Survey of Environmental & Socio-Economic Impacts of Interim Ban on Mining in Goa

Terence Jorge
Hagen De Sa
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October 2013
EIA Resource and Response Centre (ERC)
Goa, India.
“Inaction, delayed action and mild actions have had created fearless atmosphere, abuse of law and regulations in the Goa State. The regulatory mechanism has been totally collapsed and irregularities due to maladministration having risen to its peak. In the process, the sole looser is environment, eco-system of the Western Ghats, general public and treasury of Goa State.”

*Justice MB Shah Commission Report*¹

¹ Justice M.B. Shah Commission Report, Chapter 4, Summary and Recommendations, Chapter 2, Page 199, Point (x)
Survey of
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Interim ban on mining in Goa by the Supreme Court of India in October 2012 has brought in a unique change in scenario wherein the environment is cleaner. Also, there have been protests largely by truckers for loss of livelihood.

This rapid survey to briefly review the impacts of ban on mining is the result of expert advice of Claude Alvares, Ramesh Gauns, Rajendra Kerkar and Rahul Basu to name some from Goa. They have been involved in reviewing the drafts of the report at one or the other point. We are heartily thankful to them. We are highly thankful to people of Goa for participation in the primary survey and putting forward their frank and honest views on environmental and socio-economic impacts of the ban.

October 2013

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Executive Summary

This rapid survey is carried out to know the people’s perception on the changes with the suspension of mining in Goa, by way of reviewing print media and conducting a primary survey.

Goa’s mining operations were suspended first by the Goa Government on 10.09.2012 after the Justice M. B Shah Commission Report was tabled in the Parliament three days earlier. Then, 139 Environmental Clearances were suspended by the Ministry of Environment and Forests on 14.09.2012, followed by the Supreme Court order for ban on mining operations in the State on 5.10.2012, in the context of the Goa Foundation petition 435/2012.

The Justice M.B Shah Commission and the Central Empowered Committee have investigated and reported several illegalities concerning the mining industry in Goa. Mining is an industry mainly for economic benefits.

The ban on mining should not hinder the process of reclamation in order to prevent any further damage to the State’s environment, social well being and traditional occupations. The present environmental, social and economic scenario largely indicates that the State on the whole could make a successful recovery from about 60 years of continued mining operations, if the ban prevails.

Present environmental scenario

Despite Goa receiving about 120 inches of rainfall every year, it has to ‘rely on the Tillari Project for water’\(^2\). While some rivers are flowing, there are some water bodies still reeling from the impact of mining. The impacts that occurred due to mining largely include:

(a) Air pollution due to suspended particles, vehicular exhaust and ‘coating of roadside vegetation with dust’\(^3\)
(b) Loss of wildlife habitat
(c) ‘Water pollution’\(^4\) in streams, rivers, wells and wetlands affecting fish population and fishermen, dairy and ‘silting of agricultural area and plantations’\(^5\)
(d) Noise pollution affecting houses and institutions like schools on road sides as well as wildlife around mines

The ban on mining has allowed for rejuvenation of the environment. Presently;

(a) The air is devoid of dust
(b) Springs, which were dry, have “begun to flow gradually”
(c) The ‘decrease in noise pollution’\(^6\) has come as sigh of relief. Sacred groves have begun to echo with the sounds of various bird species

\(^1\) 01.11.2012, Herald, Page 4
\(^3\) 12.10.2012, Times of India, Page 7
\(^5\) 24.03.2013, Herald Review, Page 2
(d) Fishermen along the Mandovi\textsuperscript{7} and Zuari\textsuperscript{8} have noticed a rise in the amount of fish in the rivers since the movement of barges has reduced
(e) ‘Rare orchids are blooming’\textsuperscript{9} and a ‘tailing pond is slowly sprouting green’\textsuperscript{10}
(f) The number of wildlife sightings ‘has increased’\textsuperscript{11} on the whole and ‘the chirping of birds has replaced the roar of trucks.’\textsuperscript{12} For example ‘the Malabar Gliding Nymph in Pissurlem’\textsuperscript{13} and the ‘Southern bird-wing butterfly was spotted in North Goa in November 2012 after the ban.’\textsuperscript{14}

On the whole the environmental condition is on a road to recovery and any further mining operation without scientific study could seriously impair Goa’s natural resources and environment.

\textbf{Present social scenario}

There were protests largely by truck owners, demanding the resumption of mining. The social parameters that emerged during this study include:

(a) Impacts of mining on culture and traditions
(b) Respite to schools
(c) Improvement in health conditions in mining areas
(d) Improved traffic conditions in mining areas
(e) Unrest and protests, truckers threatening activists and media
(f) Corruption in the Goan mining industry

The ban on mining has allowed for a number of changes in the social sphere and has brought some amount of respite to people e.g.

(a) There has been change in the demographics with ‘the presence of the migrant workforce dwindling.’\textsuperscript{15}
(b) In schools, teachers and students report a ‘better teaching and learning experience as there is less amount of noise from mining trucks.’\textsuperscript{16}
(c) Health conditions in mining areas have improved as “no new cases of skin problems, kidney problems or T. B. have been reported after the ban.”
(d) Traveling has become ‘convenient, safer and less time consuming.’\textsuperscript{17}

\footnotesize
8 15.03.2013, Times of India, Page 3
10 26.01.2013, http://madraswanderer.blogspot.in/2013/02/goa-post-mining-bans.html
13 0.12.2012, Times of India, Page 5
15 12.10.2012, Times of India, Page 1
16 15.10.2012, Times of India, Page 1
17 15.10.2012, Times of India, Page 4
(e) Youth who were “reluctant to take up agriculture and were protesting for the ban on mining to be lifted have gradually begun returning back to the fields.”

