Wake	"	"	"
53	"	"	"	Girma Ketsiele	"	"	"
54	"	"	"	Abera Ayele	"	"	"
55	"	"	"	Dejene Bekele	"	"	"
56	"	"	"	Eshete Ayele	"	"	"
57	"	"	"	Nigussu Tefera	"	"	"
58	"	"	"	Dreibsa Korsu	"	"	"
59	"	"	"	Shifera Muleta	"	"	"
60	"	"	"	Bersese Wakeyo	"	"	"
61	"	"	"	Kebede Ersemu	"	"	"
62	"	"	"	Debebe Geressu	"	"	"
63	"	"	"	Birhane Habte	"	"	"



Sn	Zone	Wereda	Kebele	Name	Position of the Participants	Place of Meeting	Date
64	N/Shoa	Sululta	Becho K/mihret	Aberu Raje	N/Shoa	Sululta	Becho K/mihret
65	"	"	"	Bizu Degefa	"	"	"
66	"	"	"	Derade Bistratu	"	"	"
67	"	"	"	Abera Etenu	"	"	"
68	"	"	"	Mirko Welde	"	"	"
69	"	"	"	Erane Aderu	"	"	"
70	"	"	"	Eshetu Mindehu	"	"	"
71	"	"	"	Dereje Hayle	"	"	"
72	"	"	"	Getachew Geble	"	"	"
73	"	"	"	Tsiga Gurmu	"	"	"
74	"	"	"	werekena Deme	"	"	"
75	"	"	"	Aduna Hunde	"	"	"
76	"	"	"	Faye Hunde	"	"	"
77	"	"	"	Ayele Alemu	"	"	"
78	"	"	"	Tolera Abedu	"	"	"
79	"	"	"	Duguma Sede	"	"	"
80	"	"	"	Dereje Birhanu	"	"	"
81	"	"	"	Bizunehe Nigusu	"	"	"
82	"	"	"	Anibesse Denbo	"	"	"
83	"	"	"	Abebe Gerege	"	"	"
84	"	"	"	Deneke Biru	"	"	"
85	"	"	"	Bedede Beyisa	"	"	"
86	"	"	"	Nigessa Aderu	"	"	"
87	"	"	"	Kunbe Welde	"	"	"
88	"	"	"	Segne Tilahun	"	"	"
89	"	"	"	Regassa Denbob	"	"	"



Derba Gulele Beresa Kebele Peasant Association

Sn	Zone	Wereda	Kebele	Name	Position of the Participants	Place of Meeting	Date
1	N/Shoa	Sululta	Derba Gulele Beresa	Deba Megersa	Community Member	Derba Town	August 18, 2007
2	"	"	"	Bedede Gudisa	"	"	"
3	"	"	"	Birhanu Wedaju	"	"	"
4	"	"	"	Kebede Feysa	"	"	"
5	"	"	"	Kebede Werku	"	"	"
6	"	"	"	Tolessa Tulu	"	"	"
7	"	"	"	Legesse Abebe	"	"	"
8	"	"	"	Tesema Korecha	"	"	"
9	"	"	"	Dereje Waketolla	"	"	"
10	"	"	"	Aye Farange	"	"	"
11	"	"	"	Mulu Robi	"	"	"
12	"	"	"	Belachew Bogale	"	"	"
13	"	"	"	Belay Minda	"	"	"
14	"	"	"	Tamisasa Gudeta	"	"	"
15	"	"	"	Sheru Gelelta	"	"	"
16	"	"	"	Getahun W/Senbet	"	"	"
17	"	"	"	Selomon Ayele	"	"	"
18	"	"	"	Dejenne Dereba	"	"	"
19	"	"	"	Egersa Bere	"	"	"
20	"	"	"	Abde Debele	"	"	"
21	"	"	"	Abedu Muhamed	"	"	"
22	"	"	"	Derba Nigusse	"	"	"
23	"	"	"	Fikadu Tadese	"	"	"
24	"	"	"	W/senbet werdofa	"	"	"
25	"	"	"	Gadissa Werku	"	"	"
26	"	"	"	Taressa Dinku	"	"	"
27	"	"	"	Gadissa Haye	"	"	"
28	"	"	"	Girma Feysa	"	"	"
29	"	"	"	Dejen Shume	"	"	"
30	"	"	"	Shifera Arera	"	"	"
31	"	"	"	Mekonen Tura	"	"	"
32	"	"	"	Mekonnen Girma	"	"	"
33	"	"	"	Chala Muleta	"	"	"
34	"	"	"	Dirba Debesso	"	"	"
35	"	"	"	Zewde Belachew	"	"	"

Annex 7.2
Page 5 of 9

Sn	Zone	Wereda	Kebele	Name	Position of the Participants	Place of Meeting	Date
36	N/Shoa	Sululta	Derba Gulele Beresa	Dejenu Tesfaye	Community Kebele organizer	Derba Town	August 18, 2007
37	"	"	"	Hayle Demisse	Security	"	"
38	"	"	"	Abebe Tefera	Community Members	"	"
39	"	"	"	Hamisa Tafesse	"	"	"
40	"	"	"	Haile Debela	"	"	"
41	"	"	"	Bizuneh Gebre	"	"	"
42	"	"	"	Dejenu Mumcha	"	"	"
43	"	"	"	Diriba Deme	"	"	"
44	"	"	"	Shiferaw robele	"	"	"
45	"	"	"	Erea Kebede	"	"	"
46	"	"	"	Bayissa Gelelcha	"	"	"
47	"	"	"	Tessema Regassa	"	"	"
48	"	"	"	Gelenu Gudissa	"	"	"
49	"	"	"	Etagenehu G/Sillase	"	"	"
50	"	"	"	Dereje Hursa	"	"	"
51	"	"	"	Abaynehe Mamo	"	"	"
52	"	"	"	Eshete Jete	"	"	"
53	"	"	"	Girma Muleta	"	"	"
54	"	"	"	Nigusse Feyissa	"	"	"
55	"	"	"	Diriba Kebede	"	"	"
56	"	"	"	Birhanu Deba	"	"	"
57	"	"	"	Alemayehu Meskele	"	"	"
58	"	"	"	Tike Mamo	"	"	"
59	"	"	"	Asefa Tadassa	"	"	"
60	"	"	"	Werku Tolla	"	"	"
61	"	"	"	Nigusse Alemu	"	"	"
62	"	"	"	Kassa Dade	"	"	"
63	"	"	"	Fikadu Beyanna	"	"	"
64	"	"	"	Mulu Werku	"	"	"
65	"	"	"	Jiru Jimma	"	"	"
66	"	"	"	Abebe Tesfaye	"	"	"
67	"	"	"	Birhanu Reta	"	"	"
68	"	"	"	Derib Aredo	"	"	"
69	"	"	"	Teklu Mamo	"	"	"



