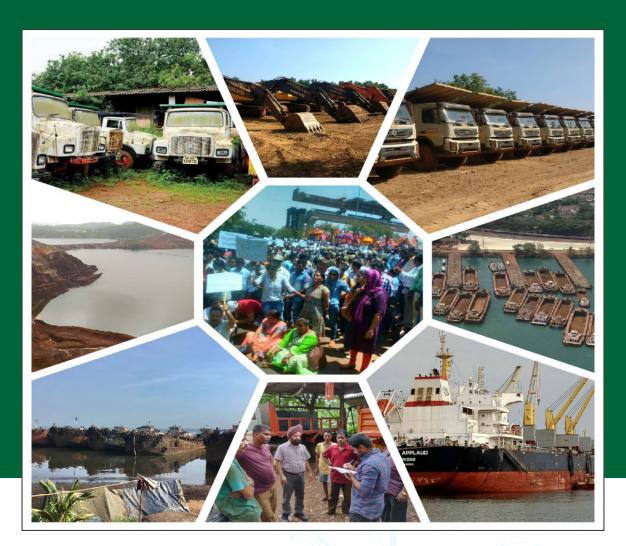
# STUDY ON IMPACTS OF STOPPAGE OF MINING IN GOA ON SOCIO-ECONOMICS





Department of Environmental Science & Engineering Centre of Mining Environment Indian Institute of Technology (Indian School of Mines) Dhanbad – 826 004, Jharkhand (India)



# STUDY ON IMPACTS OF STOPPAGE OF MINING IN GOA ON SOCIO-ECONOMICS





Department of Environmental Science & Engineering Centre of Mining Environment Indian Institute of Technology (Indian School of Mines) Dhanbad – 826 004, Jharkhand (India)



# **PREFACE:**

The Mining Industry in the State of Goa has witnessed several cyclic trends of ups and downs since its inception. While the Ores excavated have been heavily influenced by the Importing countries, primarily because of its Geographical location and its lower tenor would only permit it for blending purposes to importing countries.

As such, the export driven industry had over the years contributed significantly as a reliable supplier of ores *(although non-significant, when compared to other larger competitors in Australia and Brazil)* but also ensured employment and sizeable revenue collection for the State and Centre too.



Figure - Stoppage Impacts



Changing Policy and Stress on environmental concerns have raised the bar for sustainability, not just for Goa but rest of India too. Mines in Goa, due to their inherent grant by the erstwhile Portuguese and its Colonial laws, and thereafter the synchronizing with Indian Laws over the years, post being a part of India have ensured a certain peculiarity.

The recent stoppage of Mining in the State has had an adverse effect not just on the Mining in the State, but also made an deep impact on the Government's Revenue, not forgetting the many who have been rendered without an alternative livelihood abruptly (Figure: Stoppage Impacts).

IIT-ISM, Dhanbad was approached by Goa Mineral Ore Exporters' Association to carry out a report on the Socio Economic impacts on the stoppage of Mining in the State of Goa. On its part the Institute, by collection and analysis of earlier reports, discussions with the Stakeholders as well as random field survey to get a sense of the impacts posted during workshop, as this initiative is attempted a year post stoppage of Operations from March 2018 onwards.

The report also touches briefly on the Historical pasts as well as the actions generally undertaken by the Mining sector in Goa, when operations were ongoing.

Professor Gurdeep Singh

Indian Institute of Technology (Indian School of Mines), Dhanbad

December 2019

Prof. Gurdeep Singh Centre of Mining Environment Dept. of Environmental Science & Engg. Indian Institute of Technology (Indian School of Mines), Dhanbad Jharkhand-826004, India



# CONTENTS

# **Executive Summary**

Chapter 1	Introduction	01
Chapter 2	Chronological Events in Goa Mining	9
Chapter 3	Objectives of Study & Methodology	14
Chapter 4	Socio Economic Impact due to Suspension in Mining	16
Chapter 5	Livelihood Report Take Away, Workshop, Discussions & Random Field Check	38
Chapter 6	Concluding Remarks	46
References		49
Tables and An	nexures	51



## CHAPTER 1

#### **INTRODUCTION**

#### **Preamble:**

Goa is the 25<sup>th</sup> State of India, attaining statehood in May 1987. It is a relatively small State which lies between the latitudes 14°53'54" N & 15°40'00" N and longitudes 73°40'33" E & 74°20'13" E with geographical area of 3,702 km<sup>2</sup> and coastline of 105 kms.

Out of the total geographical area of Goa, the forest area comprises 1424.46 km<sup>2</sup>, under which the government forest land is 1224.46 km<sup>2</sup> and private forest land is approximately 200 km<sup>2</sup>. As per the 2011 census the population of Goa is 14.59 lakhs.

The State is divided into two districts: North Goa and South Goa. Panaji is the headquarters of the North Goa district and Margao of the South Goa district.

The districts are further divided into 11 talukas.

North Goa district has six talukas viz., Pernem, Bardez, Tiswadi, Bicholim, Sattari and Ponda. South Goa district had 5 talukas viz., Salcete, Marmugao, Sanguem, Quepem and Canacona.

In April 2011, a portion of Ponda taluka from North Goa district and Sanguem taluka from South Goa district were separated to form Dharbandora taluka which was added to South Goa district as 12<sup>th</sup> taluka.

Panaji is the capital of the State. The languages spoken are mostly Konkani, Marathi, English and Portuguese.

Goa is the small emerald land on the western Coast of India, nestled between the rumbling waves of the Arabian Sea between the borders of Maharashtra and Karnataka. The Sindhudurga district of Maharashtra is in the North, while on its eastern and southern borders are districts of North Kanara and Belgaum of Karnataka respectively. Most part of Goa is coastal country known as the Konkan, which is an escarpment, rising up to the Western Ghats range of mountains in the eastern border of the State, which separates it from the Deccan Plateau. The highest point is the Sonsogor, with an altitude of 1,167 m (3,827feet).



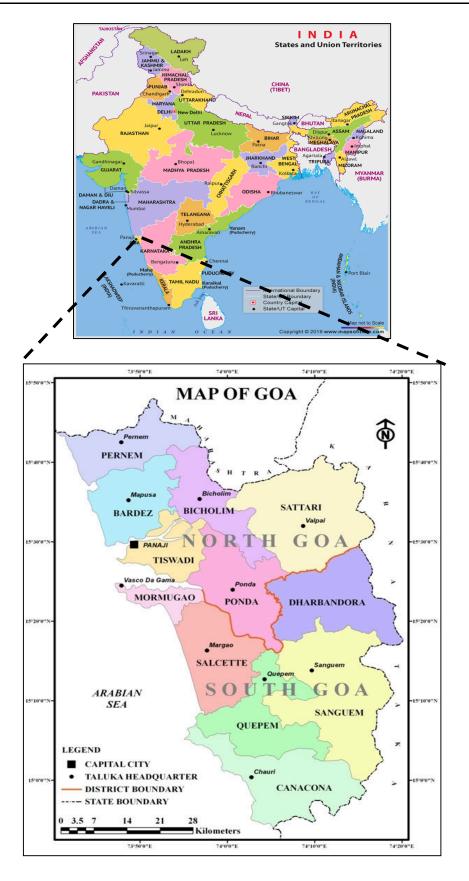


Figure: Map of Goa



Goa had been ranked the best placed state by the Eleventh Finance Commission for its infrastructure and ranked on top for the best quality of life in India by the National Commission on Population based on the 12 Indicators. Goa is a famous International tourist destination and attracts over 4 million domestic as well as international tourists annually.

Mining had been the major economic activity contributing over 20% of GSDP to the State's economy in the recent past which has dropped down considerably in the recent years primarily due to stoppage. Mining is more focused in midland of Goa, while tourism is generally limited along the coastal belt of Goa. Over the past six decades, mining has metamorphosed into the backbone of Goa's economy.

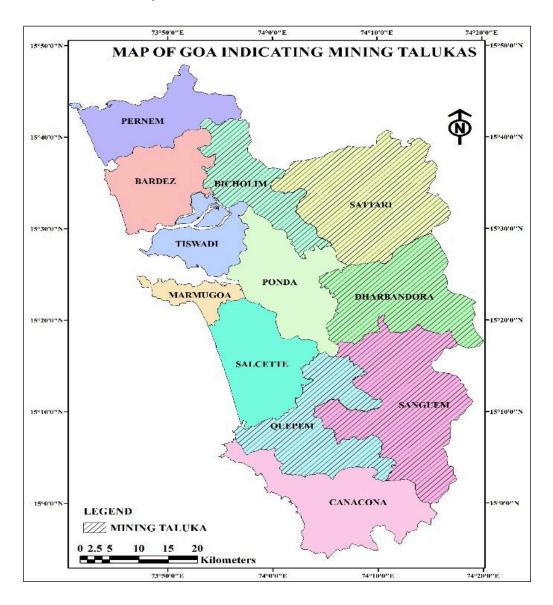


Figure: Map of Goa Indicating Major Mining Talukas



#### HISTORY

Goa was ruled by the Portuguese Government for over 450 years and was liberated from Portuguese Rule in 1961 but remained a Union Territory till 30<sup>th</sup> May, 1987 when Goa was declared as the 25<sup>th</sup> State of India.

While Goa is blessed with minerals such as Iron, Manganese, Bauxite, limestone and other minor minerals, it is the iron ores which is most prominent.

Iron ore deposits of Goa essentially consist of oxides of iron ore hematite and partly of magnetite belonging to the Dharwar Super Group.

The ores according to Geological Reports are considered to have been originated as a result of residual concentration in Banded Hematite Quartzite and also due to replacement of associated pink Phyllite.

The ore being of low grade, with high Alumina & Silica and therefore needs to be processed by various methods such as scrubbing, wet screening, gravity separation etc. in order to render them marketable.

It is pertinent to mention that all the concessions granted under the erstwhile Portuguese regime under the 1906 decree for the purpose of extraction of mineral mandated that the extent of the area of the concession be limited to a maximum of 100 Ha.

It was only with effect from 23<sup>rd</sup> May 1987 that they were abolished as concessions and declared to be deemed mining leases by way of a special Act *i.e.* the Goa, Daman and Diu Mining Concessions (Abolition and Declaration as Mining Leases) Act, 1987 ("Abolition Act"). The constitutional validity of the Abolition Act was challenged in the Hon'ble Bombay High Court at Goa. The Hon'ble high court upheld the validity of the Abolition Act, however it held that Sec 22(1)(a) of the Abolition Act would apply only prospectively i.e. only from and after 23.05.1987.

This aforesaid Judgement were, thereafter, challenged in the Hon'ble Supreme Court while admitting the appears passed an interim order dated 02.03.1998 which is still valid before the Hon'ble Supreme Court till date.



The location of the State, coupled with a natural inland waterway from the Mining jetty areas to the Ports, is one of the reasons why Goan ores, despite having an inferior Iron content and no domestic market, are extracted, processed and transported efficiently and economically for final sale. Goa thereby historically makes its mark in the International Iron ore markets.

#### RESOURCE AND RESERVES (of Iron Ores in the State of Goa)

#### *Introduction*:

It was Sir L. L. Fermer for the first time, paid a visit to Goa in 1909 and studied the Bicholim deposit to obtain a comparative picture between the Goan iron are deposits and those in the Sawantwadi area of Ratnagiri District, Maharashtra. Brief mention of the occurrence of manganese ore deposits in Goa was made by Dunn (1942). Attempts by private geologists to study small areas from time to time appear to have been made for mining iron ore and manganese ore deposits.

The first concentrated attempt was, however, made by Dr. Oertel, a German Geologist, who was commissioned by the former Portuguese Government to produce a geological map. Apart from this, no sustained effort was made to carry out any systematic studies. Although, in the rest of India, considerable work was carried out, geologists could not bestow any attention on Goa, because the territory was under Portuguese rule.

The Mining Concessions in Goa were granted under the Portuguese Mining Colonial Laws 1906. Concessions were granted to have a maximum area of below 100 ha each. Under Article 129, Mining taxes were of two kind's i.e.

1) A fix tax (Corresponding to the area) and,

2) Proportional Tax (corresponding to the mineral extracted and brought to the Surface)

Planned geological studies commenced only after the integration of Goa with the rest of India in 1961. Geological mapping, accompanied by regional assessment of mineral deposits, was undertaken by the Geological Survey of India during the period 1962-63. This resulted in bringing out the first authentic geological map of this territory.



Subsequent explorations have augmented the reserves to large extent and as per the Indian Mineral Year Book - 2018, published by the Indian Bureau of Mines, the estimated reserves and resources presently are 1415 Million Tonnes (**Hematite-1189 MT, Magnetite -226 MT**) *Processing - Beneficiation and Screening*:

Beneficiation of ore commenced since the early 1980's due to the stringent requirements of the importing buyers. Processes involved were mostly Dry screening as well as Wet process. Before the increase in demand for iron ores from 2004-05 onwards, the demand for Iron Ore was mostly in the form of Sinter grade fines of -10 mm size with Iron content of around 60 - 61%.

The ore being generally low grade (below 59%) had to go through processing and beneficiation to meet the requirements of buyers. The mining companies have set up dry screening and wet beneficiation facilities either at the mines or near loading points.

While the demand in terms of quantum augmented from 2005-06 onwards, demand for ores below 55% Fe too showed an increase. While this was an advantage wherein inventory space within the lease period occupied by low grades found a market and generated valuable incomes, it partly led to stress on existing infrastructure, which by a later Supreme Court order, the annual carrying capacity for the State of Goa was ultimately earmarked.

There has been a continuous up-gradation and evolution of technologies in beneficiation. World class equipment incorporating advanced technologies such as log washers, multi stage cyclones, and high intensity magnetic separators, etc. are used, in order to achieve maximum recovery. This initiative with respect to beneficiation, on the grounds of Mineral Conservation are in sync with the **concept of zero waste mining** which has been set as one of the objectives in sync with the National Mineral Policy too.

#### **Transportation**

Transportation of the mineral for the purpose of exports is carried out through road to a limited distance from mines to jetty/barge loading points and further by inland waterways till port or mid sea transhipper.

#### A) Road Transportation:

Ore produced and processed at mines is transported by tipper trucks hired from the local villagers, using private and public roads to the river side jetties. Such arrangement ensures Public participation in business activity.



To check on pilferage and overloading, weighbridges are installed at exit point of mine and at the receiving point.

The Government of Goa, post the resumption of operations since 2015 onwards had ensured Radio Frequency Identification Device (RFID) technology for tracking the transport trucks and barges and to obtain a real time transport data.

It is further noted that certain public roads, causing bottlenecks in mining areas had been widened and repaired by Mining Companies along the transportation routes.

#### B) Inland waterways:

Ore received at jetties is thereafter transported by way of barges to the ports of discharge for loading into vessels. Due to limited draft at the ports, few major mining companies invested in transhippers (transfer vessels) in order to ensure discharge of ore from barge to vessels.

The Operations of Production up to exports in the State of Goa were economically feasible due to the availability of natural Inland waterways, Efficiencies at the Ports complimented by use of Transhippers.

The limited inefficiency occurs in regard to logistics from the Mines to the Loading points by using smaller tipper trucks which haven't attainted the economies of Scale. Moreover, use of conveyors from Mines to loading point may not be practical due to the segregation of operating leases, despite being in more of less clustered form coupled with geographical undulations and most important the social fabric.