The cultural scenario had been impacted by way of, ‘lack of water for celebrating traditional festivals’\(^\text{18}\), piling of a ‘reject dump at a crematorium plot’\(^\text{19}\), ‘mining leases in sacred groves’\(^\text{20}\) and ‘youth being steered away from traditional occupations’\(^\text{21}\).

Although the cultural scenario does not show significant positive change, if the ban on mining continues and economic alternatives are explored sincerely by people and government, the social scenario on the whole could make a successful recovery.

**Present economic scenario**

Residents from villages around the mines at Netrvali, Sanguem, Goa, which were shut in the year 2003 have indicated positive results due to the stoppage of mining in the area by reporting, “…huge improvement in the quality of stream water and yield of local produce.”\(^\text{22}\) Their comments come 9 years after the mines shut down. Hence if the ban on mining continues, one could surely expect other such positive changes in future.

Even though ‘mining dependants’ are claiming loss of income due to stoppage of mining, ‘there is a section of the public benefitting economically by way of agriculture and exploring new options.’\(^\text{23}\) The ban has forced people to re-think and venture into different occupations. Currently;

(a) Cultivators say that their ‘chilies and cashew produce has increased and they explain how earlier the dust would coat the plants and rot the flowers.’\(^\text{24}\)

(b) Traditional fishing communities have noticed ‘a rise in the ‘mendios’ (Window Pane Oysters)’\(^\text{25}\) in Chicalim, along the bank of River Zuari (through which transportation of ore by barges and hence water pollution was taking place prior to the ban).

(c) Some truck drivers have agreed that ‘agriculture will help clear their loans from the banks and sustain them.’\(^\text{26}\)

(d) A truck driver, with the closure of mines in Sirigao, Bicholim, ‘has managed to bounce back as a motorcycle pilot.’\(^\text{27}\)

It has also been pointed out that ‘it is the mine owners and the leaseholders that amassed wealth and the job loss has more affected the people at the bottom rungs of the corporate ladder’\(^\text{28}\), like office employees and temporarily employed people like drivers. The mine owners are the ones primarily responsible for ‘rehabilitation of their employees and reclamation of the excavated pits.’ In terms of people’s views, while some seek ‘controlled’ and ‘organized’ mining, this seems difficult to implement with the infamous environmental track record of mining companies.
in the state and the obvious lack of compliance to environmental laws. There are some who believe that ‘all the stakeholders of mining should come to terms that mining is not a sustainable business model and think of diversifying the local economy to make it less dependent on mining.’

The pertinent questions arising due to limited natural resources of the state are, ‘What after mining?’ What after water resources are depleted?

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20 22.10.2012, Times of India, Page 2
I. History and illegalities of mining in Goa

(a) Mining Talukas

Goa is a State forming part of the Western Ghats. It has a total area of 3702 sq km. The Western Ghats in Goa has 6 Wildlife Sanctuaries and 1 National Park. From about 1000 meters at its peaks, it lowers westward through two major rivers, the Mandovi and Zuari and 7 smaller freshwater rivers to smaller hill ranges and plains meeting a coastal stretch of 106 km that also has its drinking water requirements met by the catchment areas in the Western Ghats.

Most of the mines in the State are concentrated in five talukas - Bicholim and Sattari, in North Goa and Dharbandora, Sanguem and Quepem talukas in South Goa. Activists working on the issue say that ‘an estimated 100,000 people living in villages in these five talukas are affected (adversely). Besides loss of livelihood, they are also suffering from the adverse effects of air, noise and water pollution.’

A. Bicholim Taluka

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30 30.09.2012 Down to Earth Mining in Goa Damage to the Environment
B. Sattari Taluka

C. Dharbandora Taluka
D. Sanguem Taluka

E. Quepem Taluka
(b) The Goa, Daman and Diu Mining Concessions (Abolition and Declaration as Mining Leases) Act 1987 (23.05.1987)

The Parliament enacted ‘the Goa, Daman and Diu Mining Concession Act 1987, by which all Mining Concessions granted by the Portuguese were treated as Mining Leases.’\(^{31}\) As per this Act, a mining concession has been deemed to be a mining lease under section 4, ‘the concession holder becomes the holder of such mining leases under the Mines and Minerals Act.’\(^{32}\) Every mining concession specified in the First Schedule of this act shall, be deemed to have been abolished, and is a mining lease granted under the Mines and Minerals Act.

