

Table of Contents

1	Executive Summary.....	3
1.1	Introduction and Background.....	3
1.2	Location and Communication	4
1.3	Project Chronology till Date	5
1.4	Project Description.....	5
1.4.1	Study Area at a Glance	5
1.4.2	Utilities	5
1.4.3	Topography and Drainage	5
1.4.4	Local Geology	6
1.4.5	Mineable Reserve & Life of Mine	7
1.5	Life of Mine	8
1.5.1	Mining Method	8
1.6	Meteorology Long Term Meteorology (Secondary Data).....	9
1.6.1	Temperature	9
1.6.2	Wind	9
1.6.3	Rainfall	9
1.6.4	Relative Humidity.....	10
1.6.5	Site Specific Meteorology	10
1.7	Existing Environment Scenario.....	10
1.7.1	Land Use.....	10
1.7.2	Soil Quality	10
1.7.3	Ambient Air Quality	11
1.7.4	Noise.....	11
1.7.5	Water Environment.....	11
1.7.6	Cropping Pattern	12
1.7.7	Socio Economic Status	12
1.7.8	Impact on Air Environment	12
1.7.9	Impact of Traffic Density:	12
1.7.10	Impact on Noise Environment.....	13
1.7.11	Impact on Water Environment	13
1.7.12	Impact on Flora and Fauna	14
1.7.13	Impact on Top Soil	14

1.7.14	Impact on Socio Economic Status	14
1.8	Environment Monitoring Program	14
1.9	Additional Studies	14
1.9.1	Risk Assessment and Disaster Management Plan.....	14
1.10	Environment Management Plan	15
1.11	Project Benefits	15

1 EXECUTIVE SUMMARY

1.1 Introduction and Background

The Akalsara Dolomite mine is situated at Khasra no. 1263/1 at village Akalsara, tehsil Jajjaipur and district Janjgir-Champa (C.G.). This site is 30.00 km away from district office Janjgir-Champa and falling in Jurisdiction of Village – Akalsara which is 1.50 km away from the project site. The Chhattisgarh State Capital and District headquarter Raipur is connect by good tar road.

The mining plan of the Akalsara Dolomite mine was approved by Directorate of Geology and Mining Raipur vide letter no.3912/Mining-2/Q.P./F.No.100/2015, Nawa Raipur Atal Nagar Dated 09/09/2020 (Annexure -1)

The quarry lease of Dolomite stone mining has been granted for lease period of 50 years from 20/07/2016 to 19/07/2066 to Arvind Soni resident of Portha district Janjgir- Champa (C.G.). Mine plan and environment clearance was previously approved for 17500 TPA. Lessee is intended to increase production capacity from 17,500 TPA to 2,49,020 TPA (Lease deed enclosed in Annexure –2)

First technical presentation was made in 360th SEAC; Chhattisgarh meeting dated 1st March 2021. ToR was granted vide Letter No. 100/SEAC.CG/Mine/1496 dated 09/04/2021

It is proposed to excavate approximately 2,49,020 TPA dolomites by Open cast Semi-Mechanized method. The lease area is 4.047 Ha and total Recoverable reserve is 15, 82,797 T for dolomite. The expected life of the mine will be 7 years.

The studies were undertaken by The Consultant namely, Aseries Envirotek India Pvt. Ltd. (AEIPL) Noida. AEIPL is a National Accreditation Board for Education and Training (NABET) Accredited Consultant Organization (ACO) and is qualified to prepare EIA reports for Project / Activity 1(a) (Mining of Minerals), a mandatory requirement for agencies submitting such studies to regulators for the purpose of seeking EC.

The EIA study report has been based upon the following :-

- Field data collection on different aspects of environment including air, soil, water, land, meteorology, noise, flora, fauna, agriculture and socio-economy in the study area of 10 km radius with mine as its center.
- Study of opencast mining methodology, water requirement, source of pollutants and pollution control strategy.
- Ecological Prospective and Green Belt Development.

The EIA study evaluates the impact on the present environmental scenario and check out the environmental management plan incorporating further step to mitigate the adverse impacts of air, noise, water, land pollution on environment.