There is however a possibility to reduce carbon footprints in emissions by consensus operations, use of higher capacity trucks and utilization of infrastructural routes and jetties in a cooperative format.

#### Mormugao Port

The Berth No. 9, which had been commissioned in 1978-79 has been decommissioned post its operating years of service in 2012. Unfortunately, it was during this time that the Suspension of Mining, which was otherwise consistent and growing, impacted.

Operations with Berth No. 9 ensured a secure and sheltered loading of vessels, mostly up to panamax size vessels, as the draft available was 13m. For up topping of larger Vessels,



the same was done using Transhippers within the port limits. Increased demand from Ores since 2005 onwards had also resulted in loading at Mooring Dolphins.

**Panaji Port**: is a minor port adjacent to the port limits of the Mormugao Ports. Operations here were by using Transhippers mostly for up-topping.



Figure: Satellite Imagery of Mormugao Port





### CHAPTER 2

#### Chronology of Mining Activity in Goa:

In order to understand the evolving trends in Mining, a chronology of events has been drawn out below:

1929	First mining concession was granted by erstwhile Portuguese Regime.		
1931-41	Another 17 mining concessions granted. By 1942 Goa commenced iron ore exports on a small scale.		
1947	First Shipment in export of ores from Goa to Europe.		
1947-61	573 mining concessions granted by Portuguese Government under Portuguese colonial laws		
1953	Mechanization of mining operations in Goa by Chowgule & Co. Ltd.		
Dec 1961	Liberation of Goa from Portugal and becomes a part of India.		
Mid-60's	Mechanization of mining operations in Goa by V.M. Salgaocar & Bro. Ltd.		
Mid-60's	Dry processing plant (dry screening) introduced by V.M. Salgaocar & Bro. Ltd.		
1967	Chowgule & Co. established 0.5 MTPA Pelletization Plant, which was only the third of its kind in the World, and the first of its kind east of the Suez Canal.		
1968	Chowgule & Co. constructed 1000 DWT iron ore Barge at Sirigao Yard, Goa.		
1969	Chowgule's fund and build a mechanical ore handling terminal (Terminal Six) at the Mormugao Port.		
1969	Chowgule & Co. were the first company in India to introduce a Transhipper vessel for midstream loading of iron ore, the "M.V. Maratha Deep", thereby taking the load off Port Jetties.		
1970	Another Transhipper vessel, "M.V. Sanjivani" introduced by V.M. Salgaocar Bro. Pvt. Ltd."		
1978	Chowgule & Co. established the first One MTPA capacity Beneficiation Plant at Costi, Sanguem, Goa, which was the biggest in India at that time.		
1979	Mechanical Ore Handling Plant (MOHP) Commissioned at Mormugao Port (Terminal 9) with capacity of 8 MTPA. However restricted draft, hence requiring assistance of Transhippers.		



1980	Another Transhipper vessel, "M.V. Swatirani" introduced by V.M. Salgaocar & Bro. Pvt. Ltd.			
1982	Dempo Group introduced another Transhipper, M.V. "Priyamvada".			
1987	Goa, Daman and Diu Mining Concessions (Abolition and Declaration as Mining Leases) Act, 1987 was promulgated on 23 <sup>rd</sup> May, 1987.			
1993	Chowgule & Co. commissioned the Country's first 100% export-oriented Iron Ore Concentrate Plant at Tudou, Sanguem, Goa.			
1996	Sesa Goa Ltd. becomes the first Iron Ore Mining Company in the World to be certified by QMS with ISO: 14001.			
1996	Sociedade De Fomento Industrial Ltd. introduces High Grade Magnetic Separator in Beneficiation Plant.			
1996	Sesa Goa introduces large transshipment vessel, "M.V. Orissa Transhipper", for midstream loading of iron ore from barges.			
1999	V.M. Salgaocar & Bro. are certified by QMS with ISO: 9001:2000.			
2000	The Mining Industry in Goa, Floats Mineral Foundation of Goa an Initiative to address Socio Economic Concerns within Mining Belt of India. First of its kind in India.			
2001	Sociedade Fomento Industrial Ltd., introduce floating crane "Dona Paula" for transhipment.			
2002	Sesa Goa Ltd., is the first mining company in the World to be granted OHSAS 18001 certification.			
2004	V.M. Salgaocar & Bro. obtain EMS Certification of ISO:14001.			
2004	Timblo Group introduce Transhipper vessel "M.V. Shatixa" for mid-stream loading.			
2006	V.M. Salgaocar and Dempo Groups jointly introduce "M.V. Goan Pride" for midstream loading of iron ore.			
2005-2011	Exports of Goan iron ore rose from $\sim$ 24 MT in 2004-05 to $\sim$ 45 MT in 2010-11 due to enhanced demand for Ores.			
2012 - 13	1 <sup>st</sup> Suspension/Stoppage of Mining			
2014-15	Resumption of Mining based on lower capacity and additional taxes prescribed.			
16 <sup>th</sup> Mar 2018 onwards	2 <sup>nd</sup> -stoppage of Mining			



The Mining operations in the State of Goa were halted, initially, by the State and Central Government in September 2012, following the tabling of a Justice Shah Report, leading thereby to an NGO to file a Writ Petition (C) 435/2012 in Hon'ble Supreme Court leading to the 1<sup>st</sup> Suspension since October 5, 2012 onwards.

The Hearings commenced in September 2013 and finally the Hon'ble Supreme Court lifted the suspension of Mining operations in the State of Goa in April 2014, temporarily capping the production limit to 20 Million Tonnes and affixing the Goa Iron Ore Permanent Fund.

It also appointed an expert committee to indicate additional production capacities by studying dumps and improvement in Infrastructural avenues.

#### Processes followed by State Government before Renewing Leases

There were around 361 renewal applications which have been received before the State Government for 2<sup>nd</sup> renewals due in November 2007. The State Government communicated to the Central Government to consider that in the Interest of Mineral Development the operating leases be renewed for a further renewal period as a priority.

Nevertheless, such leases continued operations under the deeming provisions prevalent in the Statues, which were prevalent in rest of country also and in the case of Goa also vide the interim order dated 2/3/98 of the Abolition Act challenge.

Pursuant to the Direction of the Hon'ble Supreme Court Judgement dated 21.04.2014, around 88 leases were renewed by the State Government under second renewals orders

Post 12.01.2015, the powers to renew was withdrawn from the States by virtue of the MMDR Ordinance, 2015; as such, the balance renewal applications remained unprocessed despite being compliant.

For the renewal cases above mentioned, the State of Goa, post introducing various fiscal legislations, collected:

- INR 900 Crores as Stamp Duty and
- INR 426 Crores as fees for utilization of land under Land Revenue Code.

It was post these fiscal collections and the Supreme Court Judgement in WP (C) 435/2012 that leases were executed.



The MoEF&CC, after a detailed appraisal and consideration of Goa specific EAC Reports, facts and circumstances of each case and in compliance with the directions of the Hon'ble Supreme Court, <u>lifted the order of abeyance only in 72 cases</u> on March 20, 2015.

Thereafter and only after obtaining, revalidating / renewing all permissions such as mining plan, consent to operate, environmental clearance, transit permits etc., mining operations commenced.

Recommenced operations were carried out with the strict supervision of various authorities such as Indian Bureau of Mines, Directorate of Mines & Geology, Goa, Ministry of Environment & Commerce and Climate Change, Directorate of Mines Safety, Goa State Pollution Control Board to ensure that mining was monitored and complied.

The mining operations were being carried out in terms of the directions of the Hon'ble Supreme Court. It was with these directions, did the State act and all dependents *(including but not limited to logistic providers, earth moving machinery sector, truck owners)* have reinvested in the sector on a promise/assurance by the Government both State and Union that right to work/live would be on-going and sustainable.

In the Financial year 2016-17, Production of ores in Goa was upto 20 Million Tonnes and below 15 Million Tonnes of which were exported. The renewals affected by the State Government were subsequently challenged in the Hon'ble Supreme Court. Hearings for which commenced in October 2017 onwards.

Vide its Judgement dated 07.02.2018, the Hon'ble Supreme court set aside the 88 renewals affected by the State Government and stopped all mining operations from March 16, 2018 from the State of Goa.

The stoppage in Operations continues till date, thereby leading to profound consequences on ground levels and not just limited to the Livelihood and Revenue Impact but also result in certain technical concerns on safety parameters if left unaddressed over a long time.

Various efforts being under taken by Industry, State Government with the Central Government for necessary cures to enable resumption of Mining in the State of Goa.



In the meanwhile, Stakeholders directly and indirectly involved on the Industry are facing hardships as earnings of livelihood have been impacted. The effected mining stakeholders under the banner of Goa Mining People's Front started peaceful agitation by way of processions, collective gatherings, submission of memorandum to elected representatives, State Government & Central Government. Prolonged delays would only worsen the Situation.

Besides facing frequent agitation, the concern is also on the State Government which has been impacted not only in revenues but also having limited alternative of revenue augmentation due to this sudden collapse of economic pillar. This would strain the State Government to seek loans from market financial Institutions as well as seek higher Central Government allocations.

The State Government have since, petitioned before the Central Government for an effective mechanism to address methodology of resumption of Mining in the State of Goa by taking legislative cure or legal approach.

In order to address the growing concern of anguish being faced by the Stakeholders involved, the State Government have been constantly pacifying such anxieties caused to the affected through constant engagement with the Central Government as well as judicial review more recently.

A collage of various Press Articles appeared in the print media have been compiled and attached as **Annexure-A**.



#### CHAPTER 3

#### **Objectives & Scope of the Study**

The study, prima facie, intents to document the social and economic impact of the stoppage of iron ore mining activity in the state with effect from 16<sup>th</sup> March 2018 as result of order of Hon'ble Supreme Court of India dated 07.02.2018 and will subsequently be augmented by detailed analytics and social survey to be conducted. The primary purpose of the study is to analyze and to documents the following:

- 1. The socio-economic profile of the various regions of the mining affected areas in the State of Goa.
- The direct and indirect effects in terms of the contributions of the mining sector between the period 2010-18 and covers aspects like output, employment, taxes, foreign exchange, CSR etc.
- 3. The social and economic benefits accrued to the immediate society from the mining sector, the State of Goa and the Country.
- 4. The effect on Investment ranking and the confidence of existing Investors/ Mining Companies, loss and erosion of reputation of traditional industry units.
- 5. The growth of the industry in the period between 2010-2018 in view of the increasing level of regulation and in view of the previous stoppage.
- 6. An analysis of socio-economic implications of the repeated stoppage of the iron ore mining industry in the State.

#### **Research Methodology**

It may be noted that the "**Impacts of Suspension of Mining in Goa on Socio – Economic**" is a collaborative study based essentially on various secondary reports prepared by the Government Authorities, Industry, other reports as well as certain qualitative information designed by the Institute to reproduce a representative basis on the effects of suspension of mining in Goa as well as to address the socio-economic quality of welfare measures that are essentially being represented from 2010 onwards in the State of Goa.



Further, in 2010 the IIT (ISM) DHANBAD carried out the **Regional Environmental Impact** Assessment Study of Mining in Goa Region (REIA) which was sponsored by MoEF&CC / GOI. This report was submitted by the Institute to MoEF&CC / GOI which in turn submitted the same to the Hon'ble Supreme Court. The Hon'ble Supreme Court considered this report for resumption of sustainable mining.

The present study assumes significance in understanding the Socio Economic impact due to suspension of mining that are currently posed before the State of Goa.

Apart from the Secondary data, the Institute would conduct Interactive Workshops with the Stakeholders (*including affected Transporters, Workers, Chambers of Commerce, State Government department, electronic and print media, etc.*) on account of the suspension of activities.



#### CHAPTER 4

#### Socio Economic Impact due to Suspension in Mining

Administratively, the State of Goa of 3702 km<sup>2</sup> is divided under two districts and a total of 12 Talukas. The total area under the forest is 1424 km<sup>2</sup> (~38.5 % of geographical area) out of which nearly 755 km<sup>2</sup> of government forest land is protected *(wildlife sanctuaries/national parks)* areas. This restricts the economic potential of the area substantially coupled with the degradation in quality of life.

#### Socio-economic Environment

In the present study, a comprehensive evaluation of the socio-economic status of the population was made by referring to Census Reports (2001 and 2011) followed by the socioeconomic survey in 2019 of five major mining Talukas viz. Bicholim, Sattari, Dharbandora, Sanguem and Quepem and including Bardez and Mormugao (*Logistic Related*)

Along with this, non-mining Taluka was also referenced to analyse the difference in quality of life than those of mining Talukas.

Salient features / Inputs of the study would also include reliance on Past Reports and information provided by the State Government in the form of affidavits in various legal proceedings:

- Mining had been a major economic activity in the region. As it accounted for 20% of the GDP, more than 60,000 families and more than 25% of the state population is directly or indirectly dependent on mining.
- The majority of households opined favorably on the resumption of legal mining activities and especially in the Mining talukas of the State (Voiced by various Villages Panchayats, Resolutions, local media report, recent Whitepaper prepared by Goa Livelihood Forum as well as own assessment).
- The literacy of 3 of major Mining Talukas was less than that of the State (88.7%). The Taluka wise literacy rate of the study area is given in Table.



Taluka	% (	of Literate Populati	on
	Persons	Males	Females
Bicholim	89.24%	93.69%	84.62%
Sattari	85.24%	91.65%	78.59%
Ponda	89.21%	93.56%	84.58%
Sanguem	83.43%	89.60%	77.24%
Quepem	82.93%	87.50%	78.35%
State	88.70%	92.65%	84.66%

# Table: Literacy Rate in Major Mining Talukas

(Source: Census Report 2011) - Statistical handbook 2015-16

As Ponda being an industrial hub and nearest location to industrial area, it can be inferred that the skill manpower may have settled in and around Ponda.

In regard to Canacona, being mostly least populated and without Industrial units is inferred to be lower too than the rest.

Taluka	%	of Literate Populati	on
	Persons	Males	Females
Tiswadi	90.37%	93.41%	87.24%
Bardez	90.98%	93.78%	88.14%
Pernem	88.05%	92.90%	83.02%
Canacona	84.68%	90.02%	79.39%
Salcete	89.34%	92.63%	86.15%
Mormugao	89.30%	93.33%	84.84%
State	88.70%	92.65%	84.66%

#### **Table: Literacy Rate in other Talukas**

(Source: Census Report 2011) - Statistical handbook 2015-16

#### Mining

Mining provides economic activity in hinterland Goa which do not benefit from Tourism. Out of a total of 12 Talukas, 7 Talukas are substantially dependent on mining activity, namely Bicholim, Sattari, Dharbandora, Sanguem, Quepem and also partly in Bardez and Marmugao (Iron Ore logistics related) and contributing 20 % of the GDP (2012) which has now come to a grinding halt. It is estimated that over 40% of Population live in areas where primary industry is dominantly mining & its allied activities.



These talukas account for over 40% of the total area of the State and 43 Panchayats out of a total of 191 Panchayats.