Annex 7.2
Page 6 of 9

Sn	Zone	Wereda	Kebele	Name	Position of the Participants	Place of Meeting	Date
70	N/Shoa	Sululta	Derba Gulele Beresa	Dessalegne Lemmesa	Community Members	Derba Town	August 18, 2007
71	"	"	"	Tesfa Wendimu	"	"	"
72	"	"	"	Demere Alemu	"	"	"
73	"	"	"	Tesfaye Anata	"	"	"
74	"	"	"	Gezahegne Eshete	"	"	"
75	"	"	"	Zewde Belachew	"	"	"
76	"	"	"	Getachew Seme	"	"	"
77	"	"	"	Fikadu Adere	"	"	"
78	"	"	"	Werdofe Goshu	"	"	"
79	"	"	"	Mengistu Mekonnen	"	"	"
80	"	"	"	Dejennu Mekonnen	"	"	"
81	"	"	"	Getanehe Rebo	"	"	"
82	"	"	"	Ayele Tulu	"	"	"
83	"	"	"	Tegenu Aweke	"	"	"
84	"	"	"	Girma Werku	"	"	"



Handa Weizero Kebele Peasant Association

Sn	Zone	Wereda	Kebele	Name	Position of the Participants	Place of Meeting	Date
1	NorthShewa	Sululeta	Handa Weyizero	Arare Gamado	Community Member	Muger	August 13,2007
2	NorthShewa	Sululeta	Handa Weyizero	Zenebaba Hunede	"	"	"
3	NorthShewa	Sululeta	Handa Weyizero	Jimma Robi	"	"	"
4	NorthShewa	Sululeta	Handa Weyizero	Fikadu Negash	"	"	"
5	NorthShewa	Sululeta	Handa Weyizero	Bokuna Dabela	"	"	"
6	NorthShewa	Sululeta	Handa Weyizero	Faayisa Bakalu	"	"	"
7	NorthShewa	Sululeta	Handa Weyizero	Bekalu Hareso	"	"	"
8	NorthShewa	Sululeta	Handa Weyizero	Gada Daba	"	"	"
9	NorthShewa	Sululeta	Handa Weyizero	Mogese Duguma	"	"	"
10	NorthShewa	Sululeta	Handa Weyizero	Gelaye Balami	"	"	"
11	NorthShewa	Sululeta	Handa Weyizero	Dda Batu	"	"	"
12	NorthShewa	Sululeta	Handa Weyizero	Feyisa Raba	"	"	"
13	NorthShewa	Sululeta	Handa Weyizero	W/o Bezu Bekele	"	"	"
14	NorthShewa	Sululeta	Handa Weyizero	W/o Bezu Gareso	"	"	"
15	NorthShewa	Sululeta	Handa Weyizero	Bedane Bogi	"	"	"
16	NorthShewa	Sululeta	Handa Weyizero	Getu Adane	"	"	"
17	NorthShewa	Sululeta	Handa Weyizero	Bekele Ganfa	"	"	"
18	NorthShewa	Sululeta	Handa Weyizero	Gemechu Ayana	"	"	"
19	NorthShewa	Sululeta	Handa Weyizero	Gelaye Balamiine	"	"	"
20	NorthShewa	Sululeta	Handa Weyizero	Fiqere Motuma	"	"	"
20	NorthShewa	Sululeta	Handa Weyizero	Beneya Biratu	"	"	"

**Handa Weizero Kebele Peasant Association**

Sn	Zone	Wereda	Kebele	Name	Position of the Participants	Place of Meeting	Date
21	NorthShewa	Sululeta	Handa Weyizero	Dida Dame	"	"	"
22	NorthShewa	Sululeta	Handa Weyizero	Daneba Wemi	"	"	"
23	NorthShewa	Sululeta	Handa Weyizero	Ejaresa Boki	"	"	"
24	NorthShewa	Sululeta	Handa Weyizero	Gemechu Ayana	"	"	"
25	NorthShewa	Sululeta	Handa Weyizero	Feyisa Mumecha	"	"	"
26	NorthShewa	Sululeta	Handa Weyizero	Girema Tolosa	"	"	"
27	NorthShewa	Sululeta	Handa Weyizero	Hurisa Daba	"	"	"
28	NorthShewa	Sululeta	Handa Weyizero	Diriba Hunede	"	"	"
29	NorthShewa	Sululeta	Handa Weyizero	Tafa Gebisa	"	"	"
30	NorthShewa	Sululeta	Handa Weyizero	Bedada Begi	"	"	"
31	NorthShewa	Sululeta	Handa Weyizero	Tesefaye Dame	"	"	"
32	NorthShewa	Sululeta	Handa Weyizero	Tolosa Hurisa	"	"	"
33	NorthShewa	Sululeta	Handa Weyizero	Tamerat Hunede	"	"	"
34	NorthShewa	Sululeta	Handa Weyizero	Germa Katafa	"	"	"
35	NorthShewa	Sululeta	Handa Weyizero	Shifera Dureso	"	"	"
36	NorthShewa	Sululeta	Handa Weyizero	Feyisa Tola	"	"	"
37	NorthShewa	Sululeta	Handa Weyizero	Tadu Gamachu	"	"	"
38	NorthShewa	Sululeta	Handa Weyizero	Mulugeta Goda	"	"	"
39	NorthShewa	Sululeta	Handa Weyizero	Bayisa Arado	"	"	"
40	NorthShewa	Sululeta	Handa Weyizero	Aragawu Sima	"	"	"
41	NorthShewa	Sululeta	Handa Weyizero	Asefa Debela	"	"	"
42	NorthShewa	Sululeta	Handa Weyizero	Degu Bonya	"	"	"



Handa Weizero Kebele Peasant Association

Sn	Zone	Wereda	Kebele	Name	Position of the Participants	Place of Meeting	Date
43	NorthShewa	Sululeta	Handa Weyizero	Fayisa Biqila	"	"	"
44	NorthShewa	Sululeta	Handa Weyizero	Hayilu Bayu	"	"	"
45	NorthShewa	Sululeta	Handa Weyizero	w/o Mulu Alemayehu	"	"	"
46	NorthShewa	Sululeta	Handa Weyizero	Ibisa Araresa	"	"	"
47	NorthShewa	Sululeta	Handa Weyizero	Eshetu cholo	"	"	"
48	NorthShewa	Sululeta	Handa Weyizero	W/o Debitu Araresa	"	"	"