(c) Mining Industry

A distinctive feature of Goa’s mining industry is the high overburden to ore ratio, which requires a large volume of material to be handled, and extensive places for dumping. ‘The excavation ratio in Goa is 1:3 (for every tonne of ore, three tonnes of soil is extracted). Some pits are over 500 m in radius and 40 m deep. Sizeable part of the overburden required for backfilling has been transported away from the mining site for stacking up or has already been exported after demands shot up.’\(^{33}\)

(d) Iron ore exports

Goa is rich in iron ore deposits. The export volume has seen an upward curve over the years. ‘The first export of 100 tonnes was in 1947. The figure rose to a million tonnes by 1954, 10 million tonnes by 1971, and 13-15 million tonnes in the 1980s.’\(^{34}\) Iron ore export in 2012 has reached a whopping 42 million tonnes per year.’\(^{35}\)

The share of Goa’s iron ore exports, as percentage of the total Indian iron ore exports in quantity is ‘as high as 65 % in 1965-66 and continued to be around 50%.’\(^{36}\)

(e) Important events in the history of mining

<table>
<thead>
<tr>
<th>No.</th>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20.09.1906</td>
<td>Portuguese decree granting Mining Concessions in Goa(^ {37})</td>
</tr>
<tr>
<td>2</td>
<td>23.05.1987</td>
<td>The Goa, Daman and Diu Mining Concessions (Abolition and Declaration as Mining Leases) Act 1987</td>
</tr>
<tr>
<td>3</td>
<td>2004</td>
<td>The Goa (Prevention of Illegal Mining, Transportation and Storage) Rules 2004</td>
</tr>
<tr>
<td>4</td>
<td>22.11.2010</td>
<td>Justice M. B. Shah Commission appointed for inquiry of illegal mining of</td>
</tr>
</tbody>
</table>

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\(^{31}\) MINES AND MINERALS (DEVELOPMENT AND REGULATION) ACT, 1957 (No. 67 of 1957)”Mining lease” means a lease granted for the purpose of undertaking mining operations, and includes a sub-lease granted for such purpose 

\(^{32}\) In relation to the mine to which the mining concession relates, subject to the condition that the period of such lease shall, notwithstanding anything contained in that Act, extend up to a period of six months from the date of assent 

\(^{33}\) 20.10.2012, Times of India, Page 1 

\(^{34}\) GOA Sweet Land of Mine, Page 31 

\(^{35}\) 22.10.2012_TOI_Page 2_looking beyond 

\(^{36}\) Role of Mineral Ore Exports in Economic Development of Goa Report 2002 

\(^{37}\) Fish Curry, Rice Page 225
iron ore and manganese (S.O.2817(E))

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>The Goa (Prevention of Illegal Mining, Transportation and Storage) Rules 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>10.09.2012</td>
<td>State Govt. order of temporary suspension of all mining operations in the State of Goa</td>
</tr>
<tr>
<td>8</td>
<td>14.09.2012</td>
<td>MOEF suspended 139 Environmental Clearances</td>
</tr>
<tr>
<td>9</td>
<td>25.09.2012</td>
<td>Goa Foundation PIL in the Supreme Court of India. (W.P Civil 435/2012)</td>
</tr>
<tr>
<td>10</td>
<td>05.10.2012</td>
<td>Supreme Court Order suspending all mining operations including transportation</td>
</tr>
<tr>
<td>11</td>
<td>28.10.2012 to 31.10.2012</td>
<td>CEC visit to Goa</td>
</tr>
<tr>
<td>12</td>
<td>07.12.2012</td>
<td>CEC files Preliminary Report</td>
</tr>
<tr>
<td>13</td>
<td>18.01.2013</td>
<td>CEC files Supplementary Report on Buffer Zones</td>
</tr>
<tr>
<td>14</td>
<td>09.05.2013</td>
<td>NGT direction to MoEF to review the fate of 139 mines (Para 8, Pg 8) Ms. Lithoferrovs MoEF</td>
</tr>
<tr>
<td>15</td>
<td>23.05.2013</td>
<td>Forest Department letter concerning preparation for Survey of distances of Wildlife Sanctuaries/ National Parks from the nearest mines (vice versa in fact)</td>
</tr>
<tr>
<td>16</td>
<td>21.03.2013</td>
<td>MoEF constitution of Expert Appraisal Committee to look into the issues relating to environmental clearances of iron ore mining lease cases in the state of Goa</td>
</tr>
<tr>
<td>17</td>
<td>23.07.2013</td>
<td>Results of 1st Survey of 54 Mining Leases</td>
</tr>
<tr>
<td>18</td>
<td>22.08.2013</td>
<td>Results of 2nd Survey of 37 Mining Leases</td>
</tr>
<tr>
<td>19</td>
<td>31.08.2013</td>
<td>Results of 3rd Survey of 54 Mining Leases</td>
</tr>
<tr>
<td>20</td>
<td>Sep 2013</td>
<td>State indicates renewal of 27 mining leases</td>
</tr>
<tr>
<td>21</td>
<td>03.09.2013</td>
<td>Policy for regulating the mining dumps on Government and Private lands and related issues by Department of Revenue</td>
</tr>
<tr>
<td>22</td>
<td>28.09.2013</td>
<td>Goa Mineral Policy declared by Department of Mines and Geology</td>
</tr>
<tr>
<td>23</td>
<td>04.10.2013</td>
<td>Results of 4th and final Survey of 34 Mining Leases</td>
</tr>
</tbody>
</table>

(f) **Impacts of Mining operations on the State**

The environmental problems associated with iron ore mining are diverse. The removal of vegetation, topsoil, waste and ore, brings about inevitable natural consequences, through deforestation, climate change, erosion, air and water pollution and health hazards. The most noticeable impacts on the ecosystem are degradation of land, deforestation, displacement of wildlife, effect on aquatic eco-system, loss of habitat for biodiversity including rare flora and fauna.
(g) **Buffer zones**

(i) **Buffer zones for Wildlife Sanctuaries**

In 2002, the Ministry of Environment and Forests, acting on a direction by the former Indian Board of Wildlife, issued a circular which directed all State Governments to ‘demarcate a 10 km buffer zone from the boundaries of all Wildlife Sanctuaries, which would be considered ecologically sensitive.’