Sr. No.	Panchayat	Taluka	Total Population		Sr. No.	Panchayat	Taluka	Total Population
1	Dharbandora	Dharbandora	2991		23	Neturlim	Sanguem	1709
2	Collem	Dharbandora	4195		24	Rivona	Sanguem	3621
3	Kirlapal Dabal	Dharbandora	3057		25	Sanvordem	Sanguem	5103
4	Mollem	Dharbandora	1715		26	Uguem	Sanguem	2557
5	Sancorda	Dharbandora	1233		27	Kalay	Sanguem	2683
6	Adwalpal	Bicholim	1412		28	Bhati	Sanguem	1933
7	Amona	Bicholim	2963		29	Bhirondem	Sattari	476
8	Cudnem	Bicholim	3308		30	Honda	Sattari	5863
9	Mayem Vaiguinim	Bicholim	8250		31	Morlem	Sattari	3290
10	Mulgao	Bicholim	3892		32	Poriem	Sattari	4190
11	Narao	Bicholim	2384		33	Pissurlem	Sattari	1940
12	Harvalem*	Bicholim			34	Assolda	Quepem	1257
13	Sirigao	Bicholim	1617		35	Ambaulim	Quepem	2987
14	Navelim	Bicholim	3836		36	Caurem Pirla	Quepem	920
15	Piligao	Bicholim	2643		37	Molcornem	Quepem	1507
16	Surla	Bicholim	4278		38	Xeldem	Quepem	7434
17	Velguem	Bicholim	3927		39	Assonora	Bardez	3870
18	Pale Cottombi	Bicholim	7791		40	Pirna	Bardez	2568
19	Cortalim	Mormugao	1121		41	Nadora	Bardez	1257
20	Sancoale	Mormugao	21923		42	Sirsaim	Bardez	2850
21	Panchawadi	Ponda	4295		43	Tivim	Bardez	9076
22	Usgao Ganjem	Ponda	12436	(Source: Census Report 2011) * recently created, formerly part of Cudnem			of Cudnem	

Table Population distribution	n Panchayat wise under 7 Ta	alukas related with mining activities
······································		



The Institute on the basis of its interactions with various stakeholders, in particulars with the Panchayats, BDO's, Municipal Corporation confirmed that the impact of mining closure is being faced by them and desire protection of their livelihood by early resumption of Mining. All these Panchayats under the seven (07) Talukas are generally affected (at least 40% to over 90%) due to suspension of Mining.

#### **Royalty & Government's Receipts:**

The Major Taxes collected by the State Government Includes Mineral Royalties on the Quantum of Ores dispatched during the month. Other Taxes / Cess includes transport cess, Road Tax, Barge Tax, Dead Rent, Surface Rent and other miscellaneous levies such as Consent Fees to operate amongst others.

Post the Hon'ble Supreme Court's Judgement in April 2014, besides, an additional contribution towards the Goa Iron Ore Permanent Fund had also been imposed @10% of sale value of ore; Parliament has carried out certain amendments in Mines and Minerals (Development and Regulation) Act, 1957 in the year 2015. These amendments have incorporated statutory Contributions towards District Mineral Fund (DMF), National Mineral Exploration Trust Fund in addition to charging the Royalty (*Rates of which came to be enhanced from earlier existing 10% to 15% since 2015 onwards*).

Sr. No	Year	Royalty collected on extraction of Major Minerals*	Royalty collected through e-auction of mineral ore	TOTAL (₹ In Crores)
1	2010-11	974.2	0	974.2
2	2011-12	936.39	0	936.39
3	2012-13	328.02	0	328.02
4	2013-14	9.55	27	36.55
5	2014-15	3.85	44.5	48.35
6	2015-16	43.11	33.9	77.00
7	2016-17	314.5	5.2	319.7
8	2017-18	239.60	15.3	254.9
TOTAL		2849.22	125.9	2975.11

<b>Total - Mineral Royalt</b>	v collected by t	he State of Goa - (	(Maior Minerals)	* (in Crores)
i ovar iviniterar itojan	j concecca sj e			(111 01 01 05)

(Source: DMG - Goa), \*excluding Dead rent



It may be noted that the Royalty collection on extracted Ores in the Year FY 2010-11 from Rs. 974 Crores steeply declined to an amount of since the Suspension / Stoppage of Mining to Rs. 9.55 crores in FY 2013-14.

Subsequent to the renewal of 88 mining leases by the State Government, mining operations commenced from Oct-Nov 2015 with reduced production capacity imposed by the Hon'ble Supreme Court Order.

The State Government collected Rs 43.11 Crores Mineral Royalty in the FY 2015-16. The same increased to Rs.314.5 Crores and Rs.239.6 Crores in the FY 2016-17 and 2017-18 respectively.

The impact of reduced Royalty post FY 2015-16 as compared to FY 2011-12 is due to the declined market as well as reduction in the quantity extracted post a carrying capacity imposed.

The collection of Royalty reduced to Nil during the FY 2018-19 onwards. In addition, the indicated Royalty collection of ~Rs. 22.32 Crores during the FY 2018-19 is the difference of royalty payment payable during the previous year post assessment.

Apart from Royalty, the State Government also collected the following revenues:

Total District Mineral Fund (@30% of Royalty) and Goa Iron Ore Permanent Fund (@10% of Average Sale Price) collected by State Government post MMDR 2015 and Hon'ble SC Directives (21/4/2014)

Sr. No.	Year	District Mineral Fund collected	Goa Iron Ore Permanent Fund
1	2015-16	12.33	9.92
2	2016-17	95.55	175.56
3	2017-18	72.47	165.73
TOTAL		180.35	351.2

(Source: DMG - Goa)



\*In addition, an additional amount of Rs 45.18 Crores was realized post assessment, hence, presently the total collection towards GIOPF is (351.2+45.18) Rs 396.4 Crores. Similarly an indicated amount of ~Rs 7.8 Crores was realized post assessment, hence presently the total collection towards DMF is (180.4+7.8) 188.20 Crores

Total National Mineral Exploration Trust (@2% of Royalty) collected by State Government

NMET COLLECTION				
FINANCIAL YEAR BREAKUP	(₹ In Crores)			
2015-2016	0.82			
2016-2017	6.34			
2017-2018	4.76			
TOTAL	11.92			

(Source: DMG - Goa)

The collection of DMF, GIOPF & NMET commenced in the FY 2015-16 increased substantially in the FY 2015-17 and FY 2017-18. Additionally, an indicative amount of *Rs 0.37 crores* is post assessment thereafter.

The Hon'ble Supreme Court in April 2014 instructed that the inventorised Ores totaling to ~16.8 Million Tonnes be e-auctioned. Since then, till date over 22 E-auctions have been conducted wherein over 13 Million Tonnes has been sold. The Revenues accrued to the State Government on this account by way of various taxes/levies have been estimated over Rs. 1,300 Crores.

The Hon'ble Supreme Court in April 2014 advocated the Goa Iron Ore Permanent Fund (GIOPF) which is 10% of Average Sale value of the ore. This is a unique fund which had been intended before the advent of the DMF statutorily in MMRD 2015 and presently operates only in the State of Goa, in addition to the DMF.

Therefore, on collective reading of all these taxes, i.e. royalties and other collections, it is evident that well over 30-35% of the average sale price of Iron Ore is collected by the State Government alone.



High incidences of Taxes, including imposition of Export Duty for Goan Ores, which have limitations in domestic markets would discourage value addition and thereby see a negative growth perspective in the future, if not addressed adequately.

#### Impact of suspension of mining in the state of Goa:

The Impact of Stoppage of Mining in Goa has been carefully captured by the Brief Resume of arguments of State Government in WP(C) 435/2012 as given in table below:

Sr. No.	Item of Loss	<b>₹</b> In Crores
1	Direct loss to the State	1,400
2	Shortfall to the GSDP of the State on account of Mining Sector in 2013-14 (at nominal price, if mining operation were conducted)	8,000
3	Total Cumulative Losses to the Economy of the State	32,000

#### Table : Brief Resume of arguments of State Government

(Source: Brief Resume of arguments of State Government in WP (C) 435/2012)

Besides the revenue Gap, the State Government under special rehabilitation Package had earmarked additional 120 Crores annually towards scheme and providing financial benefits to mining affected people. The amount has since the prolonged closure almost doubled.

The Suspension also brought along cascading effect to the entire economy of the State. The Banking Sector which had lent loans to the Transporters, Earthmoving machinery have been under financial stress due to non-payment of loans as the Accounts have turned into Non Performing Assets (NPA'S).

Following Table shows the Banking Section exposure to the Mining Industry as a whole as reported by the Government of Goa in 2013.



Mining Exposure	TOTAL				
	Data as on 30-06-2013			Out of NPA	
	No. of Accounts	Limit	Outstanding	NPA's	Amount (₹ in Crores)
Public Sector Banks	4278	2131.99	1339.15	1013	211.16
Private Sector Banks	248	233.96	81.58	125	16.79
Co-operative Banks	2436	503.19	318.58	1405	212.12
Gross Total	6962	2869.14	1739.31	2543	440.07

#### Table: Banking Section exposure to the Mining Industry

Source: Brief Resume of arguments of State Government in WP (C) 435/2012

Due to the Shortfall and decreased revenue realized on account of suspension of mining activity, the basic infrastructure was impacted and forced the State Government to borrow from Open Markets / Other financial Institutions.

The economy of the State had historically been developed primarily on iron ore mining and tourism, and other minor industries like agriculture horticulture etc. The contribution of different sectors to the overall economic growth of the State as stated in the State's Economic Survey 2017-18 for the year 2016-17 (at current prices) primary sector accounted for 9.26%, secondary sector 55.18% and tertiary sector accounted 35.56%.

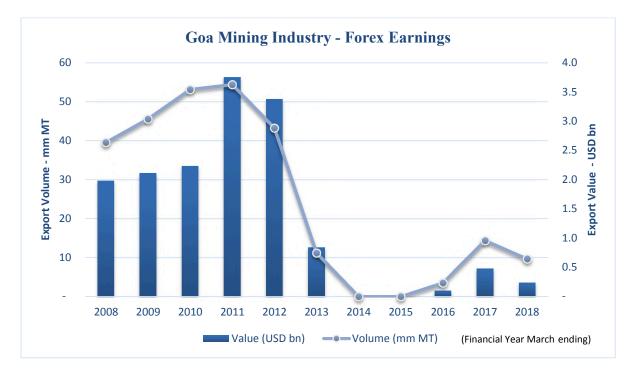


#### **Goa Mining Shutdown - Impact Areas**

#### A. ECONOMIC IMPACTS

#### I. Potential Loss of Foreign Exchange:

Since mining in Goa is predominantly export based it has been making significant contribution to the forex reserves of the country. Over the last decade, Goa's Mining Industry has contributed over USD 13bn to the country's forex reserves.



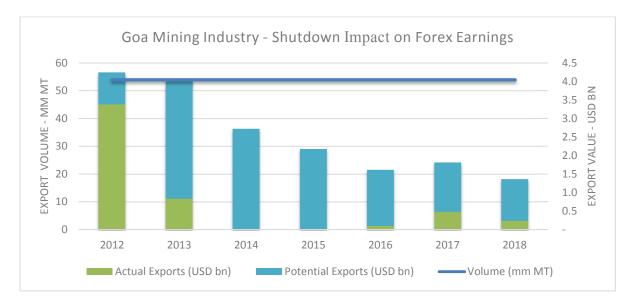
#### (Source: GMOEA & Industry)

While the contribution was very significant till FY12, at over USD 3.5bn each year (FY11 & FY12), the figures have dwindled since then. This is clearly as a direct consequence of the proceedings before the Supreme Court.

In the year ending March 2013 there has been a sharp decline as all mining and transportation came to be suspended by order dated 05.10.2012 by the Supreme Court which order continued till 21.04.2012. In effect in the financial year ending March 2013 there had been only two months of exports i.e., April- May, 2012 as during monsoon i.e., end of May to end of September no export takes place owing to the monsoons and impossibility or risk of port operations.



Mining only resumed in spurts sometime from the latter half of 2015 and exports were undertaken thereafter based on reduced productions and leases not operating on full capacity. An analysis of the potential loss of forex earnings from FY12 to FY18, had the production and exports remained at FY11 levels, amounts to a figure of USD 13bn.



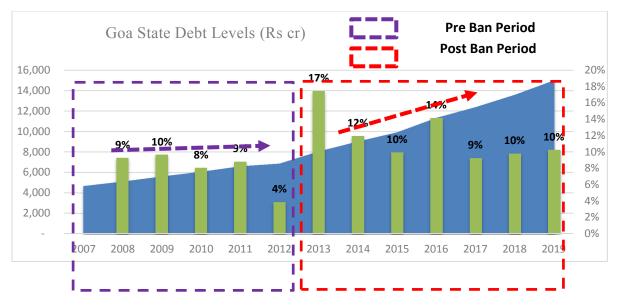
#### (Source: GMOEA Statistics)

Meanwhile due to devaluation of Rupee from FY 2011-12 till FY 18-19, has resulted into imports becoming costlier and at the same time, due to stoppage of mining there is a loss on earning foreign exchange / export earnings.

#### II. Enhancement in State Debt:

The debt levels for the State have accelerated to Rs 15,008 cr as on 31st Mar 2019. The steepest increase in debt levels has been during 2013 to 2016, the period when mining was partially or fully suspended, demonstrating the highly adverse impact on State's finances due to mining stoppages.





Source: Government of Goa (Finance Department)

#### III. Decline in the State's economic health

Goa's Mining industry has the potential to be a significant contributor to the State's economy. Over the 5 year period ending 2008, Goa's mining industry contributed on an average 16% of the state output (GSDP) or Rs 25,000cr in aggregate. Due to the intermittent mining operations, over the last 5 years (2014-18), its contribution has reduced to  $\sim$ 1% and in aggregate has contributed only Rs 2,900cr.). Table A is enclosed as **Annexure-B**.



<sup>(</sup>Source: Economic Survey, GoG)

(Financial Year March ending)

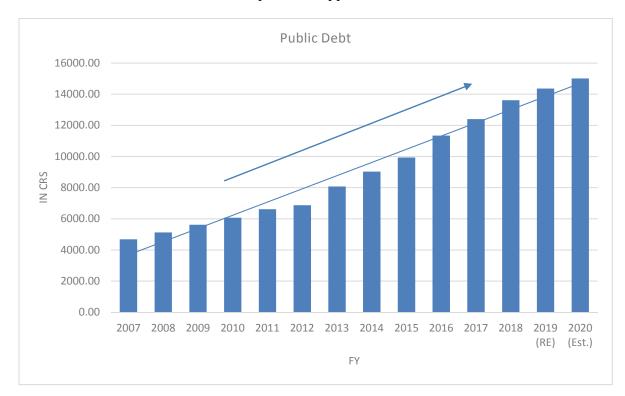
The Bar chart represents percentage increase in debt over preceding years



Goa Mining has the potential to make a very significant improvement in the State's economic health and well-being, due to shutdown negatively impacted.

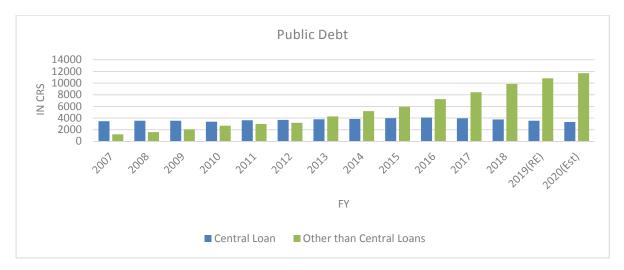
#### Public Debt of the State:

Over the years, the Public Debt of the State has been increasing over the years as indicated in Table B. Detailed information is compiled and appended as **Annexure-C**.