1.2 Location and Communication

Table 1-1: Location and Communication from ML area

S. No.	Area	Name	Aerial Distance in Km and Direction from M.L area	
			Core Zone	Buffer Zone
1.	National Parks/ Wildlife Sanctuaries	-	Nil	Nil
2	Biosphere Reserves/ Tiger Reserves/ Elephant Reserves and any other reserves	-	Nil	Nil
3.	Forest (PF/RF/Unclassified)	Bhotiya PF	Nil	2.00km towards East.
4	Habitat for migratory birds	-	Nil	Nil
5	Corridor for animals of Schedule I and II of the wildlife (Protection Act 1972)	-	Nil	Nil
6	Archaeological Site (notified, Other)	-	Nil	Nil
7	Defense Installation	-	Nil	Nil
8	Industries / Thermal Power Plant	-	Nil	Nil
9	Other Mines	-	Nil	Nil
10	Airport	-	Nil	Nil
11	Railway Lines	-	Nil	Nil
12	National Highways/ State Highway	-	Nil	Nil
13	Human Habitations	-	Akalsara	1.5 kms in W from the mine site

1.3 Project Chronology till Date

1. The relevant documents, namely Form-1 (as per the EIA Notification 2006, as amended till date) along with a Pre-feasibility Report, Approved Mining plan and proposed Terms of References (ToR) for Akalsara Dolomite mine was submitted for carrying out environmental studies to the State Environment Impact Assessment Authority Chhattisgarh, on 14.04.2018
2. Tor was finalized by SEAC, C.G in its 360th meeting held on 01.03.2021.
3. ToR letter has been issued by SEAC, Chhattisgarh in favor of, Akalsara dolomite Mine of sh Arvind Soni, Near Village Akalsara, Tehsil Jajaiapur, District Janjgir-Champa (Chhattisgarh) vide letter no.100/ SEAC, C.G/ Mine/ 1496 on Dated 09.04.2021.

1.4 Project Description

1.4.1 Study Area at a Glance

The study area is taken in accordance with the provisions of sector specific EIA guidance manual for Mining of Minerals manual, published by Ministry of Environment and Forests, during 2010. The study area for the Soapstone Mining Project was as follows:

- The proposed project area (M. L. area) is considered as ‘Core Zone’.
- 10 km radius from the boundary limits of the M.L. area is considered as ‘Buffer Zone’.

1.4.2 Utilities

Table 1-2: Requirement for the mining

S.No.	Requirements			Quantity and Nos.	
1.	Water Requirement	Domestic Propose	Drinking	0.135 KLD	0.810KLD
			Sanitation	0.675 KLD	
		Dust Suppression		920 m ² area per 1.0 L	0.92 KLD
		Greenbelt Development		1174 plants per 5.0LPD	5.870 KLD
Total					7.6 KLD
2.	Man-Power Requirement			27	

1.4.3 Topography and Drainage

The general topography of the applied lease area and surroundings are almost flat. The area is surrounded by agriculture land. The highest elevation is about 232 m MSL on the

southwestern side and lowest is 229 m MSL towards northern side. The general surface level has been considered as 230 m MSL.

The area is having fertile top soil of about 0.5 m thickness and thereafter 0.5 m is murrum and having number of dolomite outcrops. The OB has been removed at about 5,000 sqm area.

The area is situated in-between the Son Nadi and Borai Nadi. The Son Nadi is flowing north-south direction at western side at about 8 km distance from the area and Borai Nadi is also flowing north-south direction at eastern side about 6 kms distance from the area.

A seasonal nala flowing at about 50 m on the north side of the lease area flowing from west to east direction.

There is no potential of acid mine drainage and water is potable.

1.4.4 Local Geology

In the prospected area mostly dolomite of Chandi Formation of Raipur Group is present which is also known as Saradih formation. The general strike of the dolomite is NE-SW. In most of the northern, central and Southern part of the prospected area gray dolomite is present under over burden of average 1 m thick. Below the dolomite, shale of Beomandihi formation of Raipur Group is present. The rocks are sub horizontally disposed. The local geological sequence in the area is as under:

- Soil/OB
- Dolomite
- Shale

Soil: The applied lease area is mostly covered with black cotton soil & laterite soil/murrum with a few outcrops of dolomite. The average thickness of top soil is about 0.5 m and murrum/OB is about 0.5 m.

Dolomite: Dolomite is a carbonate rock formation which is fine-grained, hard compact, light gray to dark gray in colour, elephant-skin structure is seen at places. The thickness of dolomite is 29 m in boreholes.