Consultation with Adaberga Wereda Officials

Mid Day International Consulting Engineers
Socio-Economic Study (2007)

Derba-Midroc Consultant PLC

DERBA MIDROC CEMENT PROJECT

Consultation Meeting With Wereda Offices

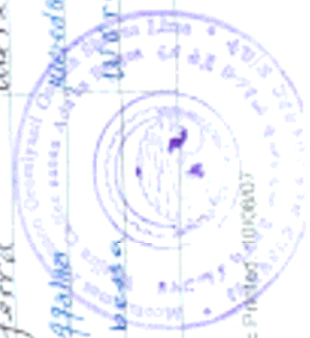
Zone West Shee Wereda Adaberga PA/Kebele _____

Place of the Meeting: At Adaberga Wereda Administration Office

Date: 09/12/19

Time: 4:05:00

No.	Name	Position of the Participant	Telephone/Fax/Email	Signature
1	Ayele Fikru	wereda E.P.D-o Office	011-286 04 35	
2	Alemu Wami	wereda Health officer	011-2860033	
3	Eshetu Beyna	Planning program	011-2860003	
4	Worqu Beynala	Wereda Water Office	011-2860298	
5	Abdis Fawwaz	Wereda Rural Road office	011-286-0399	
6	Zewdu Teferro	Wereda Agriculture office	011-286-0007	
7	Aster Baggalo	Wereda Women's Affairs	011-28-60-250	
8	Tereza Ambessa	Wereda Administrators	011-28-60-002	



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Consultation with Mulo Wereda Officials

Mid-Day International Consulting Engineers
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Derba-Midroc Cement PLC.

DERBA MIDROC CEMENT PROJECT

Consultation Meeting With Wereda Offices

Zone North Shewa Wereda Mulo PAK/Kebele Hoja-tulo-01
 Place of the Meeting: Administration Office
 Date: August, 20/2007
 Time: 2:40 PM

No.	Name	Position of the Participant	Telephone/Fax/Email	Signature
1	Getaach Dema	Adm. Kebele	0912133696	[Signature]
2	Taye Shume Dam	O.P.O. Kebele	0911773269	[Signature]
3	Feyyisa Debele	Wereda People's Org. ^{Adm.}	0911774312	[Signature]
4	Tassew Lema	O.P.O. Kebele	0911333534	[Signature]
5	Sebastien Tekle	Undamored P.B. Office	09-12-07-47-81	[Signature]
6	Mudanech Gurma	Ford. Eco. Dev. Office	0911 082384	[Signature]
7	Deraje Assef	Wereda Health Office	0911 800920	[Signature]
8	Deraje Assef	Wereda Capacity Building		[Signature]
9	Gelahun Kebele	Wereda Youth Sport Affairs	09-11-774290	[Signature]
10	Dieteru Tina	Office Head		[Signature]

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Consultation with Mulo Wereda Officials

LH13-Midroc Cement PLC

Mid-Day International Consultants Engineers
Socio-Economic Study (2007)

DERBA MIDROC CEMENT PROJECT

Consultation Meeting With Wereda Offices

Minutes of the Discussions

የመመያያ ክፍለ-ወጪዎች

1. የሚደረገው ስራዎች ተጠቃሚ ማዕከላት ለሕዝብ ጥቅም ላይ ማድረግ
2. የሚደረገው ስራዎች ተጠቃሚ ማዕከላት ለሕዝብ ጥቅም ላይ ማድረግ ማለትም ለመሬት ማህበራዊ እና ለሕዝብ ጥቅም ላይ ማድረግ ማለት ነው
3. ገንዘብ ለመተግበር ማዕከላት የሚገኙት የመሬት ስራዎች

የገንዘብ ስራዎች ለሕዝብ ጥቅም ላይ ማድረግ ማለትም ለመሬት ማህበራዊ እና ለሕዝብ ጥቅም ላይ ማድረግ ማለት ነው። ለመሬት ማህበራዊ እና ለሕዝብ ጥቅም ላይ ማድረግ ማለትም ለመሬት ማህበራዊ እና ለሕዝብ ጥቅም ላይ ማድረግ ማለት ነው።

አጠቃላይ የሕዝብ ጥቅም ላይ ማድረግ ማለትም ለመሬት ማህበራዊ እና ለሕዝብ ጥቅም ላይ ማድረግ ማለት ነው። ለመሬት ማህበራዊ እና ለሕዝብ ጥቅም ላይ ማድረግ ማለት ነው።

የኃይማኖት ጥቅም

- ለኃይማኖት ጥቅም ላይ ማድረግ ማለትም ለመሬት ማህበራዊ እና ለሕዝብ ጥቅም ላይ ማድረግ ማለት ነው። ለመሬት ማህበራዊ እና ለሕዝብ ጥቅም ላይ ማድረግ ማለት ነው።

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Consultation with Mulo Wereda Officials

D/M/DC-Midroc Cement PLC M/Day International' Constr g Engineers
Socio-Economic Study (2007)


DERBA MIDROC CEMENT PROJECT

Consultation Meeting With Wereda Offices


Minutes of the Discussions

- የዞራ ስፔሪ ማከፋፈል
- በአሁኑ ወቅት በአገር ቤት ውስጥ የሚፈጠሩ ነፍተኛ የሲሚንት ፍጥነት ማቀናጀት
- ንግድ ማከፈት በአሁኑ ወቅት ለመንግስት ነፍተኛ የዞራ ገቢ ጥባቢ ለማስፈን ነፍተኛ የሚያስጠግን ጉዳይ
- ከፋብሪካው የሚመጡ ጭዳ እና ብጫ የአካባቢውን ጥገና ፣ ሣሪ እና መሬት ለከፍተኛ ማቆላለጥ ማቆላለጥ ገቢውን ለማግኘት ለቆላለጥ ማቆላለጥ
- በአካባቢው በሚገኘው የተፈጥሮ ህብት እና ብዛት ለማግኘት ለጉዳይ ለቆላለጥ ማቆላለጥ ገንዘብ ለመቀነስ መውጣት የሚገባው የመሬት ስርዓት ማቆላለጥ
- ፋብሪካው የአካባቢውን የተፈጥሮ ህብት በማግኘት ህድህድ ለማግኘት
- በፋብሪካው ምክንያት ለከፍተኛ የሚፈጠሩ የአካባቢ ብክለት ፍንዳ ለመቀነስ የሚያስፈልጉ ቴክኖሎጂዎችን መውጣት
- ፋብሪካው የተፈጥሮ ህብትን የሚንጠግጥን ንግድ ማከፈት ለማግኘት