#### Break up of Loans:

Whilst the Central Loans have remained Static and even reducing, other loans have increased.

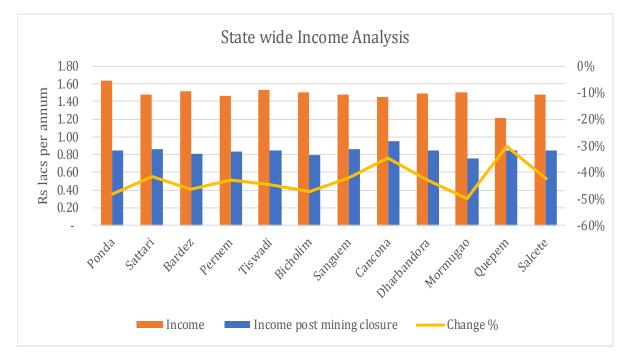


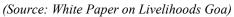
Source: Budget at a Glance, Govt. of Goa



#### IV. Significant loss of income levels across Talukas in Goa:

A Survey was conducted on 2,834 respondents (Livelihood Report) across all 12 Talukas in Goa and it was found that 30% of the respondents were either not working or were drawing government pensions.



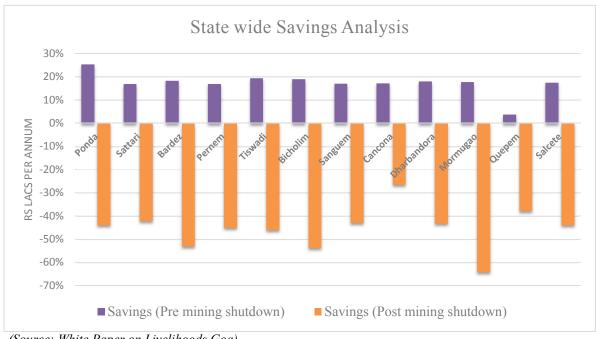


The survey results clearly demonstrated a sense of all-round gloom in the state economy and social life. With mining closure, the drop in income level has been very sharp not only in mining talukas but the impact has been felt all across Goa. Post closure, there has been at least a 30% drop in income across Talukas and in some Talukas like Mormugao the drop is as high as 50%.



#### V. Drop in savings / Enhancement of Debt

The Livelihood Report observed that on an average, savings rate amongst households across Talukas was positive, however, post the mining shutdown due to the sharp dip in income and unemployment, the expenditure levels are now far higher than income and as a result households are dipping into savings to meet monthly expenses.



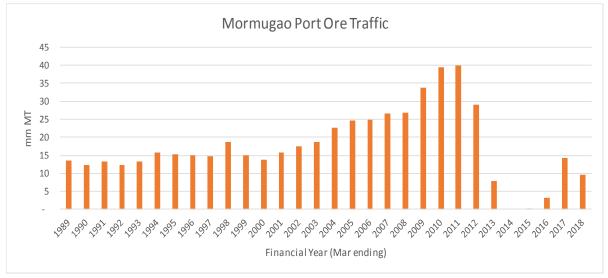
<sup>(</sup>Source: White Paper on Livelihoods Goa)

#### VI. Impact of Ancillary business related to Mining on State economic growth:

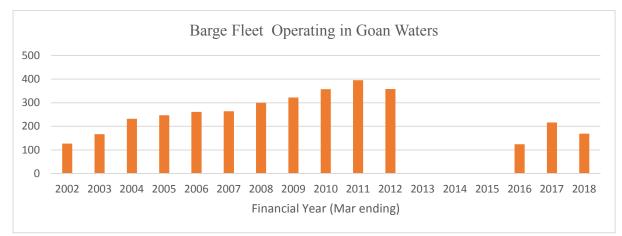
In addition to the Mining Industry directly contributing over 15% to the State economy, the industry also indirectly sustains a large number of ancillary businesses including barging, ports, capital goods, etc. These ancillary businesses have also suffered heavily over the 7 years. Both Mormugao Port & Barge owners have seen significant reduction in business as demonstrated by the chart below.



#### Table: Ore Traffic at Mormugao Port



(Source: Compilation of Annual Statistics of GMOEA)



#### Table : Barge Fleet Operating in Goan Waters

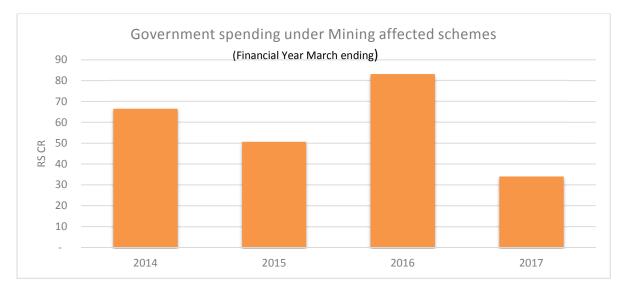
(Source: Compilations of Annual Statistics GMOEA)

Mining had helped build a SME of truckers, machine contractors and owners of river barges. Mining and related transportation and mobility industry *(including mechanics / garages, maintenance, drivers, support staff)* had galvanized downstream establishments catering to well over 25,000 trucks, machinery, barge building industries and a large contingent of contract workers, creating a ripple effect on the economy of those areas, and indirectly providing employment to 1.5 lakh according to government estimates (only belonging to the allied industries and occupations).

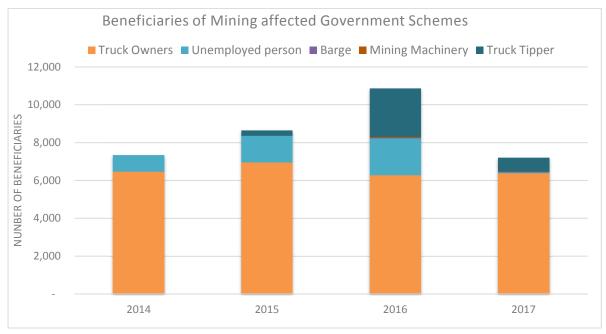


# VII. Detrimental impact on local populace due to non-availability of mining welfare funds:

The State Government recognizes the detrimental impact on local populace and small & medium enterprises has rolled out various welfare and debt relief schemes especially targeted at the mining affected. Spend under these schemes amount to ~Rs 230cr (FY14-17) addressing 34,000 beneficiaries.



(Source: Economic survey -2017-18, Goa State)



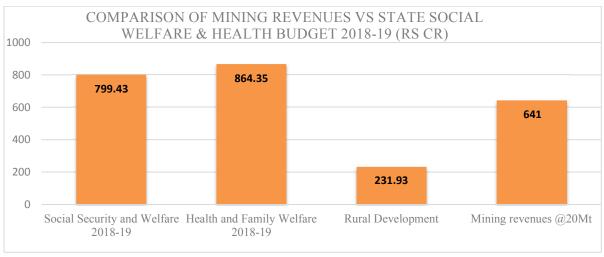
(Financial Year March ending)

(Source: Economic survey -2017-18, Goa State)



### VIII. Significance and importance of Mining revenue in State finance:

Goa is already in midst of a fiscal deficit crisis and the Mining revenue is crucial for generating revenue surplus for the state. The average additional Debt each year of Rs. 1,055 Crores since 2012. The revenues from Mining industry potentially offset more than 50% of the Debt additions each year.

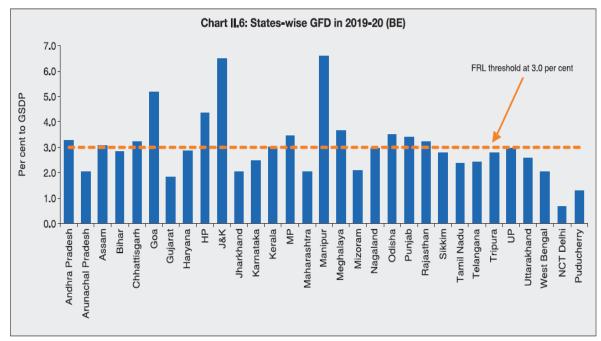


(Source: Economic survey -2017-18, Goa State)

#### **Snapshot of Goa State Finances:**

• Goa happens to be one amongst the other eleven states in India who have a Gross Fiscal Deficit (GFD) to Gross State Domestic Product (GSDP) higher than the FRBM threshold of 3%.





Source: RBI Study of State Finance

- They key to sustaining this high fiscal deficit is to consistently ensuring a higher revenue collections else the state would <u>need to progressively cut down its future expenditure</u> and bring it below the threshold levels.
- Goa is amongst the top 3 States having highest to Gross Fiscal Deficit (GFD) to Gross State Domestic Product (GSDP), over 5%.

Rs cr	2015-16	2016-17	2017-18	2018-19	2019-20(E)
Revenue receipts	8,550	10,040	11,054	11,881	13,594
Revenue expenditure	8,420	9,990	10,543	11,736	13,139
Revenue Surplus (-)/ Deficit (+)	-130	-50	-511	-145	-455
Capital Outlay	1,620	3,030	2,094	4,189	4,866
Net Lending	-10	-10	27	70	59
Non-debt Capital Receipts	-	-	-	-	-
Gross Fiscal Surplus (-)/ Deficit (+)	1,480	2,970	1,610	4,114	4,470
Total Outstanding Liabilities	15,651	16,903	18,642	20,485	22,401

Source: RBI Study of State Finances

• Goa's Gross Fiscal Deficit has increased from Rs 1,480cr in 2015-16 to Rs 4,114 in 2018-19. This is an <u>increase of 2.7 times over a three-year period</u>.



- Goa State's total <u>outstanding liability</u> at the end of 2018-19 stands at Rs 20,485cr, a <u>30%</u> increase from 2015-16.
- A <u>high debt burden</u> in the state leads to higher proportion of revenues being spent to pay interest and repayments. The State is spending ~19% of revenues for this purpose.

Rs cr	2017-18	2018-19	2019-20(E)
Interest Payment	1,244	1,372	1,512
Repayment of Debt	790	922	1,030
Debt servicing	2,034	2,294	2,542
% Revenues receipts	18%	19%	19%

Source: RBI Study of State Finances, Goa State Budget

# **B. SOCIAL IMPACTS**

#### 1. Impact on Employment:

The industry has been one of the major employment generators in the State of Goa apart from Tourism. This includes the direct employment but also the many more employment opportunities it generates for both skilled and unskilled employment in other occupations which are related to the mining industry.

An example of the indirect opportunities created by the sector is the road and inland waterway transportation sector which thrives on the mining industry.

A brief estimated direct and indirect impact of the mining industry for the state of Goa is as under:



					(Numbers in '000)
Mining	2009	2010	2011	2012	2013
Employment					
Mines*	6.7	7.2	8.0	8.2	6.9
Port*	3.1	3.0	3.0	2.8	2.7
Factories(Mining dependent)*	29	6	6	6	6
Factories (Partially	3	8	8	8	8
dependent)*					
	41.8	24.2	25	25	23.6
Truck (9000t @ 3	27	27	27	27	27
per truck) **	21	21	21	21	21
Barging (20 x 375	7.5	7.5	7.5	7.5	7.5
barges) **	1.5	1.5	1.5	1.5	1.5
Total	34.5	34.5	34.5	34.5	34.5
Total	76.48	59.26	59.94	59.93	57.94
Avg. Family size	4	4	4	4	4
Affected	305.94	237.02	239.75	239.71	231.75
*2017 Statistical Sur	vey, ** Estimate	d			

# **Table: Employment Statistics Mining and Ancillary activities**

This has impacted in loss of direct and indirect employment and has affected around 2,50,000 households in Goa.

# 2. Implications of CSR Expenditure due to suspension in mining activity:

The CSR expenditure of various mining companies in the state has historically been focused on the following four types of initiatives:

Health and Hygiene: The companies have established Health camps, Safe drinking water • project, Mobile health van, Eye care program, Community medical centres, Total sanitation drive, Medical rehabilitation centres.



- Education and Skill Development: The various initiatives include Technical school, Football academy, B.E. mining programs, Computer training, Online education in schools, Smart class, Science labs, Study centres, Transportation facility for school children, Educational aids to schools
- Sustainable Livelihood: The initiatives have been in the form of Agriculture support, Women empowerment, Women SHG program, Floriculture, Alternative livelihood opportunity projects, Gram Nirman, Revival of agriculture and allied activities
- Infrastructure Development: The initiatives include Bridges built by mining companies, Houses/toilets, School buildings, Bus shelter, Community hall, Anganwadi centres, Outdoor play equipment for schools, Library buildings, Restoration of traditional water harvesting structures.

The estimated annual expenditure of various mining companies in the state of Goa prior to 2012 was considerable and such efforts have cross benefitted other State Government agencies as well. These initiatives are not restricted only to the mining dependent/impacted regions of the state and the benefits are enjoyed by the much wider population of the state of Goa.

Even post 2015, while CSR efforts have been ongoing, a sizeable amount of the similar developments are to be deployed through the Funds collected under the District Mineral Foundation (DMF).

In order to capture the sensitivity of the awareness of funds available within the DMF with those living in the Mining belt a random survey carried out pointed out that this percolation is needed at the grass root levels as majority of the affected in mining villages have not benefited much from such funds collected till date.

In Brief, as discussed with the Industry too the following chart would depict some of the CSR works advanced.



# Table: Contribution under CSR

Projects	Impact
Mineral Foundation of Goa	<ul> <li>First of its kind mining industry foundation contributing uniquely for social development</li> <li>Apart from CSR spending by Individual Mining Companies in their area of operations, mining companies/lessees had also been contributing between Rs 2 to 4 per tonne commensurate with the production to MFG since FY 2000 onwards</li> <li>Reaching out to over 50 villages across Goa</li> <li>Invested over Rs. 50 crores in community programs etc.</li> <li>Participating actively in Swatch Bharat Abhiyan, including ODF and solid waste management.</li> </ul>
Infrastructure Development	• Mining companies established Goa Infrastructural Development Company and have invested nearly Rs. 100 crores in State's Infrastructure i.e. Roads, bridges, Houses, community halls, bus stops to name a few
Development of Sports	Industry Houses support football Academy & Sports Clubs etc.
Education	<ul> <li>Established Premiere educational institutes with State of Art facilities run by mining companies</li> <li>Built schools, Anganwadi, school bus for Students, Scholarships etc.</li> <li>Benefitting sizeable number of students, teachers and parents year on year</li> </ul>
Health Care	<ul> <li>Companies/Lessees contributed to State of art health facilities, Health campaigns, water facilities, household toilets across Goa</li> <li>Hospital, Community medical centers, Mobile Health Vans, Created safe drinking water supply schemes etc.</li> </ul>
<b>Livelihood</b> (Source: Industry / MFC	<ul> <li>Over lakhs of people particularly women from various self-help groups have been benefitted under various livelihood initiatives by the companies</li> <li>Crop development, Hi-tech commercial farming, Micro- enterprises, SHG women federation, water harvesting &amp; irrigation</li> </ul>

Some photographs showing welfare activities and Environmental Protective measures are shown in **Annexure D**.



# CHAPTER 5

# LIVELIHOOD REPORT - Key Takeaways, Workshops, Discussions & Random Field Check:

The White Paper on Livelihood had been prepared by a NGO, Goa Livelihoods Forum & FIDR on the basis of the study conducted through a household survey across all Talukas of Goa, number of respondents was 2,834 or minimum 200 for each of the 12 Talukas *(White Paper on Livelihood Goa 2019)*.