MoEF had, by an order dated 14 September 2012 kept in abeyance Environmental Clearances of ‘139 mining leases granted under Section 5 of the Environment (Protection) Act, 1986.’

(ii) **Sixteen Mining Leases within Netravali Wildlife Sanctuary (Goa)**

A recent survey by the Forest Department and the Department of Mines and Geology to assess the distances of mining leases from Wildlife Sanctuaries and national parks was carried out in four phases.

‘The State had proposed an Eco-Sensitive Zone (buffer zone) of up to 1 km from the boundary of Wildlife Sanctuaries and National Parks in Goa. According to the Chief Minister, "We gave them the ESZ proposal and they (Union government) accepted it." That means three leases within 1 km and 5 adjacent /touching the boundary of Netravali Wildlife Sanctuary too should not operate.’

‘Also, the Supreme Court in the Judgment in Goa Foundation versus Union of India had observed that to conserve forest, environment and wildlife, all activities falling within 10 km of the boundaries of the National Parks and Wildlife Sanctuaries would be referred to the Standing Committee of the National Board of Wildlife (NBWL).’

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(iii) Results of Survey conducted for distance of Mining Leases from Wildlife Sanctuaries and National Parks

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Category</th>
<th>1st Survey</th>
<th>2nd Survey</th>
<th>3rd Survey</th>
<th>4th Survey</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Within confines of a WLS</td>
<td>1</td>
<td>12 (non working)</td>
<td>0</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>2</td>
<td>Partly in a Sanctuary</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>Adjacent to WLS/NP</td>
<td>0</td>
<td>5 (working)</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>Within 1km of WLS/NP</td>
<td>0</td>
<td>3</td>
<td>17 (working)</td>
<td>6</td>
<td>26</td>
</tr>
<tr>
<td>5</td>
<td>Within 10 km of WLS/NP</td>
<td>49</td>
<td>12</td>
<td>35</td>
<td>24</td>
<td>120</td>
</tr>
<tr>
<td>6</td>
<td>Beyond 10 km of WLS/NP</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>- Total</td>
<td></td>
<td>54</td>
<td>37</td>
<td>54</td>
<td>34</td>
<td>179</td>
</tr>
</tbody>
</table>

In the first phase, a survey of 54 mining leases was conducted out of which 1 was within the confines of a wildlife sanctuary and 49 others are within 10 km of the Wildlife Sanctuaries and National Parks, with only 4 beyond the 10 km mark.

In the second phase, of 37 surveyed mining leases, 12 non-working mines were within confines of a Wildlife Sanctuary, 4 were partly within the Wildlife Sanctuary, 5 working mines were adjacent to the Wildlife Sanctuary/ National Park and 3 mines were within 1 km of Wildlife Sanctuaries/ National Parks, while 12 were within 10 km of a Wildlife Sanctuary or National Park. Only one mine was found beyond 10 km.

Of 54 mining leases surveyed in the third phase, ‘no lease was found to be within Wildlife Sanctuaries (WLS) and National Parks (NP), but 17 working mining leases were within 1km of WLS, two beyond 10 km of WLS and 35 within 10 km of WLS.’

In the fourth phase, ‘out of 34 surveyed mines, 2 mines were partly in the Sanctuary, 6 were within 1 km of Wildlife Sanctuary/ National Park while 24 mines were within 10 km of Wildlife Sanctuary/ National Park and only 2 were beyond 10 km of Wildlife Sanctuary/ National Park.’

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42 For more details see the Source Link: http://timesofindia.indiatimes.com/city/goa/3rd-survey-finds-17-leases-within-1km-of-wildlife-sanctuaries/articleshow/22173369.cms

As a whole, 13 mines were found within the confines of Wildlife Sanctuaries/ National Parks, while 6 were partly within. Another 151 leases were found within 10 km and only 9 were beyond 10 km of WLS/ National Parks.

(Map of Goa with approximate 10 km buffer zone for Wildlife Sanctuaries and National Parks is for reference only; Source: ercindia.org)

(h) Illegalities found by the Justice M. B. Shah Commission

In 2010, a Commission headed by Justice M.B. Shah was set up by the Central Government to probe into illegal mining across the country. The common illegalities reported in Goa were ‘mining without license and mining outside the lease area. The report studied the damages to environment, livelihood issues, and rights of tribal and other people living in the mining area.’

The Commission has observed that natural resources namely iron ore has made only a few persons billionaires.

Overview of illegal activities:

(i) Mining without a license;
(ii) Mining outside the lease area;

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44 08.02.2013, The Hindu, Goa Mining Scandal
(iii) Undertaking mining in a lease area without taking approval of the concerned State Government for transfer of concession;
(iv) Raising of minerals without lawful authority;
(v) Raising of minerals without paying royalty in accordance with the quantities and grade;
(vi) Mining in contravention of a mining plan;
(vii) Transporting of raised mineral without lawful authority;
(viii) Mining and transportation of raised mineral in contravention of applicable Central and State Acts and Rules there under;
(ix) Conducting of multiple trade transaction to obfuscate the origin and source of minerals in order to facilitate their disposal;
(x) Tampering with land records and obliteration of inter-state boundaries with a view to conceal mining outside lease areas;
(xi) Forging or misusing valid transportation permits and using forged transport permits and other documents to raise, transport, trade and export minerals.