በከፍተኛ ስፔሪ ማከፈት ለአገር ገቢ ሆነ ለአካባቢው ነፍተኛ ማቆላለጥ ያለው መሆኑን ገልጸው ማሳሰብ ነፍተኛ ንግድ ማከፈት በአካባቢው ለማግኘት ለቆላለጥ ገንዘብ ለመቀነስ የሚያስፈልጉ መንገድ ለመፍለግ የሚገባው መሆኑን አሳይተዋል።



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Consultation with Sululta Wereda Officials

Mid-Day International Consulting Engineers
Socio-Economic Study (2007)

DERBA MIDROC CEMENT PROJECT

Consultation Meeting With Wereda Offices



Zone North Shewa Wereda Sululta PA/Kebele Chacha
 Place of the Meeting: Wereda Administration office
 Date: 9/11/19 E.C.
 Time: 10:30

No.	Name	Position of the Participant	Telephone/Fax/Email	Signature
1	Sigam Maulu	Administrator	0911337940	
2	Tabor Terehanna	Wereda oppo office	0111820567	
3	Fikadu Mekonnen	V.O. K/b office	0111880049	
4	Dabalegn Rega	OPOLSA office	0111880252	
5	Sigam mirika	Wereda W/sup office	0911100126	
6	Girma Sigam	Wereda Ed. office	0911932289	
7	Afawesqne mola	R.D. & Agr. Culture		
8	Negash Bedane	Pop Health office	0911722257	
9	Se fu Gosa	Youth & Sports	0912114992	



Derba-Midroc Cement PLC

Mid-Day International Consulting Engineers
Socio-Economic Study (2007)

DERBA MIDROC CEMENT PROJECT

Consultation Meeting With Wereda Offices

Minutes of the Discussions

ስለደርባ/ ሚደሮስ/ ሊሞንቶ/ ናወይስት/ ፋብሪካ ናቸዎች ገዳት
ጳጳራቸው/ ማሳገጫ/ ለፊ/ የወላይ/ ግብጽ/ የተወሰደበት/
የሚያስገኘው/ ናቸዎች

- 1- ለአገልግሎት ለሰጠው/ የሥራ ጉዳይ/ ይጨምራል
- 2- የሰጠው/ ገቢ/ ይሳይዳል
- 3- ለአገልግሎት ለሰጠው/ ለሰጠው/ ለሰጠው/ ይሰጣል/ የሰጠው/ ለሰጠው
ሰጠው/ ገቢ/ የሰጠው/ ለሰጠው/ ናቸዎች/ ለፊ/ ይሰጣል
- 4- ኃገራት/ ናቸዎች/ ለሰጠው/ ለሰጠው/ ናቸዎች/ ለፊ/ ይሰጣል
- 5- የሰጠው/ ለሰጠው/ የሰጠው/ የሰጠው/ ይሰጣል/ ለሰጠው/ ይሰጣል
- 6- የሰጠው/ የሰጠው/ ለሰጠው/ ለሰጠው/ ይሰጣል
- 7- የሰጠው/ ለሰጠው/ ይሰጣል
- 8- የሰጠው/ ለሰጠው/ ለሰጠው/ ለሰጠው/ ይሰጣል/ የሰጠው/ ይሰጣል
ለሰጠው/ የሰጠው/ ይሰጣል

- 1- የሰጠው/ ለሰጠው (አድርጎት : ሰጠው : ለሰጠው : ለሰጠው)
- 2- የሰጠው/ ለሰጠው/ ለሰጠው/ ለሰጠው/ ለሰጠው/ የሰጠው/ የሰጠው
ለሰጠው/ ለሰጠው : ለሰጠው/ ለሰጠው/ ለሰጠው/ ለሰጠው/ ለሰጠው
ለሰጠው/ ለሰጠው : ለሰጠው/ ለሰጠው/ ለሰጠው/ ለሰጠው/ ለሰጠው
- 3- የሰጠው/ ለሰጠው/ ይሰጣል
- 4- የሰጠው/ ለሰጠው/ (የሰጠው/ ለሰጠው) ለሰጠው/ ለሰጠው
- 5- የሰጠው/ ለሰጠው : ለሰጠው/ ለሰጠው ::
- 6- ለሰጠው/ የሰጠው/ ለሰጠው/ የሰጠው
- 7- ለሰጠው/ ለሰጠው/ ለሰጠው : የሰጠው/ ለሰጠው/ ናቸዎች
- 8- የሰጠው/ ለሰጠው/ ለሰጠው/ ለሰጠው/ የሰጠው/ የሰጠው/ የሰጠው
የሰጠው/ ለሰጠው : ለሰጠው/ ለሰጠው/ ለሰጠው/ ለሰጠው/ ለሰጠው

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Consultation with Wuchale Wereda Officials

Derba-Midroc Cement PLC.
160-Day Environmental Consulting Engineers
Socio-Economic Study (2007)