The Paper is a situational assessment of livelihoods, income, sources of incomes and quality of life, in the backdrop of Goa experiencing a big change in the economics of dominant sectors - mining, tourism and hospitality and others. It also studies the impact of mining closure on the prevailing socioeconomic situation of the local people. The Paper offers possibilities of policy and implementation interventions and braces the state to tackle the growth imperatives for the next generations.

# "FINDINGS RELATED TO GOA MINING

# Pre-shutdown of Mining

- 1. About 5 years back, Goa topped the country in household quality of life at 16.2, ahead of *Gujarat's index of 13.2.*
- 2. The census established Goan's as being India's biggest electricity consumers (96.9 per cent), LPG users (89.9 per cent) and computer owners (31.1 per cent).
- 3. Goa witnessed high growth in household savings and was one of the few states where inflation declined.
- 4. Deposits of scheduled commercial banks per person grew by 8% between 2011 and 2013 while average growth in small states was only 4%.
- 5. Affluent urban households grew by 10% between 2009 and 2012 while average growth in other small states was less than 5%.
- 6. Increase in domestic tourists & the mining boom helped raise the per capita income to over twice the amount by 2011.



7. A 2001 study by Mendes highlighted that the <u>socio-economic of people in mining regions</u> <u>is better compared to non-mining regions in Goa</u>. It found that mining brings ample employment, business opportunities, improved economic status, higher literacy rates and has positive impact on women.

### Post-shutdown of Mining

- Survey was conducted on 2,834 respondents and it was found that <u>30%</u> of the respondents were <u>either not working or were drawing government pensions</u>. The survey results clearly demonstrated a <u>sense of all-round gloom</u> in the state economy and social life.
- 2. The closure of mining has dealt a <u>devastating blow to the livelihoods of people</u> which includes both in mining and non-mining areas. Agriculture, art & craft, tourism and all allied industries have suffered because of suspension of mining activities.
- 3. With mining closure, the <u>drop in income level has been very sharp</u> not only in mining talukas but the impact has been felt all across Goa. Post closure, there has been at least a 30% drop in income across Talukas and in some Talukas like Mormugao the drop is <u>as high as 50%</u>.
- 4. Stoppage of iron ore mining in Goa has <u>impacted revenues worth over Rs 34 billion</u> and the livelihoods of several dependent segments have been affected and left the stakeholders of the industry without any alternate sources of income. The savings of the households have dipped drastically after the closure of the mines.
- 5. Has resulted in loss of direct and indirect employment and has <u>affected over 3,00,000</u> <u>households</u> in Goa.
- 6. Threat to increase of <u>NPA'S for banks</u> as entities in the mining machinery; trucks etc. have lost their earning potential. This has put a burden on the financial institutions.
- 7. The total contribution of mining and its activities to Goa's state gross domestic product (GDP) has been much over 15%. For two consecutive years, the Goa government, in its annual budgets has conceded that around <u>20% of its GDP decline is attributable to mining</u>. The economic survey shows that Goa earned Rs 244.9 crores just as royalty in 2016-17 from iron ore extraction and exports. Since 2015, the state has collected Rs 118.7 crores for Goa Mineral Ore Permanent Fund.
- 8. Led to major loss of investor confidence which would have a long-term negative impact on Goa's economy.



- 9. The psychological and social costs of prolonged unemployment post the ban on mining in Goa has impacted harshly on the quality of life of affected individuals and families. Experiences of low self-esteem and loss of self-identity impact on physical and mental health and can extend to broader consequences of social isolation and the loss of social networks and support. The impact of redundancy causes family disruption and breakdown.
- 10. Unemployment has been known to induce substance abuse. This savage impact can foster suicidal tendencies, marriage breakdowns, drug and alcohol abuse and much more. Goa has been hit with similar aspects of increased alcoholism leading to family upheavals and higher reported cases of domestic violence as a result of the same.
- 11. Over 82% of the respondents opined that in the near future the economy of the state would be further damaged due to the mining imbroglio. They also mentioned that youth out migration is high but would be much higher in the coming months and Goa would be a state with much of the youth and next generation absent.
- 12. Mining had helped build a SME of truckers, machine contractors and owners of river barges. Mining and related transportation and mobility industry (including mechanics/garages, maintenance, drivers, support staff) had galvanized downstream establishments catering to well over 25,000 trucks, machinery, barge building industries and a large contingent of contract workers, creating a ripple effect on the economy of those areas, and indirectly providing employment to 1.5 lakh according to government estimates (only belonging to the allied industries and occupations). These people have since fallen back on an agrarian and high risk and vulnerable job economy, with all but the more hopeful waiting for resumption (about 68% of our respondents).
- 13. It is recognized that strategies had been adopted by mining companies to address the externalities of mining development. But in most cases, people felt that broader community provisions should have been driven and implemented pragmatically by individual mining companies or the associations, in a more structured and collaborative manner. Although Mining companies have undertaken targeted interventions in the communities, worked in about 26 villages across five talukas with a goal to discharge the responsibility for the company's operations and encourage a positive impact through its CSR interventions in the community. Over 30% of the respondents weren't aware or didn't mention as the top of mind recall the community interventions of the mining companies.



14. During our assessment, we have noticed groundswell in favor of resuming or protecting the livelihoods of people cutting across talukas, villages and other alignments. It has come out clear from this assessment that mining closure has not only affected the mining areas and their economies and households. The embargo on mining has affected the economy of the entire state. People groups from all over the state have been demanding – from Panchayat onwards, the resumption of mining. Pro-mining agitators have protested even in the national capital demanding the resumption of mining which was banned on orders of the Supreme Court. The protests have been aimed at getting the attention of MPs at the winter session of Parliament. The demand has been to "amend the Mines and Minerals (Development and Regulation) Act which will allow existing mining leases to be renewed faster, instead of auctioning them which will take time.



# Stakeholder Workshop - Socio Economic concerns due to Suspension of Mining Operations at Goa:

In order to access inputs from Stakeholders who had been adversely affected due to the Stoppages of Mining Operation since March 16, 2018, a deliberation was held on 20<sup>th</sup> July 2019 at International Centre, Dona Paula to receive inputs from the affected. Please refer photographs compiled and appended as **Annexure-E**.

The Group consisted a mix of affected logistics suppliers, machinery owners, Panchayat member representatives, employees, related services, shipping and Port labor related representatives, Barge operators and Community representatives.

The group expressed deep anxiety and a sense of distress due to delays in addressing the issue of resumption of work and employment. Certain sections expressed that repeated survey works have not yet reached effectively and hence were skeptical on another survey. A sense of urgency prevailed where the affected parties expressed their voices to be noted and taken up at the decision makers where at least there was hope on being heard.

The audience expressed that there had never been such drastic situation faced by the Community in the Mining Belt as being faced currently wherein families who have been stationed in the State were forced to cut down on their spending and other lifestyle changes with no hope of alternatives. Concern on deteriorating assets, non-performing assets and loss of face whilst seeking loans, ancillary activities as well as Markets in rural areas had taken a huge hit.

Expression on alternatives arrangement of work had been expressed but skill set with present affected was found lacking and hence despite hardships, employability or even shifting to alternative work was indeed a challenge.

Concerns were also raised on the reach of the District Mineral Funds collected, which had not yet reached to improve the socio economic upliftment of the villages in the mining belt for which the same had been collected. Certain voices were also critical on the empty promises being given by the elected community to resolve the impasse or even putting it effectively to decision makers.



Due to the strong sentiments being expressed on it was also felt a need to carry out certain random field visits to get the sense of sentiments expressed. A detailed field survey is not envisaged due to the time concerns, similar other livelihood report recently undertaken and also realizing that the stoppage of activities over a considerably longer time may create certain resentment on the ground levels causing further anguish.

Excerpts of the Sentiments expressed are collated and appended as Annexure-F.

# Discussions with Departments, Panchayat and Block Development Officers from Respective Areas & Shipping & Ports Representatives

Discussions with Concerned department and others have pointed out that the State Government is concerned with the Continued stoppages and efforts have been made by the State Government to discuss the concern with the Central Government to address the impasse considering the unique position in regard to historical aspects for Mining Operations in the State of Goa, the impact on State's Revenue due to the Impact as well as livelihood issues faced by a sizeable population in the State of Goa, who had been dependent on the industry.

Discussions with Block Development Officers / Panchayat Representatives have also indicated that concern is serious. There has been an interesting input and especially from Non Mining areas wherein these representatives have also indicated that a capacity was indeed required for Mining in the State. This incidentally had been addressed by the Hon'ble Supreme Courts earlier as well.

In the mining belt the responses were more Direct and drawing differences between amenities in the more developed Coastal Taluka's and the lack of Skill development training as well as other alternative Industrial set ups which can address employment concerns more effectively. Other Concerns such as CSR works which were earlier taken by Mining Companies as well as water pumping from Mining Pits to provide water for irrigation or agricultural requirements were reduced and more effort was required to get the State Government's permission to pump water.

Obtaining additional loans were a concern raised in the Mining belt as many who had earlier taken loans were unable to repay and as such additional Loans were not encouraged by banks. As such people were slowly resorting to selling of some of the assets earlier procured to sustain



their living and expenses had been curtailed. Certain Government Schemes i.e. Griha Aadhar Scheme (GA), Dayanand Social Security Scheme (DSSS) etc. were being utilized by people to ensure earnings.

Improved Medical facilities are required as those supported by Mining Companies have slowly phased down such operations in the last year or so.

The proceeds of District Mineral Funds are yet to reach the affected people and it was hoped that these proceeds would be utilized in the Mining belt and not for other regions which are free from mining operations.

The Shipping and Port Representatives indicated on the collapsing ancillary support activities *i.e.* Shipping agents, Stevedoring, Sampling stations, Port Operations amongst others

Excerpts of the Sentiments expressed are collated and attached as Annexure-G.

# Feedback from the Field Visits Conducted in October & November 2019:

Subsequent to the feedback received from the Stakeholders, random Site Visits were also designed to capture the basic information and living conditions in the Mining Villages. Please refer field visit photographs appended as **Annexure-H.** 

In total, 21 Villages were surveyed, 17 in North Goa and 4 in South Goa with a sample lot of 1327.

Substantially, to a large extent those surveyed had been living there since birth and in certain cases joint families were a source of dependency and possibly comfort.

In all cases, there had been a sharp drop in their earnings as well as savings. Instances of approaching Government aid i.e. Griha Aadhar Scheme (GA), Dayanand Social Security Scheme (DSSS) & other schemes seemed more prevalent in certain villages. Interestingly, many villagers did not seem aware of the creation of District Mineral Funds and its objectives which could benefit their region.

Most of the unemployed in the sample surveyed did not have the qualification or the skill and experience required for alternative employment.



The overall findings of the survey are as follows:

- 1. The post mining stoppage phase has seen a decline in the monthly incomes thereby a decline in the monthly expenditure and savings. Over 90% of the people surveyed have acknowledged the negative impact of the stoppage of mining on their livelihood.
- 2. It was reported that average monthly income has dropped, thereby resulting in lowered expenditure and erosion of savings.
- Overall, 34% of the sample lot surveyed indicated have certain loan liability. Of these, trucks amounted to 31%, Housing to 9%, 13% towards personal loans, and 46% on others (gold loan, marriage loan, education, shop, vehicular, etc.)
- 4. Survey also indicated that affected have shown inability to switch to alternate sources for livelihood, while only less than 10% have found alternate sources. It is also inferred that there was general reluctance towards displacement.
- 5. Nearly 99% of the population surveyed, supported the resumption of mining activities, whether affected by mining stoppage or not.

Questionnaire Feedback Basic Data is appended as Annexure-I



# CHAPTER 6

#### **Concluding Remarks:**

The State of Goa is largely dependent on Mining and Tourism as its Economic pillars apart from Service Sectors and Small Medium Enterprises (SME) set up in Industrial Estates. The Investment Promotion Board set up by the State of Goa in more recent times is also attracting investment in Goa amongst other business houses wishing to set up operations in the State and to ensure Ease of Doing business in Goa.

Shipping, Pharmaceuticals, Education, Medical and Eco-tourism are also being prospected.

Mining and Exports of Low grade Iron Ores from the State of Goa have been a one of the strong economic backbone to the State since operations commenced in the past and carried thereafter with different colonial powers. Initially from the Portuguese regime and since 19<sup>th</sup> December 1961 as a union territory of India. Secondly, the symbiotic relations how such operations were conducted with Stakeholders in the periphery of the operating mines.

The Study undertaken earlier by this Institute assigned by the MoEF&CC had and later been tabled in the Hon'ble Supreme Court which also suggested certain measures for Improvements in certain sectors apart from suggesting a Cap for the State of Goa based on available and suggestive improvement.

Post the recommencement of mining operation in 2015 *(after a 3-year hiatus)*, with additional safeguards, the industry stakeholders big and small, public and private had invested substantially, however post March 2018 suggests an acute uncertainty looming over the industry, resulting in gloom and unrest.

In addition, the Stoppage has resulted into:

- 1. Irreparable damage to State/Union's economic activity, GDP and foreign exchange. This is resulted in year to year increase in the Debt of the State Government. On careful examinations of the State's own financial status look alarming.
  - Over the 5 year period ending 2008, Goa's mining industry contributed on an average 16% of the state output (GSDP).



- Due to the intermittent mining operations, over the last 5 years (2014-18), its contribution has reduced to ~1%
- Post (April 2018 onwards) the Contribution to Goan economy has dropped to Nil.
- Concern on Development Plans Increasing Loans from open markets coupled with inability to service the debt will result in considerable reduction in spending.
- 2. Apart from loss of employment, both direct and indirect, it has resulted into financial liabilities on these families in terms of various loans and borrowings.
  - Direct & Indirect: ~ 60,000
  - Dependents :~ 250,000
  - At 34.5%, Goa had highest Unemployment rate in the Country (CMIE report, Nov 2019)
  - *Restricted Earnings result into lower spending and depleting savings.*
- 3. Loan amounts which have been advanced to various entities/individuals for purchase of mining machinery/trucks/barges as their earning potential get reduced greatly thereby increasing the Non-Performing Assets of Financial institutions.
  - Loss in credibility in market
  - Assets getting attached.
  - Collapse of Barge Industry Outstanding 262 Crores in Nationalized banks Outstanding 101 Crores in Cooperatives
- 4. Create technical economic hurdles and safety impacts of the Mining Pits if left unattended for a longer time.
- Stoppage of various people centric projects funded directly or indirectly by various Mining Companies & Mineral Foundation of Goa in the Past. Funds collected under District Mineral Foundation ought to reach the mining affected areas.
  - Prior to Stoppage ~ 75 Crores/Annum were being contributed by Industry towards various social endeavors.



- DMF Collections ~ 90 Crores/Annum (on FY 16-17 being the year of 20MTPA Production as reference) but are yet to be spend for development of mining affected areas.
- 6. Abrupt stoppage results severe loss of investor confidence. The impacts have not been qualitatively estimated.
  - The market share that was Goan Ores internationally for long has been automatically absorbed by Competitors.