Physical Characteristics: Color is often gray to dark gray, Luster is sub-vitreous to dull, Fracture is conchoidal, Hardness is 3.5-4, Specific Gravity is 2.6 (average), Streak is white.

Shale: Below the dolomite bed, arenaceous shale is encountered (observed in nearby mines),

Soil: The applied lease area is mostly covered with black cotton soil & laterite soil/murum with a few outcrops of dolomite. The average thickness of top soil is about 0.5 m and murum/OB is about 0.5 m.

Dolomite: Dolomite is a carbonate rock formation which is fine-grained, hard compact, light gray to dark gray in colour, elephant-skin structure is seen at places. The thickness of dolomite is 29 m in boreholes.

Physical Characteristics: Color is often gray to dark gray, Luster is sub-vitreous to dull, Fracture is conchoidal, Hardness is 3.5-4, Specific Gravity is 2.6 (average), Streak is white.

Shale: Below the dolomite bed, arenaceous shale is encountered (observed in nearby mines),

1.4.5 Mineable Reserves & Life of Mine

Table 1-3: Geological Reserves

A. Total Mineral Reserve	UNFC Code	Quantity in TPA	Grade
Proved Mineral Reserve 111	111	16,86,422	CaO 28.15% SiO ₂ 05.67% MgO 19.16%
Probable mineral Reserve 121 and 122	122	---	
B. Total Remaining Resources		---	
Feasibility mineral Resource	211	12,47,653	CaO 28.15% SiO ₂ 05.67% MgO 19.16%
Prefeasibility mineral Resource	221 & 222	---	
Measured mineral resource	331	---	
Indicated mineral resource	332	---	
Inferred minerals resources	333	---	
Reconnaissance mineral resource	334	---	
Total Reserve +Resources		29,34,075	

1. Total Geological Reserves -29, 34,075 T
2. Total Blockage-12, 47,653 T
3. Total Mineral Reserves (2-1)- 16, 86, 422, TPA
4. Total Production since commencement of Mining-20,320 T
5. Mineable Reserves-(3-4) -16, 66,102 T
6. Recoverable Reserves-(5 X 95%) - 15, 82,797 T
7. **Proposed Annual Production: 2, 49,020 TPA**

1.5 Life of Mine

Table : Life of Mine

Life of mine	Mineable reserve/ Average annual production
	15,82,797 /249020=7 years but considering the decrease in annual production Rate life of mine is considered as 10 years

1.5.1 Mining Method

- The mining operation was carried out by mechanized open cast mining method.
- Low level intensity scientific and controlled blasting is proposed to be carried out for production of Dolomite. The dolomite is soft, so local labour with the help of heavy hammer chisel and digging rod and rock breaker produce sufficient of dolomite.
- The present bench height is 1.5 and finally converted into 3 meters and faces slope 45 ° angles.
- The ultimate pit depth will be 30 m i.e from 230 to 200 m.RL, shown in all plans.
- The Pit road is 2 times of tractors width and maintained in 1:16 gradient.
- Dolomite will be transported from mine to stack yard by excavator/dumper combination . The present pit is covering 5,000 sq. meters area during first five years about 29,600 sqm additional area will be developed as pit. thus total area under pit will be about 29600 + 5000 = 34,600 sqm
- Mining operation will be carried out in single day shift from 8am to 5pm with 1 hour lunch break.

Year	OB cum	ROM Volume in cum	ROM 95% of ROM in cum	Net Volume ROM in tonnes (BD-2.5)	Sub-grade ore	Mineral rejects	Waste (5% of ROM) (cum)	Ore to OB ratio
I	14800 (top soil) 14800 (OB)	50,850	48,308	120770	NIL	NIL	2543	1:0.245
II		97,650	92768	231921	NIL	NIL	4883	---
III		1,04,850	99608	249020	NIL	NIL	5243	---
IV		101250	96188	240470	NIL	NIL	5063	---
V		80250	76238	190596	NIL	NIL	4013	---
Total	29600	434850	413110	1032777	NIL	NIL	21745	---

- The year-wise production is being projected by considering the present requirement. The recovery % dolomite from of ROM is 95% (5% deduction due to clay/leterite in the voids encountered within the dolomite bands)

- Year-wise proposed production for the ensuring five years of modified mining plans are as follows:

- Table 1: Year wise Production of Mineral and Waste**

Table: Extent of Opencast Mechanized

Name	No's	Capacity	Purpose
Dozer with ripper	1	Small capacity	For removal of OB
Wagon Drill	1	80 mm	For Drilling dolomite bed
Excavator	2	0.9 cum bucket capacity	For loading OB and excavation of dolomite bed
Hydraulic rock breaker	1	---	For loading OB and excavation of Dolomite and loading the same into dumpers
Dumpers/Tipppers	35	15 T	For transportation of OB and thereafter transportation and dolomite to C & S plant
Water Tanker	1	10,000 L	For sprinkling of on quarry road
Water pump	1	5 HP	For dewatering of the working pit during rainy season
Jeep	1	----	For supervision

1.6 Meteorology Long Term Meteorology (Secondary Data)

Information presented in subsequent paragraphs is from the Indian Meteorological Department (IMD) Champa, Long Term Climatological Tables, 1971-2000. These tables give useful information about a region's weather, since it was collected over a period of 30 years.

1.6.1 Temperature

The district experiences a hot and semi humid climate. The annual temperature of the district varies between 8⁰C and 46⁰C .The maximum temperature is observed in the month of May and June whereas the minimum is observed in the months of December and January.

1.6.2 Wind

Long- term wind direction data is presented in **Error! Reference source not found.**, and indicates that the predominant wind during the study period (22nd December 2020 to 31st March 2021) is North.

1.6.3 Rainfall

As per IMD station Champa, Janjgir – Champa is endowed with high rainfall. Areas of chronic shortfall are few and localized. The rainfall is typically late in coming, very heavy when it comes, concentrated in a few days and early in termination. The district receives its rainfall mainly from the south-west monsoon which usually sets in the third/fourth week of June and spread over a period from

mid-June to mid-September with heaviest shower in the months of July and August. The average rainfall in the district is 1164 mm in the year 1994 to 2012.

1.6.4 Relative Humidity

Most humid conditions were found in the monsoons, followed by post-monsoons, winter and summer in that order. Mornings were more humid than evenings and humidity ranged from a high of 83-79% in monsoon mornings to a low of 50-33% in summer evening.

1.6.5 Site Specific Meteorology

Environmental monitoring was carried out for summer Season covering the months of (22nd Dec. 2020 to 31st March 2021. Meteorological data is collected for wind speed, wind direction, temperature, rainfall and cloud cover.

Meteorological data showed that the average wind speed during the study period was observed to be 9.85 m/sec. It was observed that during study period wind blows pre dominantly from N and Second pre dominantly from NE direction. Mean average temperature recorded during study period was 31.32°C with mean maximum temperature of 46.6°C and mean minimum of 19.2°C

1.7 Existing Environment Scenario

1.7.1 Land Use

Land Use of Mine Lease Area

At present, there is a pit in the area. It is proposed to work the deposit of Dolomite in next five years by developing the mine by formation of proper benches, each of 1.5m height. At the conceptual stage, the mined out pits will be converted into water reservoir.

Land Use of the Study Area

The land use land cover map of the study area has been prepared using recent Landsat satellite image, area and distance calculations have been carried out using GIS software after geo-referencing and interpretation. Total Land covers an area of 29,676.72 ha. Out of which 2,573.65(8.67%) is buildup land 5,932.30 (19.99 %) is crop land 2,632.61(8.87%) fallow land 3,503.49 (11.81%) is forest land 2,175.85(7.33%) waste land 1,857.14(6.26) Water bodies /River.

1.7.2 Soil Quality

The soils of study area are predominantly Sandy loam in texture. The pH of the soil is ranges from 6.8 to 7.80. The soil being of friable consistency, the bulk density of the soil is in the range of 1.13 to 1.52 g/cm³. Nitrogen content of the soil varies from 18.2 to 22.4 mg/100g .

1.7.3 Ambient Air Quality

The above analysis report shows that since this mine is not operating and traffic on the National Highway is also less, population in the village is not more. The baseline ambient air quality was found to be within the permissible limits of NAAQS.

1.7.4 Noise

Generally, noise levels in public places like temples and community hall have higher values in day time. In the study area, higher Noise level of 47.4 dB (A) was recorded during day time at Mine site & lower Noise level of 38.3 dB (A) was recorded during night time in bhotidih.