DERBA MIDROC CEMENT PROJECT

Consultation Meeting With Wereda Offices

Zone Nayih shawa Wereda Wuchale PAMKebele _____

Place of the Meeting Wereda Administrative office

Date : 16/12/1999 E.C

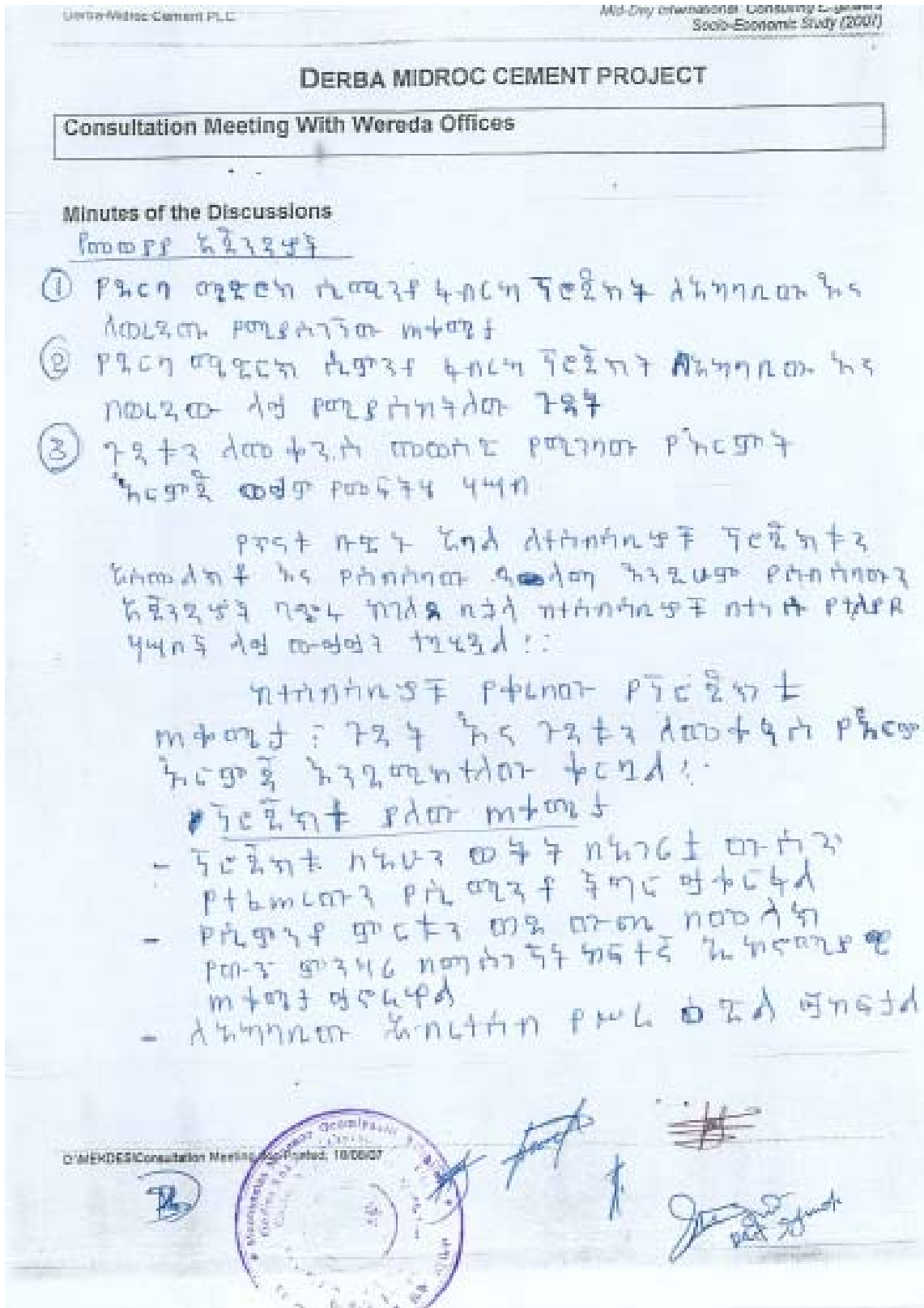
Time : 4:30 10:30 a.m

No.	Name	Position of the Participant	Telephone/Fax/Email	Signature
1	<u>Kession Makku</u>	<u>Adminstrator</u>	<u>0111340005</u>	
2	<u>Ketoma Makjira</u>	<u>educational offic</u>	<u>011134016</u>	
3	<u>Wagachaw Yifateku</u>	<u>exps HEW/Health</u>	<u>0111340300</u>	
4	<u>Behde Neda</u>	<u>Representative of W.ARD</u>	<u>0911033569</u>	
5	<u>Tetame Tedesse</u>	<u>Water Suppln office</u>	<u>0111340328</u>	
6	<u>Ilaktamu Denboba</u>	<u>NDI Smirn</u>	<u>0911462655</u>	





Consultation with Wuchale Wereda Officials





Consultation with Wuchale Wereda Officials

Derba-Midroc Cement PLC Mid-Day International Consulting Eng'g
Socio-Economic Study (S)

DERBA MIDROC CEMENT PROJECT

Consultation Meeting With Wereda Offices

Minutes of the Discussions






ኃይሌንቱ የሚያስጠናቅቅ ጉዳይ

- ከፋብርካታው የሚመጡ ግድብ ከፍተኛ የኤሌክትሪክ ብቅጠት ያስጠናቅቃል ማህንጃር በአካባቢው ሕዝብ ላይ ጠቀሜታ ነው። በዚህ ጉዳይ ላይ የተደረገው ጥናት ለሚገኝ አካባቢው ከፍተኛ ተግባር ማድረግ አለበት። በዚህ ጉዳይ ላይ የተደረገው ጥናት ለሚገኝ አካባቢው ከፍተኛ ተግባር ማድረግ አለበት።

ጉዳቱን ለመቀናጠል መወሰን ያለገባቸው የክርምት ክርምት ግድብ

- በኃይሌንቱ ግድብ ላይ ለሚገኙ ጉዳዮች ላይ ገንዘብ ከፍተኛ ጥረት መስጠት አለበት።
- ፋብርካታው ላይ የተደረገው ጥናት ለሚገኝ አካባቢው ከፍተኛ ተግባር ማድረግ አለበት።
- ኃይሌንቱ ግድብ ላይ ለሚገኙ ጉዳዮች ላይ ገንዘብ ከፍተኛ ጥረት መስጠት አለበት።

በአካባቢው ተከታታይ ጥናት ኃይሌንቱ ላይ ለሚገኙ ጉዳዮች ላይ ገንዘብ ከፍተኛ ጥረት መስጠት አለበት። ጉዳቱን ለመቀናጠል መወሰን ያለገባቸው የክርምት ክርምት ግድብ ላይ ለሚገኙ ጉዳዮች ላይ ገንዘብ ከፍተኛ ጥረት መስጠት አለበት።



Consultation with Yaya Gulele Wereda Officials

Derba Midroc Cement PLC
MoyDay International Consulting Engineers
Socio-Economic Study (2007)

DERBA MIDROC CEMENT PROJECT

Consultation Meeting With Wereda Offices

Zone Alorta Shoo (Oromia) Wereda Yaya Gulele RA-Kobele

Place of the Meeting Wereda Administration Office

Date 21/2/99

Time 5:30

No.	Name	Position of the Participant	Telephone/Fax/E-mail	Signature
1	Teshome Gherredem	Wereda Administrator	0111600261 011160003	
2	Tezene Beyene	water resource office	011160166	
3	Habtamu Fekisse	Capacity building office	011160001	
4	Wendusian Bokore	Wereda Health office	011160017	
5	Melkessa Zerdis	Head. ARI & R/Waterworks	011160021	
6	Tekid Gudeta	U.E.O.	011160011/13	
7	Habtamu Azeffu	Fairness & Economic	011160015	
8	Bashaw Seyum	wereda kobele	011160020	

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Consultation with Yaya Gulele Wereda Officials