#### Way Forward:

- Undoubtedly, Early Resumption of Mining in the State of Goa is extremely vital.
- Any necessary changes in the Mining Acts & Rules should be a stimulus to undertake sustainable Mining Operations and Practices and such must be progressive and not lead to a situation of unease.
- Redressing the current impasse either through a Legislative means within the framework of the law or through judiciary means to ensure that the State's Economy and the livelihoods are saved from the present impasse would ensure a justifiable solution.
- Mining Operation being an important economic activity in the State of Goa, must commence sustainably and on exhaustion of Mineral deposit, mines must be scientifically closed as per the Mines Closure Plan prescribed so that future generations would derive additional benefit.
- Skill Developments for Alternatives in the future to be carefully planned and effective use of District Mineral Funds generated from Mining Operations to be put towards tangential Improvements within the Mining belt



## **References:**

- Economic Survey Reports Govt. of Goa FY 2005-06 to FY 2018-19
- Budget at a Glance 2013-14 to 2018-19, Government of Goa
- Reports from RBI Study of State Finances and other websites
- A Whitepaper on Livelihoods Goa Livelihoods Forum & FIDR
- A Study on Contribution of Goan Iron Ore Mining Industry NCAER Reports
- Various Selected Statistics from the Goa Mineral Ore Exporters' Association
- Various Annual Reports of Mineral Foundation of Goa
- Representations made by the Industry, Goa Mining Progressive Front, Logistics and Port suppliers to the Authorities
- Concerned Judgements of the Hon'ble Supreme Court of India
- Affidavits filed by the State Government and others in the Hon'ble SC, including on the Socio-Economic effects in the State of Goa
- Various independent representations made by Village Panchayats on the need for resumption including certain representation made by the State Government
- Details on Taxes paid by the Industry to the State Government and other Authorities
- Relevant information as available in the website of Planning & Statistics, Department of Mines & Geology and other Departments
- Representations made by FICCI, Institutions of Engineers, FIMI, GCCI and others towards sustainable resumption of operations in the Country
- Various research reports and representations prepared by Institutes, NGO's and others.
- Media reports Print as well as Documentary
- Regional Environmental Impact Assessment Report 2014 Goa, IIT ISM
- Rudderless Democracy Mr Aravind Bhatikar
- Un-employment in India A Statistical Profile CMIE report, 2019

# Annexure-A





Govt files review petition in SC on mining closure CM says govt concerned over effects of ban	SAWANT SPEAK Although delayed, our faith in May Devia (god of justice) remains strong We are deeply on-	der which cancelled 68 active mining leases. Chief Minister Pramod Stwant announced. Sawant said the govern Sawant said the govern ment was moved to file the moview petition head by an dephy concerned by the eff deephy concerned by the eff attempts broards safe. This major step is one deephy concerned by the eff attempts broards safe. The Summer charines of our many persistent and an eff safe. The Summer charines the government should have and an eff safe. The Summer Caurt in its on-	dependents and Goan re-	Isemment totasy, Autougn de- Goan economy, he anoted, radong au reveant maternal layed, our faith in Nyay Dev- In hity while speaking in into consideration and ignor- ta (god of justice) remains the Goa Legislative Assembly ing available relevant material strong. We are deeply con- Stavanthad promised that the and therefore not in the inter- strong by the effects of min. State would file a review peti- ests of mineral development <sup>7</sup> , into chosure on houlihoods of tion.	"We should have filed a re-obliged to grant fre of view witt petition then itself. leases in accordanc is It was very important to file and not second re ra the review wit potition at that time immediately. There	<b>Govt files review petition</b> <b>in SC on mining closure</b> the mining lease holders," the SC ruled referring to its seatler judge- ment of April 2014, which had de- clared that Goars mining leases had expired in November 2007 and in- stead of being renewed, should have been granted afresh. The Supreme Court had also opened the path for the government to grant fresh leases "as early as reasonably practicable" something the state government has been refusing to do since the process the State govern- ment wants to avoid.
Operful of resumption of mining by December           www.         www.           wwww.         www.	Carved researce the earliest, Carved researce the earliest, Carved a researce at the most the missing delegation want to most the Prime Moster and discuss bases researce is taken on fast such basis, the matter is taken on fast such basis, then missing matter will be disposed	Surla gram sabha calls for early mining resumption	Team Heraldstarted some otherBICHOLIM: The Surlaprojects in the miningBICHOLIM: The Surlaarea, provides job op-gramsabhaunani-portunitiesto locals	isly demanded that and not the out mining activity be The villagers med as early as manded that the sible. pensation of he gram sabha saw crores, which w	attendance of proved by min ich Krishna panies agair and panchas losses suffe ia Khodginkar, farmers, shou tundaikar, Vinita leased to the	Ghadi, Chandrakant without any further Ghadi, Bhola delay. Shirodkar and delay. Other issues dis- Shirodkar and cussed included bring- Prashant Gaonkar. Other issues dis- ing about 80 per cent agricultural land from lagers demanded that surla village under cul- the State government tivity as early as possi- tivity as early as possi- tivity as early as possi- ble. They also to provide safety to demanded that mining River Mhadel, which is companies, which have the lifeline of Goa.
S after shutdown, Goa Dreview mining order Mining order Mining order may esteration may esterati	withol multiple access are granted or remewal. The po- granted or remewal. The po- trains states that Section Ac- dition states that access that while a states and that point the state allowed the will for goars. For state allowed the Supremotion state that and the Supremotion state that and constitute states case.	Govt to e-auction 5.34 million	EARNINGS OF RS 600 CR EXPECTED THROUGH SALE AT CURRENT INTERNATIONAL PRICES	ONISSUEOTACIUANINGACITUIIS The Samathed The Samathed	end in the interview of the second second second second second second second second second second in teach resolution of the strong area of the ing the outcome of a pending mining leggl langle the Strong area of the ing the outcome of a pending the Strong second to belong to petition the shoppmet court, infining leggl langle area of the ing the courtome of a pending the Strong second to belong to petition the shoppmet court, the Strong second second second second second the Strong second second second second second the Strong second second second second second the Strong second second second second second second the Strong second second second second second the Strong second second second second second second the Strong second second second second second second the Strong second second second second second second second the Strong second second second second second second second the Strong second second second second second second the Strong second sec	Initrophytic of the production of the initial production of the ini



# Annexure-B

B
(Annexure-H
1
В
G
E
-
V
~
V
::
le
9
Table

# YEARWISE CONTRIBUTION OF MINING IN STATE'S ECONOMY

₹ In Lakhs

	-	-		-			CIMPT III
YEAR	PRIMARY	SECONDARY	TERTIARY	TOTAL	MINING	% of Mining in Primary	% of Mining in GSDP
2005-06	199290	584553	648818	1432661	66973	33.61%	4.67%
2006-07	283408	635243	733633	1652284	154662	54.57%	9.36%
2007-08	394304	704491	857701	1956496	253255	64.23%	12.94%
2008-09	576977	864428	1099978	2541383	427857	74.15%	16.84%
2009-10	666123	969675	1276756	2912554	500345	75.11%	17.18%
2010-11	854919	1735550	1725189	4315658	667856	78.12%	15.48%
2011-12	847915	1861030	1231621	3940566	643618	75.91%	16.33%
2012-13	437289	1710767	1339245	3487301	208663	47.72%	5.98%
2013-14	315688	1411116	1475558	3202362	3977	1.26%	0.12%
2014-15	314677	2323289	1681083	4319049	3811	1.21%	0.09%
2015-16	382757	2717008	1855158	4954923	31568	8.25%	0.64%
2016-17	554490	3082173	2036160	5672823	152218	27.45%	2.68%
2017-18	632439	3382047	2339719	6354205	97859	15.47%	1.54%

# Source: Economic Survey, Goa

# Annexure-C

3	5
4	5
	D
-	
-	A
	0
-	
-	Ĭ
(	7
É	-

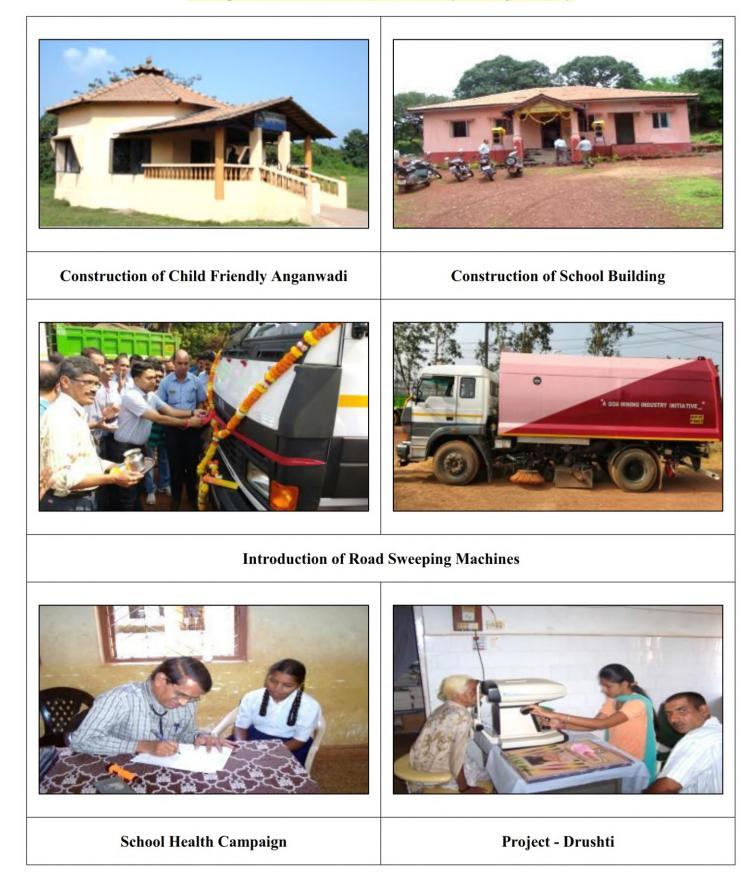
# Public Debt of the State as on 31st March (Rs in Crores)

#S	Type of Loan	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019 (RE)	2020 (Est.)
1	Central Loan and NSSF	3465.50	3539.43	3544.82	3384.65	3616.51	3679.07	3794.82	3835.43	3995.95	4091.49	3963.20	3763.03	3539.69	3318.35
2	Market Loans	1107.70	1477.36	1881.12	2398.80	2610.06	2761.18	3756.18	4637.53	5304.36	6589.00	7760.00	9160.00	10160.00	11060.00
3	Loans from LIC	26.68	24.69	22.70	20.71	18.72	16.73	14.74	12.75	11.05	9.40	7.75	6.11	4.46	3.27
4	Loans from NCDC	1.19	1.00	1.33	1.08	06.0	0.81	1.03	0.89	0.82	0.63	0.60	0.58	0.68	0.68
5	Loans from NABARD	18.18	12.35	77.36	158.56	252.86	312.60	395.55	451.57	539.10	579.49	596.16	620.14	599.06	578.06
9	Loans from PFC	57.40	61.96	89.12	110.07	114.28	101.71	108.48	96.09	84.47	73.91	67.44	61.24	54.77	48.30
7	Loans from HUDCO	13.38	9.71	6.58	3.46	0.81	0.27	0.00	0.27	0.27	0.27	0.27	0.00	0.00	0.00
	TOTAL	4690.03	5126.50	5623.03	6077.33	6614.14	6872.37	8070.80	9034.53	9936.02	11344.19	12395.42	13611.10	14358.66	15008.66

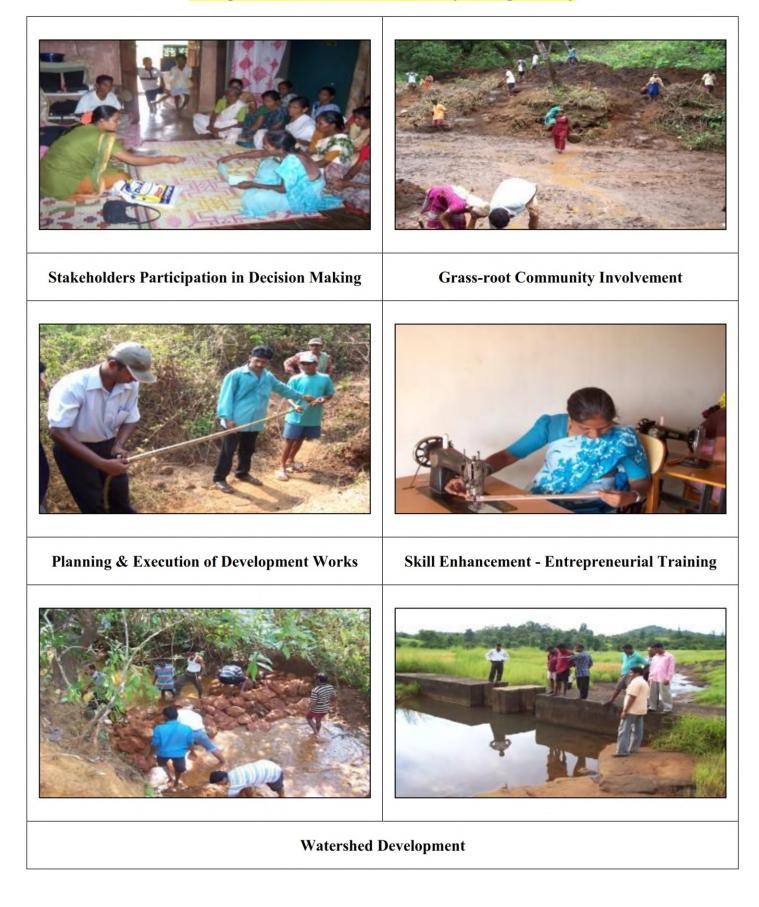
Budget at a Glance - Govt of Goa

# Annexure-D

#### Annexure-D









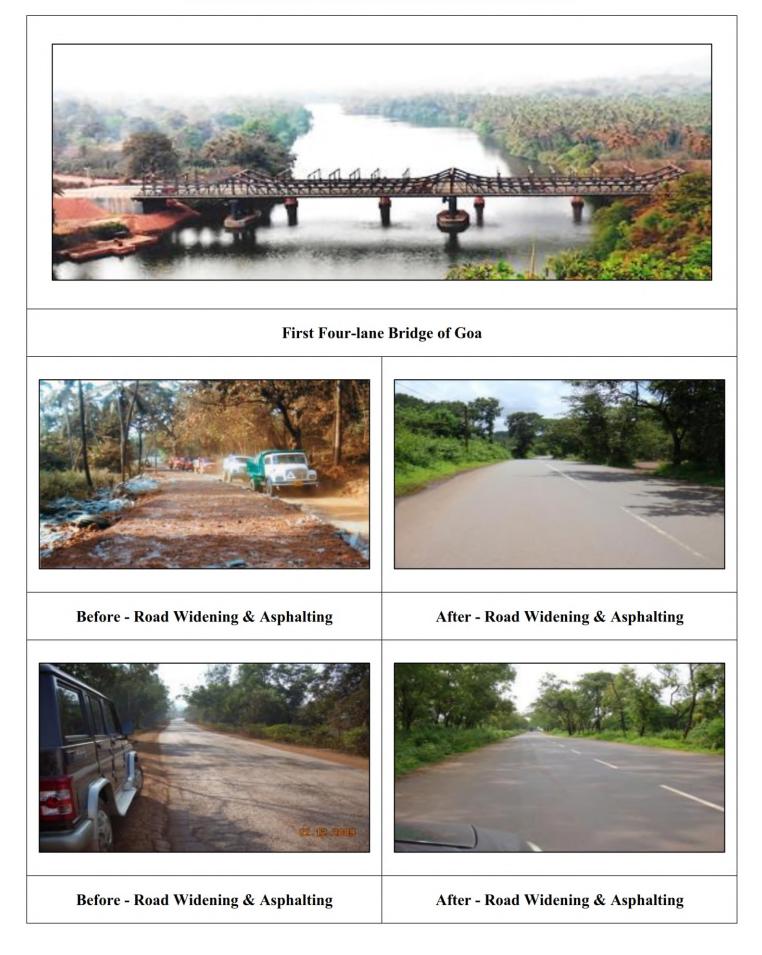
# **Community based Eco-tourism**



# Community based Eco-tourism



Successful implementation of Strawberry Cultivation at Verlem





**Industrial Training Institutes Run by Mining Companies** 

# Environment Protection Measures Undertaken by Mining Industry



Use of Geo-textile on Dump Slopes for Slope Stabilization & Erosion Control



Provision of Settling Ponds Ensuring Discharge of Clear Water



**Afforestation - Native Plant Species** 

# Annexure-E

## Annexure-D

## **Snapshots of Stakeholders Workshop**

























# Annexure-F

#### Annexure-E

## Sentiments of the Stakeholders expressed during Workshop

#### Goa Barge Owners Association (Atul Jadhav)

- In 2012, there were 304 Private Barges and 62 Barges operating. Presently the total number is only 20% of this, even for which there is a repair works.
- Each Barge costs 5 crores, Employment generated in Past were ~6500 barge crew itself. Currently no work, except few barge crews of Exporter Barges.
- Barges built to requirement of Trade.
- Even in Past (2010) GBOA had asked Govt. of Goa to put a cap on building more barges, however Govt did not agree.
- Stoppage has caused irreversible damage to barge owners. No loans offered. On contrary assets / houses are being attached. Even Govt has not helped.
- 72 workshops stopped. Talent lost. Difficult situation to come out for no fault of barge sector.
- SC has not taken cognizance of difficulties. NGO's go and stop operations in Courts.
- Masters on barges, which is a technical job, are today taking jobs of security guard / watchman to feed his family.
- What have we done to deserve this?