(i) **Goa Foundation petition in the Supreme Court of India (W.P 435/2012)**

A petition of Goa Foundation vs Union of India and others (435 of 2012) was filed in the Supreme Court of India as of 25.09.2012, which is essentially based on the report of Justice M. B. Shah (a former judge of the Supreme Court) who is the Chairman of the commission of Enquiry for illegal mining of iron ore and manganese.

In this context, the Supreme Court passed directions including suspension of mining in Goa on 5 October 2012. The Order states that ‘The Central Empowered Committee (CEC) is directed to submit its report on this writ petition.’

The order further states, ‘A preliminary report from the CEC should reach this court within four weeks from the day of order. Till further orders, all mining operations in the leases identified in the Shah Commission’s report and transportation of iron ore and manganese ore from those leases, whether lying at the mine – head or stockyards, shall remain suspended, as recommended in the (Shah) Commissions’ report.’

(j) **Central Empowered Committee (CEC) Interim Report dated 07.12.2012**

The Supreme Court appointed Central Empowered Committee (CEC) team visited various mining sites in Goa to verify the ground realities of the Shah Commissions Report. The CEC team included Shri P.V. Jayakrishnan, Shri Mahendra Vyas and Shri Siddarth Chowdhary.

The CEC filed the preliminary report on illegal mining in Goa in the Supreme Court (SC) on 7 December 2012. The important recommendations, included:

(i) A macro level Environment Impact Assessment (EIA) before resumption of Mining
(ii) Preparation of reclamation and rehabilitation plans
(iii) Survey and demarcation of mining leases by the team constituted by the SC
(iv) Review of condonation of delay in renewal of leases
(v) Leases found involved in substantial illegality to be scrapped
(vi) Permission of 19 mines within Wildlife Sanctuaries and National Parks and 23 others within 1 km radius may be revoked.

(vii) 120 leases within 10 km of National Parks and Sanctuaries should be reviewed by the Standing Committee of the National Board of Wildlife (NBWL).

### CEC visit to Goa

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Sites</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bandekar Mines, Shirgao, in Bicholim taluka(^{45})</td>
<td>29.10.2013</td>
</tr>
<tr>
<td>2</td>
<td>Sesa Goa mining dump in Vaguriem/ Advoi and DMC mines, SS Shetye mines and Fomento mines at Pissurlem(^{46})</td>
<td>29.10.2013</td>
</tr>
<tr>
<td>3</td>
<td>Chowgule mines at Gavane in Sattari Talukas(^{47})</td>
<td>29.10.2013</td>
</tr>
<tr>
<td>4</td>
<td>Cuddegal, Codli, Dabal, Selaulim, in Sanguem(^{48})</td>
<td>30.10.2013</td>
</tr>
</tbody>
</table>

(k) **Present status**

Goa’s mining operations were suspended first by the Goa Government on 10.09.2012 after the Shah Commission Report was tabled in the Parliament 3 days earlier. Then 139 Environmental Clearances were suspended by the Ministry of Environment and Forests, followed by the Supreme Court order for ban on mining operations in the State from 5.10.2013 (in the Goa Foundation petition 435/2012).

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\(^{48}\) [http://heraldingoa.blogspot.in/2012/10/cec-inspects-mines-in-south-team-herald.html](http://heraldingoa.blogspot.in/2012/10/cec-inspects-mines-in-south-team-herald.html)
(l) Reclamation of mines

Majority of the mining companies ‘have left the mining pits without reclamation for example the V. D Chowgule Iron Ore Mine in Sancorda, Goa’\(^{49}\). Mine Closure is a requirement in Mining of Minerals [1 a (i)] of the schedule in EIA Notifications 2006 as per the EIA Guidance Manual for Mining of Minerals (MoEF).\(^{50}\)

‘Mine Closure Plan is the most important requirement in mineral mining projects. The mine closure plan should cover the technical, social, legal and financial aspects dealing with progressive and post closure activities… While formulating the closure objectives for the site, it is important to consider the existing or pre-mining land use…The mine closure criteria are physical, chemical and biological stability of the site.’\(^{51}\)

\(^{49}\)http://ibm.nic.in/abandedsites.htm
\(^{50}\)EIA Guidance Manual for Mining of Minerals, Chapter 5.8, Mine Closure
\(^{51}\)EIA Guidance Manual for Mining of Minerals, Chapter 5.8, Mine Closure
II. Environmental Impacts

Present environmental scenario

The damage caused by the onslaught of mining has left rivers and agricultural lands silted. Some have been recovering while others may require more time.

The following environmental parameters emerged during the study:

(a) Decrease in air, water and noise pollution
(b) Revival of rivers and wetlands
(c) Positive effects on vegetation, plantations and agricultural fields
(d) Increase in wildlife sightings

The findings of each parameter are detailed below.

(a) Decrease in air, water and noise pollution

(a) 1. Air

There has been significant improvement in the quality of air since the ban, as the dust by mining trucks has reduced. During mining and the transport activities of ore, there was a lot of dust emission. The dust would form “thick layers on plants and trees alongside roads.”

Presently;

(i) Those who have houses besides the road, recall the amount of dust to be such that they had to “make sure all doors and windows were shut to prevent the dust from entering”.
(ii) Student’s report that they would regularly have to change their uniforms because the dust would “get them soiled.”
(iii) Motorcycle Pilots and two-wheeler drivers report that they had to always wrap something around their mouths “because of the dust suspended in the air.”
(iv) Teachers are delighted as “there is no dust and noise pollution” due to the mining trucks and they can breathe clean air.