#3. 08-12-99

ቀላ: 7996

- 1. የፍትህ ፀረ ግንዛቤ ሰጪ ኃላፊ: አቶ/ፖ. አብበሁ ገሰ
- 2. ግንባታ: ደብዳቤ ሰጪ ለ: ዳ. አብበሁ ገሰ
- 3. ግንባታ: ደብዳቤ ሰጪ ለ: ዳ. አብበሁ ገሰ
- 4. ግንባታ: ደብዳቤ ሰጪ ለ: ዳ. አብበሁ ገሰ
- 5. ግንባታ: ደብዳቤ ሰጪ ለ: ዳ. አብበሁ ገሰ
- 6. ግንባታ: ደብዳቤ ሰጪ ለ: ዳ. አብበሁ ገሰ
- 7. ግንባታ: ደብዳቤ ሰጪ ለ: ዳ. አብበሁ ገሰ
- 8. ግንባታ: ደብዳቤ ሰጪ ለ: ዳ. አብበሁ ገሰ
- 9. ግንባታ: ደብዳቤ ሰጪ ለ: ዳ. አብበሁ ገሰ

- 1. የፍትህ ፀረ ግንዛቤ ሰጪ ኃላፊ: አቶ/ፖ. አብበሁ ገሰ
- 2. ግንባታ: ደብዳቤ ሰጪ ለ: ዳ. አብበሁ ገሰ
- 3. ግንባታ: ደብዳቤ ሰጪ ለ: ዳ. አብበሁ ገሰ



ተጠቅሞት: የፍትህ ፀረ ግንዛቤ ሰጪ ኃላፊ: አቶ/ፖ. አብበሁ ገሰ

የፍትህ ፀረ ግንዛቤ ሰጪ ኃላፊ: አቶ/ፖ. አብበሁ ገሰ

ግንባታ: ደብዳቤ ሰጪ ለ: ዳ. አብበሁ ገሰ



Consultation with Yaya Gulele Wereda Officials

- በወንጌ: የሥራ: የገንዘብ: ኪነ-ጥበብ: የግንባታ ስራ: የግንባታ ስራ: የግንባታ ስራ:
- ገቢ ለማግኘት: በወንጌ: ኪነ-ጥበብ: የግንባታ ስራ: ግንባታ ስራ: ግንባታ ስራ: ግንባታ ስራ:
- በህገመንግሥት: ኪነ-ጥበብ: የግንባታ ስራ: የግንባታ ስራ: የግንባታ ስራ: የግንባታ ስራ:
- 3. ኪነ-ጥበብ: የግንባታ ስራ: የግንባታ ስራ: የግንባታ ስራ: የግንባታ ስራ: የግንባታ ስራ:
- ኪነ-ጥበብ: የግንባታ ስራ: የግንባታ ስራ: የግንባታ ስራ: የግንባታ ስራ: የግንባታ ስራ:
- የግንባታ ስራ: የግንባታ ስራ: የግንባታ ስራ: የግንባታ ስራ: የግንባታ ስራ: የግንባታ ስራ:
- በኪነ-ጥበብ: የግንባታ ስራ: የግንባታ ስራ: የግንባታ ስራ: የግንባታ ስራ: የግንባታ ስራ:
- በኪነ-ጥበብ: የግንባታ ስራ: የግንባታ ስራ: የግንባታ ስራ: የግንባታ ስራ: የግንባታ ስራ:
- በኪነ-ጥበብ: የግንባታ ስራ: የግንባታ ስራ: የግንባታ ስራ: የግንባታ ስራ: የግንባታ ስራ:



Handwritten signatures and notes in Amharic script, including names like 'በገቢ ለማግኘት' and 'የግንባታ ስራ'.



Minutes of Public Consultation with the Communities at the Plant site

DERBA MIDROC CEMENT PROJECT

Consultation Meeting With Community Members

Date: 12-12-99 Time: _____

Place of the Meeting: DF 181/99441

Zone: D/189 Woreda: 2244 P.A. Kebele: _____

No.	Name	Position/Occupation of the Participant	Village	Signature
1	Abba A. H. H. H.	Ashanic	Yoc 112	
2	H. H. H. H.	"		
3	" " " "	"		
4	" " " "	"		
5	ONE H. H. H.	"		
6	" " " "	SHP Ashanic		
7	" " " "	" "		
8	" " " "	" "		
9	" " " "	Paic H. H. H.		

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Minutes of Public Consultation with the Communities at the Plant site

Derba Midroc Cement P.L.C

Derba Midroc Cement P.L.C
Zooch-Fabrikstrasse, 54119 (Duisburg)

DERBA MIDROC CEMENT PROJECT

Consultation Meeting With Community Members

Zone: North Shewa Woreda: Sululta Panchayat: Becho klmihere

Place of the Meeting: Becho klmihere PA Office

Date: 12/10/19

Time: _____

No.	Name	Position/Occupation of the Participant	Address	Signature
1	<u>Hf Zaimb Saim</u>	<u>PA Office</u>		
2	<u>" Saim Zaim</u>	<u>"</u>		
3	<u>" Zaim Zaim</u>	<u>"</u>		
4	<u>" Zaim Zaim</u>	<u>"</u>		
5	<u>" Zaim Zaim</u>	<u>"</u>		
6	<u>" Zaim Zaim</u>	<u>"</u>		
7	<u>" Zaim Zaim</u>	<u>"</u>		
8	<u>" Zaim Zaim</u>	<u>"</u>		
9	<u>" Zaim Zaim</u>	<u>"</u>		

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Minutes of Public Consultation with the Communities at the Plant site

Derba-Midroc Cement PLC

Mid-Day International Consulting Engineers
Socio-Economic Study (2007)