#### Mahesh Gauns (Truck owners Association - Pale)

- Angrily, Enough of Survey work. All do survey and not progress thereafter.
- Come to village and see out condition.
- All trucks declared as NPA'S (Non-performing assets)
- Earlier banks calling for loans without collaterals and now we are not even entertained to step inside banks. Reputation damaged. Even to purchase a motor bike we have to give guarantee. This is our condition

#### Manu Thakkers (Steamer / Shipping AGENTS)

- Stream of activities involved.
- In 2010, all stakeholders only in the shipping sector in Mormugao / Panjim were in the range of 1500 / 190 people.
- Lots of allied services such ship agents, Repairs workshops, Ship Chandelers, Laboratories for sampling, launch owners, Stevedores etc.
- In 2010, Over 100 crores was the earning in Vessel related charged in Mormugao port alone, post stoppages, all work and employment is lost. Even MoPT started VRS.

## Laxmikhant (Mormugao Employees Representation)

- In 2010, Mormugao port itself have over 4000 employees, post stoppages, MoPT could not effectively pay salaries as the major commodity of iron ore was stalled.
- Had to close port, and scrap plant. At berth 9, plant costing 700 crores was sold as scrap for 40 crores and operations given on privatization.
- VRS floated by port, reduction in workforce. Even 4000 pensioners have to face difficulties.

## Balaji (Truck Owners)

- Earlier over 22, 000 Trucks of which 12800 registered with Mines Department of which 6800 were in good condition to operate.
- Tipper trucks only for mining.
- Road building contractors have own non tipper trucks. We have no work!
- Truckers have slowly increased their machinery over years of hard work.
- Now have to reduce quality education as unable to pay fees.
- Please do survey and visit mine site areas.
- Earlier Mining companies used to provide CSR works too in villages, now totally reduced.

## Mahesh Gauns (Panch Member)

- Companies providing some services earlier.
- Govt is now talking about Dump mining? Do they know what is a dump? And whether there is any commercial benefit? What is the grade of that dump? Is there a demand.
- We don't want false promises; we want resumption of mining leases.
- Don't want other non Goan companies.
- Government data is misleading, Assumption that Goa is one of the Richest State is not correct. There is Rs 1,31,000 loan / debt on every citizen of Goa.

## Chandrakant Gauns (Goa Chamber of Commerce & Industry)

- In 2014, report submitted on capping! We had hopes of maybe 20 to slowly increase to 30 million tonnes.
- But now, we see a 6-7 decade industry stopped totally
- 10,000 crores of assets deteriorating.
- Reputation spoilt.
- We have paid taxes, whenever government demanded. And now what is our worth?
- Our families also are stressed? Where do we go?

## Sandip Parab (All Goa Machinery Owners)

- Machinery owners have become vegetable vendors
- The limited news that people have taken to agriculture is a MYTH.
- Not possible to economically operate Agriculture.
- My son is in 12<sup>th</sup>, had intentions of becoming Doctor, incomes hit, dreams crushed.
- If mining does not start, dacoity may start.
- Many people in mining areas have low credit likeability, hence can't get loans

## Nitin Shivdekar - Panchayat Member (Sattari)

- Bank Loans high in these areas.
- No Jobs.
- If situation continues there are more chances of suicides taking place.

## Workers & Employees working at Mines

#### Anand Naik (Worker)

- Workers are not allowed to enter banks!
- Confirmed and daily wage workers hit.
- Companies have slowly retrenched. Even ours (Sesa) half payment now but till this month.
- A worker is +40 years of age is at a threat. Who will employ him at this age? Who will give jobs?
- Goa has highest workers in Govt institutions, this may be a reasons. And such people who are having comfortable job with the Government institutions may not be bothered on resumption as their incomes are guaranteed.

#### Saiyeshree (Sesa Vedanta Employee)

50% salary in this month after deductions may go negative.

## Prasad Bhandari (worker in Sanvordem)

Purchased plot earlier on basis of ongoing activity to build home. Now difficult to pay loans. Even to have full 3 meals is getting to be an issue.

## Noor

Daily wages cut. No work. How to sustain? Situation is pathetic. Please do a factual report and inform Supreme Court. Our lives are miserable.

## Santosh Bhagat (Sanquelim)

We have to think many times on how to spend even on essentials. Many companies have laid-off.

There is a need to present the reality of mining dependents and hardships faced by them post mining suspension.

## Somnath (Employee)

- Was working with VMS as electrician. Our productive life was in mining. Now we are jobless.
- No other sectors giving us a job. How do we take care of our families?
- Please help.

#### Saishwari Kadam

From coming month, employees of her company would be paid half salaries. It would be difficult to sustain.

## Prashant (Supervisor)

- Supreme court have only heard NGO's
- News is changing every day on paper. Govt's are misleading.
- Please take our please to the court.

#### Gandha Talaulikar (Social Sector)

It is not possible for women to suddenly relocate in mid of their careers / families. Mining is a male dominant industry where even today many women are trying to establish themselves. Questions about Women Empowerment in the country.

Discussions concluded.

# Annexure-G

#### Annexure-F

## Discussions held with Government / BDO's / Panchayats (September 30<sup>th</sup> - October 7<sup>th</sup>, 2019)

#### **Director - Directorate of Mines & Geology**

The State Government supports sustainable mining and is looking forward to resumption of Mining in the State of Goa.

Mining Operations in Goa have an historical account and can't be compared to mining in the Rest of India. Prior to its suspension in Sept 2012, Mining Contributed sizeably to the State and Central Government in terms of Royalty and other taxes. Post, Part resumption since 2015, The State had earned over 600 Crores per annum. However, in FY 2018-19 onwards the collection has been Nil. Other than Royalty, other private losses to Private Organization or Government haven't been calculated by the Department although the losses would be sizeable.

The Compensation Scheme to Machinery Operators and Transport Contractor which were initially initiated has not been renewed in present times. The Revenue of the State Government also has been adversely affected.

Sustainable operations and the capping as being decided by the Hon'ble SC is being factored in terms of regulated trips, Vehicle Tracking systems, not only to check quantities but speeds too. Such Georeferencing was initiated from 2015 onwards.

Perception of NGO's is sometimes extreme. Loss of Livelihood is causing a serious footprint on the Ground.

Other than direct Stakeholders, small time business such as tea stalls, Restaurants, workshops along transportation routes are also impacted largely. Since, these have not been recorded it is not possible to provide quantitative losses of these livelihoods.

Mining should begin with capping and sustainability should be kept in mind.

## **Block Development Officers**

#### Bardez

As Bardez is in a non-mining belt, by and large it is felt that the State of Goa can't take anymore augmented mining as it has impacted its natural ecosystem.

To a large extent, the mining companies and stakeholders on Mining want mining to resume quickly. It is probable that other economic means can also start to address some of the economic impacts caused due to stoppage of Mining.

While Mining did generate sizeable revenue to the State's Treasury and created employment, there is a need to start mining only with a sustainable capping.

In non-mining belt, perhaps the Goan Population is relatively higher educated and can possibly get employment in other organization although each organization require skilled workers. Nevertheless, if mining has to resume, then capping is a must.

## **Bicholim**

There is not much choice for other livelihood for people in the Mining belt and there is limited source of Income. Mining was providing a reasonable employment benefit not only to workers but also indirect stakeholders.

Since stoppage, the standard of living has come down and for certain, affording even a decent meal is a challenge in certain quarters.

Although the affected workers have been protesting to the Government and others, their problems are still unresolved but met with promises. Some are trying to migrate or move out of state but these may be rather limited as they have joint families who are dependent.

Providing quality education has become another worry for parents. Earlier mining companies used to provide for transportation for school children in certain pockets, but now that has stopped.

Water supply form the Mining pits which were initially done by mining companies have stalled, and partly the Water resources pumps in certain sectors.

Thankfully, there are not much incidences of suicide or mental related cases caused due to stoppage so far but the population engaged in mining have shown a lower consumption of materials in the market places and this has a spiral effect too. So, sales too have been affected. Spending has come down to a large extent.

Truck owners have become drivers and labourers at construction sites and in agriculture. It is still difficult to get employed as an agricultural labour because daily wage is expensive at 700 INR. Few transporters who are now unemployed are also attempting to go in the forest lands to bring fruits, vegetables and flowers to sell.

Many Barges have rusted and may be rendered useless for further operations.

Mining should start with security and safety of physical health. Since most of the people rely on mining activity; it should start legally so that the employees, workers and those directly impacted don't suffer in any way.

## Ponda

School transportation has become a problem. The lower class of workers are the most affected as there is no alternate livelihood.

Loans on trucks were partly assisted by the State Government Banks on differed payments to an extent and certain family assistance amount was paid by the State Government in the Past but not anymore. Moreover, there is nothing for the working class now rendered without work.

Ponda town is fairly affected as people are also employed in other organizations apart from Mining, however one can see the effect.

Deterioration in mental health is not reported so far. However, people are anxious about the case of E-auction of leases as they feel that outsiders would migrate and take their jobs, create social insecurity as well too. Social insecurity is an uneasy feeling.

## Sanguem

Mining revenue was received by the state government and used to develop the works in the Panchayat.

Amounts collected by Panchayats in terms of Octroi too have been stopped. Moreover infrastructure was also been constructed due to Mining and this has led to a connect with remote areas and the smaller towns.

Post, October 2012, has created hardships. There is limited industrial development in these areas and therefore employment is a concern. Also, in terms of education, alternative employment is a challenge due to new skills which would be required for alternative works for which one would require to travel to Towns.

People are attempting to move towards farming back, but it is not as lucrative in terms of earning when compared to mining. Besides, landholdings are limited and commercial ventures expensive, hence manual farming is still being resorted and this has limitations. In any case, to restart farming has become a struggle.

Government schemes are not able to support people. Most of the time they do not reach out to the needy.

Transportation, medical facilities and scholarships were provided by mining companies. Government doesn't provide these here.

Economy is down. There is huge impact on people who were indirectly benefitting from mining activities. There have been numerous instances that people earlier living in towns and cities are moving back to the villages as they are unable to afford higher cost of living in cities. Mining should restart soon but a mining corridor should also be developed. There should be restrictions in operations beyond certain limit so that the business is done sustainably.

## Sattari

Since over 40 years, people have been involved in the mining activity.

Although in certain parts Agricultural fields had been impacted due to dumping, it was regulated but practically it is difficult to practice now. Many people whose entire life's earnings have been invested and dependent on mining and related activities are finding it difficult to lead a proper life.

People took up education to get them into mining but have now become unqualified to find work in other sectors. These young people are jobless now. Their savings are over. People indirectly benefitting from mining are also affected as markets are down and spending restricted.

Deterioration in mental health is looming in families. People are not being provided loans to set up new businesses or for other needs because they are not able to pay old loans taken for mining related activities. The situation is grave because government has provided no alternate income or employment avenues and have not thought about the ill efforts of mining suspension without any adequate alternative

In certain vulnerable cases, Suicide cases have been reported, which may rise if government doesn't take a step to improve conditions.

Mining should begin keeping in mind women workforce. Additionally, more jobs to women are essential

## Village Panchayats

## Sirsaim, Bardez

Over 50% of the population was working at the jetty sites, transportation, workshops, support sectors and other mining related are mostly impacted now. Government schemes are not able to support the people's livelihood as these are meagre

Food consumption pattern has also changed. No alternative for workers working in mines. An alternate employment has emerged in the railways for some, although this is limited.

Huge negative impact on people who used to rent spaces to migrants as workers and driver as many of the migrants has left. Workshops are closed due to no work.

Educational scholarships and school transportation funded by mining companies in the past have ended. The DMF fund being generated has not reached the mining community for which it was designed.

Mining has to start soon, but Mining companies should maintain better practices in air and water pollution. It is essential that Capping is a must.

Medical facilities should be provided. Skill training programs should be organised. CSR mostly covers the people working in their companies but they used the village's roadways and waterways so all the people should receive benefits. Tree plantation should be done. Mining corridors which are separate roads, which are out of the public roads, should be created to cater to mining traffic.

## Pale, Bicholim

Mining is needed back because agriculture or other traditional avenues are not lucrative as compared to jobs in mining post and presently it is difficult to revive agriculture as populations have increased and so has the land ownership reduced.

Two generations of people relied on jobs created by mining both, directly and indirectly and have moved on to better pastures since.

Many Migrants have gone back but the residents are suffering too.

In the past certain People with loans on trucks and tippers were provided government assistance to waive their loans as well as earn a subsidy for living but that is not sufficient. Many people didn't receive the scheme's benefit.

There is limited money for education and school transportation. There have been cases of school dropouts. Higher education is also affected.

Some Suicide cases have been reported. Consumption of intoxicants seems to be on the rise. Few people have been jailed because they are not able to pay loans! But from where would they repay?

Mining is the backbone of Goan economy and its revival is urgent. The State Government too is also suffering although it is trying to put its best face ahead. .