With the ban on mining, the air pollution in the locations around mining operations has reduced greatly and is a relief to people with houses besides the roads, commuters on the roads and students and teachers in schools.

(a) 2. Water

Some of the impacts reported on water resources are:

(i) Streams, rivers and wells that had quenched the thirst of locals and the fields and plantations for generations ‘either lie dry or are reduced to trickles while those that flow are accompanied with silt from the mines’.

52 12.10.2012, Times of India, Page 7
(ii) The Advoi Nullah, in Sattari Taluka has been diverted by the company to “dump mining rejects and to create settling ponds; silting ponds check dams and filter beds.”

In the present scenario,

(i) An area such as Surla, which by nature has copious amount of water, is not affected badly by mining.
(ii) Some people report that earlier their water would get dirty because of the silt, but ever since the ban their water quality is comparatively better.

Post the ban on mining, there is an improvement in fresh water bodies and revival of springs was noticed. This is a positive sign and can only improve with the ban in place.

(a) 3. Noise

The constant plying of the trucks had contributed to a lot of noise pollution. With the ban in place, a number of positive reports have been streaming in owing to less noise pollution.

(i) Teachers from schools in Chodea and Sonshi villages in North Goa report that “earlier with the noise of the trucks, the heavy machinery and the honking they could not hear the students nor the students could hear them.” Since the ban people report that, they are ‘enjoying the noise free environment’.53
(ii) It has been reported that the wildlife too have been moving about freely as there is less noise. People say that “the ban has brought relief and a peace of mind to them. Students can concentrate better on their studies since there is less noise.”
(iii)Ever since the ban on mining activities around the Netravali Wildlife Sanctuary, ‘a number of Gours are seen expanding their territory, the numbers of wildlife sightings have increased on a whole owing to less noise.’54
(iv)The singing of bird song in sacred groves has ‘replaced the roar of ore laden trucks at number of places.’55
(v) People in various villages say that they can ‘sleep peacefully at night with no trucks plying on the roads and also feel safe travelling on roads.’56

Since the ban, due to truck and mining machinery being out of use, people are enjoying a ‘noise free environment’, wildlife sightings have increased and ‘the chirping of birds has replaced the roar of trucks’.57

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5301.11.2012, Times of India, Page 2
5526.01.2013, http://madraswanderer.blogspot.in/2013/02/goa-post-mining-bans.html
5624.03.2013,Herald Review, Page 2
5726.01.2013, http://madraswanderer.blogspot.in/2013/02/goa-post-mining-bans.html
(b) Revival of rivers and wetlands

The rampant mining had destroyed a number of rivers and springs. Ever since the ban, “springs that were earlier dry are gaining their flow.” Presently,

(i) Fishermen along the Mandovi River have observed a rise in the catch of fish and clams. An indication that ‘the marine life is spawning as the movement of barges has stopped.’\(^{58}\)

(ii) Fishermen in Chicalim (downstream of Zuari River) report that they have started extracting mendios (window pane oysters) which were hard to find earlier but are ‘breeding now have still not run out of stock.’\(^{59}\)

Since the ban on mining, the revival of rivers and wetlands has been reported with increase in fish catch in major rivers of Mandovi and Zuari.

(c) Positive effects on vegetation, plantations and agricultural fields

There has been increase in production of cashew plantations as the amount of dust has reduced ever since the ban on mining. Fields and plantations are giving produce in the form of crops and fruits. Some areas have witnessed immediate recovery in their plantations.

The impacts of mining on agriculture involve:
(i) Farmers complain that from growing three crops a year they are reduced to none. Even their cashew plantations are ‘affected due to the dust by mining.’\(^{60}\)

(ii) Villages in Bicholim Taluka have their fields rendered useless, which are choking with mining rejects while ‘dairy farming has been unsustainable since there is no fodder or adequate water.’\(^{61}\)

(iii) Agricultural lands, ‘Kulaghars’ (Plantations) and other vegetations that ‘thrived in abundance previously in mining areas have been struggling to grow ever since the onset of mining.’

Presently,

(i) With the amount of dust reduced, farmers have begun “cultivating their fields growing chilies and other pulses.”

(ii) Barely three months into the ban ‘a sprig of green glow (Dendrobiumovatum), blossomed on some laterite boulders on a road in Pilgao, a village in the mining heartland of Bicholim taluka. Yellowish-white and delicate, the orchid, though endemic to this part of Goa, has not blossomed for the last 25 years.’\(^{62}\)

(iii) In Panshem ‘a tailing pond of a mine is slowly sprouting green there also is revival in the near destroyed sacred groves community conserved forested areas that contain ancient idols and medicinal trees.’\(^{63}\)


\(^{59}\)15.03.2013, Times of India, Page 3

\(^{60}\)21.10.2012, Herald Review, Page 2

\(^{61}\)12.10.2012, Herald, Page no 1 & 9

\(^{62}\)26.01.2013,http://madraswanderer.blogspot.in/2013/02/goa-post-mining-bans.html

\(^{63}\)26.01.2013,http://madraswanderer.blogspot.in/2013/02/goa-post-mining-bans.html
(d) Increase in wildlife sightings

Due to reduction in the noise due to traffic and mining operations, wildlife have been venturing farther than before and are sighted more often. For instance;

(i) In Pissurlem with the amount of noise reduced “Wild Boars, Peacocks, Red Squirrels, Woodpeckers and Rabbits can be spotted in large numbers.”