DERBA MIDROC CEMENT PROJECT

Consultation Meeting With Community Members

Points of the Discussions

- ሀ) ናርጂክቱ የሚያሰነጥለው ጉዳይ
- በናርጂክቱ ምክንያት ከመሬታቸው የተፈናቀሉ ሰዎች በፋብሪካው የግንኙነት ሥራ ላይ የሥራ ሰደል ከለማግኘታቸው
 - በፋብሪካው የግንኙነት ሥራ ለተፈናቀሉ ሰዎች ተመካካሪ ግዛ ለመስጠት እና የተከናወነው የመሬት ልዩነት ለህግ ይደለም
 - ከመሬታቸው የተፈናቀሉ ሰዎች የተሰጠባቸውን ግዛ መሬታቸውን በአገልግሎት ወይ ደግሞ ከገንዘብ መሠረታዊ ወይም ለሌሎች ጥያቄዎች የተጋለጡ መሆናቸው
 - በመንገድ ምክንያት አገልግሎት ተሰጦት መሬታቸው ለተለየ ላይቸው ሰዎች እንዲሁን ከገንዘብ ከሌለው ሁኔታ
 - በግንባታ ሰዎች ላይ የገንዘብ መሬት ለመስጠት ወይንም የሚገኝውን ክፍያ መጠየቅ እና ለግንኙነት የሚሆን ማጠቃለያ (ገቢናቲ) ከየቆይታ ከወጥቶ መጠቀም ፡፡
- ለ) ናርጂክቱ የሚያሰነጥለውን ጉዳይ ለመቀነስ መመሪያዎች
- የአገልግሎት አዋጅ በተለይ በናርጂክቱ ምክንያት የተፈናቀሉ ሰዎች በግንኙነት ሥራ ላይ እና በፋብሪካው ውስጥ ተቀምጦ የሚሰሩ ሰዎች ላይ በመገናኛ ፡፡ እነዚህ ሰዎች ለሥራው ከሌለው እና ተመካካሪ አገልግሎት ላይ ለመስጠት እንዲሁን በተለያዩ መንገዶች ለመስጠት እንዲቻል
 - በናርጂክቱ የመንገድ ሥራ ምክንያት ከገንባታ ሰዎች አገልግሎት ተሰጦት መሬታቸው ለተለየ ላይቸው ሰዎች የገንዘብ ከገንዘብ ከሌለው ሁኔታ
 - በተለይ ለሌሎች ሰዎች ላይ የገንዘብ መሬት ለመስጠት እና የግንኙነት ሥራ ላይ የሚሰሩ ሰዎች (ገቢናቲ) ለማወቅ የሚከናወኑ የቆይታ ሥራዎች
 - የአገልግሎት አዋጅ በተለይ በናርጂክቱ ምክንያት የተፈናቀሉ ሰዎች በግንኙነት ሥራ ላይ እና በፋብሪካው ውስጥ ተቀምጦ የሚሰሩ ሰዎች ላይ በመገናኛ ፡፡ እነዚህ ሰዎች ለሥራው ከሌለው እና ተመካካሪ አገልግሎት ላይ ለመስጠት እንዲሁን በተለያዩ መንገዶች ለመስጠት እንዲቻል





Minutes of Public Consultation with the Communities at the Plant site

ቀን - 12-12-99 ዓ.ም

ቁ. (No.)	ስም (Name)	የአድራሻው አድራሻ (Address)
1	አቶ ደጃጌ ባቶ	ግብርብ
2	" አቶ አቶ አቶ	ግብር
3	" አቶ አቶ አቶ	"
4	" ደረጃ ገብረ	"
5	" ደረጃ ገብረ	"
6	" ገብረ ገብረ	"
7	" ገብረ ገብረ	"
8	" ደብረ ገብረ	"
9	ወ/ሮ ገብረ ገብረ	"
10	" ገብረ ገብረ	"
11	" ገብረ ገብረ	"
12	አቶ ደጃጌ ባቶ	"
13	" አቶ አቶ አቶ	"
14	" ግብር ገብረ	"
15	" አቶ አቶ አቶ	"
16	" አቶ አቶ አቶ	"
17	" ደረጃ ገብረ	"
18	" ገብረ ገብረ	"
19	" ገብረ ገብረ	"
20	" ወ/ሮ ገብረ	"
21	" አቶ አቶ አቶ	"
22	" አቶ አቶ አቶ	"
23	" አቶ አቶ አቶ	"
24	" አቶ አቶ አቶ	"
25	" አቶ አቶ አቶ	"
26	" ደረጃ ገብረ	"
27	" አቶ አቶ አቶ	"
28	" አቶ አቶ አቶ	"
29	" አቶ አቶ አቶ	"
30	" አቶ አቶ አቶ	"
31	" አቶ አቶ አቶ	"
32	" አቶ አቶ አቶ	"
33	" አቶ አቶ አቶ	"
34	" አቶ አቶ አቶ	"
35	" አቶ አቶ አቶ	"





Minutes of Public Consultation with the communities at the Plant site

ቀን 12-12-2019

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36	አቶ ደረሰ	በቀረ
37	"	የሰላሳ ደረሰ
38	ወ/ሮ ሄጅቲ	ገጽህ
39	አቶ አሰራር	በሰላሳ
40	ወ/ሮ ወይ	ወ/ረዳ
41	"	አሰራር
42	"	አሰራር
43	"	አሰራር
44	"	አሰራር
45	"	አሰራር
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47	"	አሰራር
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66	"	አሰራር
67	"	አሰራር
68	"	አሰራር
69	"	አሰራር
70	"	አሰራር
71	"	አሰራር
72	"	አሰራር
73	"	አሰራር





Minutes of Public Consultation with the Communities at the Mines site

Derba-Midroc Cement PLC

DERBA MIDROC CEMENT PROJECT

Midroc International Consulting Engineers
Socio-Economic Study (2007)

Consultation Meeting With Community Members

Zone Shaykha Woreda Selicha PAK/kebele Kofla wot/gama

Place of the Meeting muger

Date 6-12-99

Time 7:40

No	Name	Position /Occupation of the Participant	Village	Signature
1	Averce - Gammadara	Gotee buaa / 204.	muger	
2	A Zambaba - Hundere	"	mussen	
3	Simmee - Rubbi	"	muger	
4	Fifgodam, Negjesh	"	muger	
5	Balkumaa - Dabbale	"	muger	
6	Fidd'aa - Bafqalaa	"	muger	
7	Bafqalaa - Hurr'aa	"	muger	
8	Cadaa - Sheba	"	muger	
7	muger - Shujumaa	"	muger	



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Minutes of Public Consultation with the Communities at the Mines site

McDermott International Consulting Engineers
Socio-Economic Study (2017)

Derba Midroc Cement PLC

DERBA MIDROC CEMENT PROJECT

Consultation Meeting With Community Members

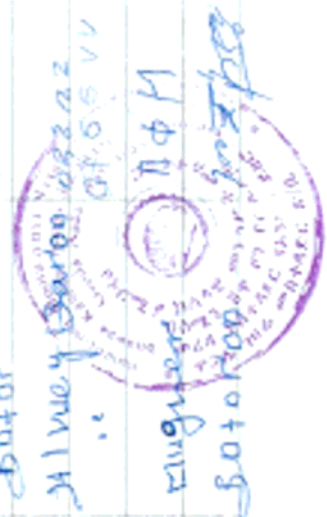
Zone Alghoa Wereda Sunitaa P.A./Kebele Hincayibara