Day time Noise Levels (Leq day)

- The day time (Leq day) noise levels observed in the range of 47.4 to 36.7 dB (A) in residential area.

Night time Noise Levels (Leq night)

- The night time (Leq night) Noise levels observed in the range of 38.3 to 30.7 dB (A) which is within the prescribed limit of 45 dB (A) in residential area.

Industrial Area Noise Levels (Leq)

- The noise levels at the mine site were found to be 47.4 dB (A) during day time and 38.3 dB (A) during night time.

1.7.5 Water Environment

Groundwater Quality

The analysis results shows that the pH for the ground water samples GW1, GW2, GW3, and GW4, ranged from 7.68 to 7.27 indicating neutral in nature. The TDS (Total Dissolved Solids) were found to be in the range 611.0 mg/l to 366.0 mg/l which is within the permissible limit of 2000 mg/l. Total Hardness of Ground water samples in the study area was found to be 342-178 mg/l which is within permissible limit. Alkalinity indicates better buffering capacity of water and ranges between 214.0-174.0 mg/l.

Fluoride content varies from 0.74 mg/l – 0.58 mg/l which is within permissible limit. The overall ground water quality in the study area was found to be mineralized with respect to total dissolved solid, chloride (164.0 mg/l to 136.0 mg/l), sulphate (76.0 mg/l to 62.0mg/l) and hardness.

Surface Water Quality

Surface water samples were collected, analyzed, pH value in SW1, SW2, SW3 and SW4 was found to be in the range 7.58 and 7.81 mg/l which indicates that surface water is neutral in nature; TDS was found to be in the range of 394 to 233 mg/l. Dissolve oxygen were found about 5.8 and 8.4 mg/l. It is seen that the physicochemical analysis of other parameters like

chloride, calcium, magnesium, nitrate and fluoride were found within the desirable limit. The overall surface water quality of the available sources within the study area was found to be good physico-chemically with respect to all the parameters. There is no organic load-observed in the sources monitored indicating no pollution load in the source.

Biological Environment

Ecological study is essential to understand the impact of industrialization and urbanization on existing flora and fauna of the study area.

There is no wildlife sanctuary, National park, Biosphere reserve, Wildlife corridors, Tiger/ Elephant reserve within 10 km radius of the mining lease.

1.7.6 Cropping Pattern

The main base of the economy of Janjgir-Champa district, agriculture and forest produce is collection. Agriculture is mainly produced in paddy, maize crops and wheat, jowar, kodo kutki, gram, tur, urad, sesame, Ram sesame, mustard. Besides agriculture, animal husbandry, poultry farming, fisheries also play a supporting role.

1.7.7 Socio Economic Status

The study area includes 59 villages within the 10 km. radius with a total population 67391. as per census 2011. In the study area about 26,197 of the total population is literates. As per census 2011, about 18107 of the total are main workers, 14,794 are marginal workers.

1.7.8 Impact on Air Environment

- Water sprinkling will be done twice during the day in summer season and once during the day in winter season for settling of dust particles.
- Sharp drill bits will be used for drilling and they will be maintained periodically to reduce the generation of dust.
- Transportation of mineral will be done on Kaccha road which will generate dust and rest of the distance will be on National Highway will not cause air pollution.
- Drilling machines will have bag filters attached to them also to prevent the dust to get air borne.

1.7.9 Impact of Traffic Density:

Traffic analysis is carried out by understanding the existing carrying capacity of the roads near to the project site and the connecting main roads in the area. Existing traffic on these roads was compared with the carrying capacity of these roads as per IRC guidelines and it was found that the roads are capable of handling the additional traffic/load.

Post project PCU will be 377.50 PCUs (264PCUs Existing + 113.50 PCUs Proposed PCUs) on Baradwar Road. It can be clearly stated that the road used for carrying mineral to the end users is capable of handling the additional load due to mining activities.

Table 1: Carrying Capacity of Roads

Project site to Baradwar Road	Vol. of vehicle in PCU/day	Capacity of Roads in PCU/day	LOS
	377.50	2500	0.151 Excellent

1.7.10 Impact on Noise Environment

The expected noise levels in the working environment are compared with standards prescribed by occupational safety and health administration (OSHA-USA) & CPCB-NEW DELHI, the noise levels are expected to be in the acceptable range.