(ii) In Surla, one person reports that there have been “different varieties of species that have been noticed since the ban.”

(iii) In Sanguem, it has been reported that “leopards and gaur have been seen increasing their territory, so also the number of owl sightings have increased on a whole.”

(iv) A resident from Surla reports that he has spotted ‘25 different bird species since the ban on Mining.’ A forest guard from Netravali reports that ‘the wildlife are venturing out of the forest over a wider area as compare to before as there is no noise of trucks.’

(v) Mouse deer which is a rare animal has been sighted and so also ‘Pangolin droppings have been spotted.’

(vi) Rare species such as the Malabar Gliding Nymph butterfly endemic to the western ghats, and was believed to be extinct in Pissurlem, “has been spotted again in a horticultural field in Avalimol.”

(vii) “The Southern Bird-wing, India’s largest butterfly was also spotted in the first week of November in Goa’s largest mining corridor.”

(viii) Sacred groves such as ‘Pejalechi Rai’ and Mharinganachinrai have revived as ‘habitats for various bird species.’

Public suggestions/views and comments on the present environmental scenario

Numerous problems to health and environment have been attributed to the mining companies who have ‘caused widespread ecological degradation for power and personal gain.’ As found;

(i) All that the mining dependents have done is ‘generate toxicity of the soils, water scarcity, siltation of rivers and water bodies, damage to agriculture, destruction of our forests and wildlife and put ecology into utter chaos and instability.’

(ii) Although in some cases the Mining Companies have compensated the farmers for the damage to their health and lands, ‘it cannot make up for the permanent loss and damage to the environment.’

(iii) It has been argued by some that people earned ‘ten times more from selling their produce from the fields then the compensation they receive for the mining companies, but the easy money has made the people lazy.’

64 0.12.2012, Times of India, Page 5
66 30.12.2012, Times Of India, Page 5
67 02.01.2013, Herald, Page 2
68 26.01.2013, Times Of India, Page 6
69 12.10.2012, Herald, Page 1 & 9
As a way forward people are of the opinion that;

(i) The mining companies should “reclaim the land by refilling the pits and using them for cultivation.”

(ii) Others say that “the over exploitation of the resources should stop. It has been suggested by a few that buffer zone should be declared.”

(iii) While some people are of the opinion that “no new mines should operate as they have caused irreparable and irreversible damage to the environment, ecology and bio-diversity without any purposeful reforestation to rejuvenate the damaged and destroyed mining pits.”

(iv) Others believe that “a mining policy should be formulated by involving all stakeholders including environmentalists, protection of biodiversity and preservation of water resources and other water bodies, rights of tribals and other forest dwellers.”

(v) The notion of sustainable mining has been ridiculed by some and described more as a ‘parasitic extraction of iron ore, which sustains only a few people and for each person that it benefits there will be hundred people who have to suffer.”

Conclusion

Mining had caused the wanton destruction of the States environment, which is irreparable and irreversible. As such, the damage caused by mining to the environment is far greater than the loss sustained to the economy since the ban. The ban on mining has allowed for rejuvenation of the environment on the whole. The decrease in the air, water and noise pollution has benefitted not only human being but also animals. Nature’s resilience is evident by sightings of rare animals, butterflies and growth of rare and endemic orchids. There are signs of revival in sacred groves and community conserved forest too.

The ban on mining has allowed for rejuvenation of the environment as there have been improvements in:

(i) The air with people reporting an atmosphere that is devoid of dust
(ii) Springs, which were dry, have begun to flow gradually
(iii) The decrease in noise pollution has come as sigh of relief to a large number of people
(iv) While some rivers are flowing and have served a bounty for the fishermen, there are some water bodies still reeling from the impact of mining
(v) Some fishermen have noticed a rise in the amount of fish in the rivers since the movement of barges has reduced
(vi) Vegetation has improved, which is serving the locals in terms of fruits and other crop produce
(vii) The number of wildlife sightings has increased on the whole. Sacred groves have begun to attract various kinds of bird species.

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71 01.11.2012, Times of India, Page 2
72 01.11.2012, Gomantak, Page 4
73 11.10.2012, Times of India, Page 6
(viii) Although there has been some amount of recovery on the environmental front, the groundwater, vegetation and rivers will require a longer amount of time to recover from the damage done to them.
III. Social Impacts

Present social scenario

Since the suspension of mining activity in Goa, the trend of protests against the mining illegalities by activists and affected communities has now shifted to protest demanding the resumption of mining by truck drivers/owners and other beneficiaries of the industry. The so-called protests have taken a violent turn with threats to media persons and activists. However, positive changes were also noted. The social parameters that emerged during study were:

(a) Impacts of mining on culture and traditions
(b) Respite to schools
(c) Improvement in health conditions in mining areas
(d) Improved traffic conditions in mining areas
(e) Unrest and protests, truckers threatening activists and media
(f) Corruption in the Goan mining industry

The large presence of migrants in the village Panchayat of Sarvan and Karapur was said to have been ‘affecting the demographics.’ Presently, the migrant workforce has reduced as ‘they are forced to find work back home.’