Place of the Meeting: Hughes

Date: 8.12.99 E.C

Time: 7:40

No	Name	Position / Occupation of the Participant	Village	Signature
1.	Garayee Basamii	Director / soco	Batoron	
2.	Adad Batuu	"	"	
3.	Fayyida Rebaa	"	"	
4.	Addee Biyyuu Baqqara	"	Mughes	
5.	" Biyyuu Coraduu	"	Bator	
6.	Abbo Badhane Begii	"	Muey Bator	
7.	Betuu Adnee	"	"	
8.	Baqqara Canfaa Jorisa b. ms / soco	"	Mughes	
9.	Bammaachuu Ajanele	"	Batoron	



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Minutes of Public Consultation with the Communities at the Mines site

Comda Handa Isayizaru
Gurraa 6-12-09

<u>Lakk. Minna Ootaa Isayizaru</u>	<u>Booraa</u>	<u>Gaaraa Isayizaru</u>
1. Gatajaa Batamii	Botoroo	"
2. Abqirre Motummar	Mxalle IB	"
3. Benyaa Biratuu	Isayizaru	"
4. Didaa Damme	Bataroo	"
5. Onabaa Waamii	Mugnet	"
6. Ejeesaa Boor H	Batbron	"
7. Gammachis Ayonee	"	"
8. Fayyisaa Mummichaa	"	"
9. Birmaa Tolafaa	"	"
10. Murisaa Daballe	"	"
11. Dirbaa Hundee	"	"
12. Xafaa Babisaa	"	"
13. Badhadda Beqii	"	"

H. M. Isayizaru



Minutes of Public Consultation with the Communities at the Mines site

Ganda Handa wayzoro
Gullaa 8-12-09

<u>Lakk.</u>	<u>Maga Oboe bulaa</u>	<u>Gookii</u>	<u>Gaa-ee hojii</u>
1	Tasfayere - Dammee	Bottoroo	Albulaa
2	Tollosaa - Harrisaa	mugar	"
3	Tammarii - Humbe	- mugar	"
4	Armaa - Kattafaa	- Bottoroo	"
5	Shifaraa - Durresaa	- wayzoro	"
6	Fayyisaa - Tolaa	- mugar	"
7	Takkuu - Aammochuu	- Bottoroo	"
8	Mullugutaa - Gadaa	- Bottoroo	"
9	Bayyisaa - Ardaa	- Bottoroo	"
10	Argawuu - Jimmaa	- Bottoroo	"
11	Asfaa - Dabbalaa	- Bottoroo	"
12	Daguu - Buunyaa	- Bottoroo	"
13	Fayyisaa - Battoroo	- "	"
14	Hattuu - Bayyuu	- "	"
15	Adde - Mulluu - Homayoo	- "	"
16	Talaa - Amarrisaa	- "	"
17	Eeshetuu - Cooraa		
18	Adde - Darbituu - Amarrisaa		





Minutes of Public Consultation with the Communities at the Mines site

Derba Midroc Cement PLC
Socio-Economic Study (2019)

(7)

DERBA MIDROC CEMENT PROJECT

Consultation Meeting With PA's Offices

Zone ደቡብ Woreda ደቡብ PA/Kebele ሀንዳ ገበያ

Place of the Meeting 4/7/09/2/107

Date : 6/12/199

Time :

No.	Name of the Participant	Position of the participant	Address	Signature of the Participant
1	Abu Bakanda Beryu	B/Ganda (Chairman)		
2	Abu Kaggasa Ararisa	B/Hayaa (Secretary)		
3	Tomfoa Gudisa	H.D.M. / 107/09		

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List of Consulted Kebele Peasant Association Leaders

Sn	Zone	Wereda	Kebele	Name	Position of the Participants	Place of Meeting	Date
1	N/Shoa	Sululta	Becho K/Mihret	Ayele A/welde	Chairman	Becho K/Mihret	August 11, 2007
2	"	Sululta	Weyzero	Bokona Bedo	"	"	August 18, 2007
3	"	"	A. Gumbe	Teshome Ene Gameda	"	"	August 16, 2007
4	"	"	Gorfo	Teshome Hunde	"	"	August 16, 2007
5	"	"	Boku Golba	Seyune Alemu Feysa	Vice Chairman	"	August 12, 2007
6	"	"	Lilo Chebeka	Erana Giru	Chairman	"	August 13, 2007
7	"	"	Beressa	Derba Niguse Erepia	Security	"	August 15, 2007
8	"	"	Eko Efo Babo	Bayu Abebe W/Michael	Vice Chairman	"	August 15, 2007
9	"	Mulo	Emuma Bubissa Dinburi	Baysa Gurmu	Chairman	"	August 15, 2007
10	"	"	Mulo Fale	Fikadu Biru	"	"	August 16, 2007
11	"	Wichale	Bole Becho	Dereje Abera	Chairman	"	August 13, 2007
12	"	"	Becho Fulene	Alemu Dede	"	"	August 12, 2007
13	"	"	Nono	Mekonnen Kebede	"	"	August 15, 2007
14	"	Yaya Gulele	Arere	Biru Bedese Dade	"	"	August 15, 2007
15	"	"	Gobole katle	Habitamu Zewde Tesfa	Chair man	"	August 16, 2007
16	"	"	Goda Jaba	Abeje Jemmama Wake	"	"	August 14, 2007
17	"	"	Gna Sele	Niguse Bedesso	"	"	August 15, 2007
18	"	"	Kuchuma Tangaso	Tessome Bekele Dereso	"	"	August 17, 2007
19	"	"	Guyamana Kuwata	Shiferaw Tidu Mammo	"	"	August 15, 2007
20	"	"	Sole Gibe	Gammachu Begna Tulu	"	"	August 15, 2007



List of Consulted Kebele Peasant Association Leaders

Sn	Zone	Wereda	Kebele	Name	Position of the Participants	Place of Meeting	Date
21	"	"	Dede Diftu	Alemu Legesse Garedew	"	"	August 17, 2007
22	N/Shoa	Sululta	Yasa Gonda Werke	Eba Gemeda Senbete	Chairman	Becho K/Mihret	August 15, 2007
23	W/Shoa	Ada Berga	Kerkerecha	Teshome Bedye Ayene	"	"	August 18, 2007
24	"	"	Elu Keteba	Werku Alemu	"	"	August 18, 2007
25	"	"	Elu Tosegne	Tadesse Damite	"	"	August 18, 2007
26	"	"	Dire Medele	Lema Jerge Male	"	"	August 17, 2007
27	"	"	Elu Werebo	Ayane Gebissa Nagaha	"	"	August 18, 2007
28	"	"	Debissa Agassa	Bedada Gonfa Senbeta	"	"	August 17, 2007



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