1.7.11 Impact on Water Environment

Impact on Surface Water Quantity

Surface water will not be utilized and impact on surface water quantity is not anticipated due to the proposed activity.

Impact on Surface Water Quality

The proposed opencast mining operation may cause water pollution. The sources of pollution generally are:

- Wash off from dumps
- Soil Erosion

Mitigation Measures

In open cast mining pits as well as on dumps, it is necessary that the rainwater falling outside the edge limit of the working areas will not be allowed to enter into the pit and working areas. Therefore it is proposed to develop garlands drains around the mining pits and dumps to arrest the surface runoff water and divert it to lower synclines without any contact with the mining operations.

In the lease for proper drainage of water, a set of garland drainages will be made in the mining lease area and the water will be accumulated at the lower most gradient by constructing siltation tanks which will act as water storage in the area as well as collection of silts. Silts will be regularly cleared regularly.

Impact on Groundwater Quantity

The impact of mining on groundwater is not anticipated as the mining pit will be below the general ground level of the surrounding area. The present bench height is 1.5meters and faces slope 45 ° angles. The ultimate pit depth is 200 m.RL. The present pit is covering 5000 sq. meters area. During the period of modified mining plan the same opencast mining will continue in systematic manner as earlier benches of 1.5 meters height proposed between 230 to 200 m.RL. The water table is available within 30 meters from the surface level in rainy

season and during summer the water table goes below 30 meters The ultimate working depth will be maintained up to 200 m RL hence will not touch the general water table

1.7.12 Impact on Flora and Fauna

As the mining activities will be confined to core zone only, no adverse impact is foreseen on the flora & fauna in the core zone. To prevent the entry of wildlife animals from entering the lease area proper fencing will be done all around the lease area.

1.7.13 Impact on Top Soil

During mining of Dolomite, 14,800 cum of top soil will be generated and will be used for plantation.

1.7.14 Impact on Socio Economic Status

Socio-economic survey was conducted in five villages within the study area located in all directions with reference to the project site.

The respondents were asked for their awareness/opinion about the project and their opinion about the impacts of the project, which is an important aspect of socio-economic environment, viz. job opportunities, education, health care, transportation facility and economic status.

1.8 Environment Monitoring Program

The monitoring of pollutant in mine will be carried out for air, water, soil and noise. It takes care of all monitoring needs of the mine. Additionally ambient air and work zone monitoring in mine will be conducted in every season near mining operation, loading and transportation (haul road) areas by Government approved private agency. The analysis results of air monitoring will be properly recorded and submitted to the statutory authorities from time to time. Noise measurement of mine equipment will be done once in a year, ambient air monitoring will be done once in one season at three locations (1 in upwind, 1 in downwind, 1 in lease area. Ambient noise monitoring will be carried out at 3 locations, 1 within the lease area, and 2 locations of nearest habitation to the lease. Water quality monitoring will be done once in season at two locations & soil quality monitoring will be done once in a year at 2 locations within the study area. A total of Rs. 0.90 lakhs/- every year will be spent on monitoring of environmental parameters.

1.9 Additional Studies

1.9.1 Risk Assessment and Disaster Management Plan

The following natural /industrial problems may be encountered during the mining operation are:

- Inundation-filling of the mine pit due to excessive rains.
- Slope failures at the mine faces or stacks.

Water table will not be encountered during proposed working. No high risk accidents like landslides, subsidence flood etc. have been apprehended. But possibility of accidental disaster is also not ruled out. Therefore, all the statutory precautions will be taken for quick evacuation as per the Mines Act 1952, the Mines Rules 1955, Rule of MMR- 1961 and the Rules of MCDR-1988.

1.10 Environment Management Plan

The environment management plan is prepared with a view to facilitate effective environmental management of the project. Apart from having an Environmental Management Plan, environment management cell consisting of mines manager, safety officer and environmental officer is constituted. A total of Rs. 9.56 Lakhs/- would be spent on environment management activities every year.

1.11 Project Benefits

The surrounding inhabitants around the mine lease area are mainly agricultural oriented. Opportunities for jobs activities will be created and mining will serve as a source of permanent livelihood. The mine will create employment directly or indirectly. Additional, certain works like transportation will be outsourced on contract. So, overall effect of mining is expected to be positive.