## Bicholim, Advalpale, Mayem, Mulgaon, Sirigao in Bicholim

People are highly dependent on mining activity. School transportation has got affected. Educational standard is affected sponsorships by mining companies have stopped. People indirectly benefitting from mining are also affected. Self Help Groups also, depended on money earned through mining. From footwear shops to fish markets, all have been affected due to closure of mining. This recession has been going on since 4-5 years.

The standard of living has deteriorated over the years since the stoppage of mining. In certain areas, People are selling their assets to sustain themselves.

Migrant workers had been the first to get affected and have returned back to their hometowns. Attempt to suicide cases have been heard, including deterioration in mental health and alcohol abuse within families on the rise.

Mining should be undertaken legally and recommencement in a sustainable manner in the future.

## Navelim, Amona and Pilgao in Bicholim

Suspension has created a huge negative impact on workers especially those who had been working indirectly involved in mining especially workshop owners.

People don't even have enough money to pay different taxes like house tax. Some affected are attempting to get into agriculture but government is not helping.

Other Private jobs pay far lower in comparison to what mining had been paying, as such people are unable to sustain basic necessities in life and have reduced the quality of life previously held with a hope that their work would continue once mining is resumed.

Mining should commence soon, keeping a check on pollution and other environmental concerns.

## Velguem, Sanquelim and Cudnem in Bicholim

People have been directly dependent on mining in this region. Cases of Residents have been selling assets to sustain themselves are noted too.

It seems that we have gone back by 15 to 20 years to 2003 levels. People have struggling to maintain decent lifestyle since 2011 but then the cost of living 15 years was far lower than present. Besides, families have grown too.

State Government was had been mindful of truck and machinery sectors to reduce their loans and pay certain amounts in the past, but that is not sufficient.

Agricultural farms were which were previously operating have been rendered uncultivable to be negligence as well as due to mining as such returning back to agriculture also is not a valid option.

Educational standard has dropped. Migrants have returned back to their hometowns.

Consumption of intoxicants is on the rise. Suicide cases have been reported.

Mining should resume but pollutions aspects to be taken care of. Sustainable operations with labour ethics are important.

## Surla, Bicholim and Honda, Sattari

some workers who had been employed in mining are receiving half of their salary but that goes into repayment of loans, others have lost wages totally and are living on their past savings or settlements.

People who were earlier employed directly or indirectly especially in workshops are facing huge losses with limited alternatives. People are trying to get a job as a daily wage labourer at constructions sites. If not, they are trying to take additional loans or are selling gold. The situation is grave because majority of the employment was generated only by mining.

Suicides will start taking place if mining doesn't start as banks are threatening people for repayment of loans.

The Panchayat also, has no revenue now. Earlier, octroi generated 20-30 lakhs INR revenue.

Increase in family tensions and alcohol abuse have been reported. Insomnia has been reported. Deterioration in mental health is majorly reported by truck owners.

Educational facilities provided have gone down because there is no money to pay the fee. Government has declared scholarships but they haven't been delivered.

Children can't afford to better schools which are located outside the village as there is no money to pay for transport and hence the quality reduced and returning back to Government aided schools.

Similar is the case, where People don't have money to avail better medical facilities. Public Health Centres are not entirely equipped with essentials.

Mining should begin at the earliest with necessary precautions. Mining should been done in an environment friendly way.

#### Pissurlem and Advoi, Sattari

The situation is extremely grave as 85% people had been dependent on mining. Livelihoods of these people have been lost. Pursuing higher studies have become problematic. Government schemes are not able to support.

School Children have schools 13 km away in Sanquelim and since there is limited transportation available, their studies are been hampered as it is difficult to pay for private vehicles. There is no alternate livelihood.

People are not able to pay back their truck loans. Industries in Goa already have people employed from the past so no new jobs are created there and besides the qualifications are different. As such there is every pressure on Government Jobs but everyone cannot obtain government job because one needs financial and social capital.

Earlier some mining companies provided water which was used for irrigation but now after their suspension, agriculture can't be supported. Cases of suicide, alcohol abuse and deterioration in mental health have not been reported yet.

Mining should resume keeping in mind environmental checks. Agricultural lands should not be be made a dump site by mining companies in the future

#### Betki-Candola and Usgaon, Ponda

Income has depleted and thereby expenditure towards transportation, and even buying books and uniforms has become a concern at schools for families.

60-70% population of this village is affected. Government schemes like Griha Aadhar are functional for labourers. Suicide hasn't been reported. Deterioration in mental health is reported.

Migrant's livelihood issues have not been addressed.

Mining should resume soon and employment should be guaranteed along with a safety measures on roads

#### Panchwadi, Ponda and Sanvordem, Sanguem

People are heavily dependent on mining activities. Some companies are paying half salary, which is not sufficient. In other cases, it is even worse.

A lot a cases have been reported where people are not able to access medical facilities. People are still not able to pay off loans taken on trucks and tippers. The standard of living including basic necessities like affording food has gone down.

## Kirlapal-Dabal, Dharbandora and Wade Curdi in Sanguem

Over 50% population was involved in mining activities in the past. Educational standard and overall health of the people has gone down due to lowered lifestyle and reduced spending.

Transportation and medical facilities were provided by mining companies which are no longer present. Also, it is difficult for people to pay off loans on trucks. People from well-do-to families are trying to find work as a daily wage labourer.

Mining should start soon as standard of living is deteriorating rapidly.

## Curchorem, Sanguem

People are heavily involved in indirect activities related to mining which includes owning trucks and tippers, workshops and work generated due to presence of jetty. The whole standard of living has dropped drastically. Everyone irrespective of age or work is affected.

Mining should start soon and quality of life has to improve.

#### Rivona, Sanguem

Festivals are coming but, villagers have nothing to celebrate. This has been the scenario since 2012. No alternate livelihood is present. People who had been employed in mining directly or were benefitting through it indirectly are 40-50 years old and so it difficult for them to get employed somewhere else. Young people also, don't stand a chance to work in industries because industries prefer employing people from their regions in Goa.

Companies CSR kept up social activities, transportation. Panchayat and the village were also developing from Octroi. Extracurricular activities funded by CSR for students have gone. Since the drop in transportation services, there have cases of school and college dropouts.

People trying to get involved in agriculture find that there is limited income in that field. Almost 25% of the population have reported deterioration in health including mental tensions.

Mining should resume soon, if possible it should be restarted this December 2019.

#### Netravali, Sanguem

About 70% of the population was involved in mining here. There is no other employment opportunity so; people are trying to get involved in agriculture. Livelihood has disappeared

for people involved in mining directly. Though education is going fine but standard of living has come down

Mining should begin with a different road catering to mining companies. It should begin because both, government and private domains are in loss. Employment too is of great concern.

## The case of Marmugao Port & Shipping and Related Sectors

The most important port in Goa is the Marmugao Port which is around 300 years old. The city around this port has developed due to port activities and so has the Goan economy.

Mining and export started in Goa in the 1950s which highlights the importance of Marmugao port. Two rivers drain into the sea through Marmugao viz. Mandovi and Zuari which provides ore transportation to the port in an easy and environment friendly way.

This port used to bring in a sizeable foreign exchange apart from generating revenue through other formalities like cargo handling charges, stevedoring etc. Organisations from other countries appointed local agents to coordinate with port and authorities thus generating employment opportunities.

Due to suspension in Mining in Goa, there have been adverse effects.

Some of the workers are trying to secure jobs in other ports but a majority of them are still struggling and in hope of resumption of work.

Some of them are restricted by their age. People who took up education to work in this sector are jobless and have limited alternatives.

Pensioners are also suffering.

Workshops and specialised workshops for ships and barges have closed down.

Laboratories set up to test the ores have shut down.

Launch owners to carry people to and from the ship have shut down.

People coming from foreign due to port activities generated income in the city thus, supporting businesses indirectly depended on port activity like rented accommodations, restaurants, art shops, city transportation, etc. are facing an all-time low.

The city of Vasco had once been one of the most prosperous towns in the State of Goa and developed its market and economy around this port. But the situation today is far from its past glory.

A lot of indirect activities like shops, rented accommodations, etc. have come to a stop affecting the whole city. Tourism too has slowed down. New businesses have been severely impacted. Real Estate value has decreased.

The port has plants to assist in loading, unloading and other procedures. The closure of mining has led to 11 plants being dismantled inevitably affecting severely the working class. There is no money to support them.

Deterioration in mental and physical health is reported especially amongst people in barge industry. There have been cases of suicidal tendency. People are not able to pay back loans taken from banks and there have been cases where banks have move forward in auctioning assets to recover loans. No one is a wilful defaulter, but people's social identity has been damaged and so has their credibility.

The State and Central Government used to receive a sizeable income in terms of taxes and cess and now, they are also at a loss.

Also, the shutdown has hit the overall development in the state from Panchayats to Municipal Councils. There have reports of government aided schools shutting down and children dropping out because parents don't have enough money to pay fees.

Hospitals were financed by exporters but, the shutdown has led to deterioration in medical facilities. Shipping offices funded the sports club and tournaments. Even the city's carnival celebration has become a low key affair.

The whole impasse within mining operations created by the government has led to negligible maintenance of the port and the plants simultaneously leading to loss of manpower.

Barges are rusting and corroding as the barge industry completely depends on mining functions to sustain. The barge manufacturing industries in Gujarat are also, facing a downfall. The schemes provided by government are of less use to pay off loans because liability changes with time. An assistance of 1000 crores INR would be required to overall restart the business and recover from the losses.

If mining doesn't start, in 1-2 years the port will have to close down because general cargos can't come in Goa. Mining should begin soon with increase in CSR and government investment.

# Annexure-H

## Annexure-G

## **Snapshots of Random Field Survey**













# Annexure-I

## Annexure-H

			Total	Families Affected by Mining Stoppage				
S#	Villages Surveyed	No. of Families	Population Surveyed	Directly Dependent	Indirectly Dependent	Not Affected Families		
1	Velguem	34	153	21	12	1		
2	Amona	35	163	21	10	4		
3	Bicholim	160	668	102	57	1		
4	Advoi	21	81	0	5	16		
5	Honda	100	327	29	65	6		
6	Mayem	94	414	71	23	0		
7	Sircaim	30	123	19	11	0		
8	Mulgaon	60	282	49	10	1		
9	Asssonora	10	40	9	1	0		
10	Sirigaon	49	216	43	6	0		
11	Pilgaon	59	250	51	8	0		
12	Pale	35	140	18	14	3		
13	Sanquelim	40	185	20	13	7		
14	Surla	49	217	34	11	4		
15	Navelim	56	244	36	14	6		
16	Kudne	32	161	21	10	1		
17	Pissurlem	71	308	65	2	4		
18	Kirlapal-Dabal	90	361	56	32	2		
19	Savordem	102	434	61	39	2		
20	Curchorem	149	543	43	76	30		
21	Panchwadi	51	194	24	15	12		
	Total	1327	5504	793	434	100		
	%	100.00		59.76	32.71	7.54		

## Families affected due to the Stoppage of Mining Activities

S#	Villages	No. of	Total	Affected	Families with Nil income due to mining stoppage		
5#	Surveyed	Families	Population Surveyed	Families	Directly Dependent	Indirectly Dependent	
1	Velguem	34	153	33	20	3	
2	Amona	35	163	31	12	0	
3	Bicholim	160	668	159	20	5	
4	Advoi	21	81	5	NR	NR	
5	Honda	100	327	94	34	17	
6	Mayem	94	414	94	34	1	
7	Sircaim	30	123	30	18	6	
8	Mulgaon	60	282	59	27	2	
9	Asssonora	10	40	10	5	1	
10	Sirigaon	49	216	49	22	2	
11	Pilgaon	59	250	59	24	2	
12	Pale	35	140	32	6	0	
13	Sanquelim	40	185	33	10	1	
14	Surla	49	217	45	19	6	
15	Navelim	56	244	50	16	3	
16	Kudne	32	161	31	4	3	
17	Pissurlem	71	308	67	5	1	
18	Kirlapal-Dabal	90	361	88	21	0	
19	Savordem	102	434	100	25	9	
20	Curchorem	149	543	119	2	0	
21	Panchwadi	51	194	39	5	6	
	Total	1327	5504	1227	329	68	
	%				25	5	

## Families with Nil income due to the Stoppage of Mining

S#	Villages Surveyed	No. of Families	Total Population	Affected Families	Loan taken by Families Towards				
	Surveyeu	Families	Surveyed	Fairines	Trucks	Housing	Personal	Others	
1	Velguem	34	153	33	8	0	2	5	
2	Amona	35	163	31	3	0	0	2	
3	Bicholim	160	668	159	2	0	0	27	
4	Advoi	21	81	5	0	0	0	0	
5	Honda	100	327	94	3	2	0	4	
6	Mayem	94	414	94	8	0	0	29	
7	Sircaim	30	123	30	9	2	4	10	
8	Mulgaon	60	282	59	1	9	21	9	
9	Asssonora	10	40	10	0	2	1	3	
10	Sirigaon	49	216	49	0	0	0	0	
11	Pilgaon	59	250	59	2	0	0	12	
12	Pale	35	140	32	5	1	0	1	
13	Sanquelim	40	185	33	19	0	1	1	
14	Surla	49	217	45	5	0	2	9	
15	Navelim	56	244	50	14	10	0	6	
16	Kudne	32	161	31	6	1	1	1	
17	Pissurlem	71	308	67	30	0	10	0	
18	Kirlapal-Dabal	90	361	88	1	7	18	6	
19	Savordem	102	434	100	4	1	0	40	
20	Curchorem	149	543	119	7	5	0	35	
21	Panchwadi	51	194	39	14	0	0	9	
	Total	1327	5504	1227	141	40	60	209	
	Total No. of Families Taken Loan					450			
	Families Taken Loan (%)					9	13	46	

#### Families that have taken loan during mining and their repayment impact

Others: Gold, Education, Shop and Vehicle Loan

S#	Villages Surveyed	No. of Families	Total Population Surveyed	Affected Families	Facilities availed by no. of families under CSR prior to mining stoppage	No. of families availing Govt. schemes	No. of families having awareness of DMF	No. of Families switched to alternative jobs	No. of families favouring resumption of mining (%)
1	Velguem	34	153	33	14	28	0	1	100
2	Amona	35	163	31	4	27	0	3	97
3	Bicholim	160	668	159	80	141	0	11	99
4	Advoi	21	81	5	0	2	0	0	100
5	Honda	100	327	94	3	43	0	4	99
6	Mayem	94	414	94	21	2	0	2	100
7	Sircaim	30	123	30	0	3	0	0	100
8	Mulgaon	60	282	59	33	20	0	0	100
9	Asssonora	10	40	10	1	3	0	1	100
10	Sirigaon	49	216	49	38	7	0	1	100
11	Pilgaon	59	250	59	48	3	0	2	100
12	Pale	35	140	32	2	23	0	2	100
13	Sanquelim	40	185	33	0	16	0	7	100
14	Surla	49	217	45	30	39	0	10	100
15	Navelim	56	244	50	26	26	0	3	100
16	Kudne	32	161	31	12	0	0	3	94
17	Pissurlem	71	308	67	19	35	0	0	100
18	Kirlapal-Dabal	90	361	88	76	85	0	5	100
19	Savordem	102	434	100	100	101	0	22	100
20	Curchorem	149	543	119	55	122	0	40	97
21	Panchwadi	51	194	39	14	41	0	16	86
	Total	1327	5504	1227					99

#### Details of Families availing benefits and their response towards Resumption of Mining