(a) Impacts of mining on culture and traditions

Various communities have reported a number of impacts to cultural and traditional practices of the village due to mining:

(i) It has been reported that some of the women in the village of Surla did not want to “marry within the village as they can easily marry outside the village and escape the ill effects of mining.”
(ii) Previously, the people by contributing whatever they had, could afford to celebrate festivals, but ever since the mining companies began funding the festivals there was a “loss of the community spirit at the festivals”.
(iii) A ‘Crematorium had mining reject piled on the plot.’
(iv) Even ‘the sacred groves worshipped by the villagers are part of the mining leases.’
(v) The quick money earned at the mines ‘has steered the youth astray who no longer want to practice the occupations of their ancestors.’
(vi) In Sirgao, water tankers feed dry tanks so that ‘the dhonds can take their ritualistic bath.’

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74 13.11.2012, Times of India, Page 2
75 15.10.2012, Times of India, Page 1
76 25.10.2012, Times of India, Page 1
77 05.11.2012, Times of India, Page 6
78 21.10.2012, Herald Review, Page 1
(b) **Respite to schools**

With the increase in the amount of dust and owing to mining activity, it had been a challenge for managements of schools to retain teachers, ‘as they were unwilling to work in those conditions and were requesting transfers.’80

Since the ban on mining, teachers and students have reported an environment that is conducive for teaching. Teachers and students report a ‘better teaching and learning experience as there is less amount of noise from mining trucks.’81

(c) **Improvement in health conditions in mining areas**

A number of health problems have been attributed to the large presence of dust in the atmosphere. Mining companies would take precautions by watering roads so the dust would not rise, this however did not help much.

(i) Health problems like “High Blood Pressure, Lung Cancer, Cardiac Arrest, Bronchitis, T.B, were prevalent in the mining belts.”
(ii) It has been reported that “children were mostly affected by the constant pollution, as their resistance is low.”
(iii) A teacher from a school situated within the mines explains that there were numerous health problems to the students “due to the constant noise”.
(iv) A doctor reports that everyday 40 -50 patients on an average would report to be ‘suffering from respiratory, skin, hypertension, anxiety problems and sleeplessness.’82 It has been reported that ‘40% cases are of respiratory nature.’83

Since the ban, some people report that the dust is less and consequently the health problems have reduced. Though there hasn’t been immediate decrease in health related problems, people suggest that health will improve since the air is devoid of dust.

(i) Some say that “no new cases have been heard of skin problems, Kidney problems and T.B since the ban on mining.”
(ii) Villages like Surla in Bicholim report that “earlier they used to breathe dust, but now the health has improved.”

(d) **Improved traffic conditions in mining areas**

It has been reported that there were numerous problems due to large amount of traffic on the roads. Trucks knocked down a number of people, cattle and trees. People report that it was “a chaotic environment because of the heat, dust and noise of the trucks.”

i. It is reported that earlier people “did not want to go near the main road because of the large amount of dust in the air.”

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79 18.10.2012, Times of India, Page 1
80 31.10.2012, Times of India, Page 6
81 12.10.2012, Times of India, Page 1
82 11.12.2012, Times of India, Page 2
83 15.10.2012, Times of India, Page 4
ii. The navigational routes of the fishing trawlers “were changed to accommodate the free movement of mining barges.”

iii. Motorcycle pilots report that they had to take passengers ‘between trucks and it would take three hours to reach, now it takes less than one hour.’

Since the ban people report that there are less traffic jams and no constant noise of the trucks. Commuting is reported to be safer and convenient as there are no speeding trucks on the roads as before.

   i. Fishermen with canoes report, that that “they can freely move about without any fear of barges. The traffic of barges, which was present earlier is said to be reduced.”
   
   ii. People say that can get to their offices in time ‘without being blocked by the mining trucks.’

(e) Unrest, protests, truckers threatening media and activists

The truck drivers /owners have displayed socially violent behavior right from the arrival of Shah Commission on a visit to Panjim, Goa on 17 September, 2011.

In a noted incident on September 29, 2012, a group of concerned citizens visiting the mining area near the Selaulim Dam were ‘threatened and abused by the truck drivers with filthy language.’

A similar incident occurred in Margao on ‘2 March 2013 where mining dependent people heckled activists and disrupted a seminar on the Shah Commission report.’

“We are rough people, if you have something bad to write about us please go away (Konkani: “Aamimashe rough munispoilehsangtatatumkaamcher oppose burauntazailarsangtatatumkahangachichalatumi’’)

Presently,

   i. Mining dependents in one particular rally ‘demanded immediate resumption of legal mining in Goa and threatened to disrupt water supply from the Selaulim Dam, the major source of water for south Goa.”
   
   ii. 48 village Sarpanches of Goa appealed to the Supreme Court to allow ‘resumption of mining activities in the state.’
   
   iii. The Goa Mining Peoples Front put forward demands to ‘start immediate legal mining operations in the state in a scientific and sustainable manner.’

While the so-called ‘mining dependents’ continue protests demanding the immediate resumption of mining, those who were engaged in mining activities alongside agriculture have returned to

85 15.10.2012, Times of India, Page 4
89 19.12.2012, Herald, Page 1
90 01.11.2012, Herald, Page 4
91 01.11.2012, Gomantak Times, Page 4
farming. Presently, ‘youth who were previously fighting for the ban to be lifted, have gradually begun to return to the fields’, while others are ‘looking for alternate avenues’.

(f) Corruption in the Goan mining industry

The Justice M. B. Shah Commission and the Central Empowered Committee (CEC) have unearthed several instances of the illegalities. For instance,

i. A case emerged where mining lease was granted ‘in the name of an individual who had migrated to Pakistan and died there. He was never involved in operating the mining lease or seeking renewal of it. This lease was allowed to be operated illegally by a partnership firm comprising Timblo Pvt Ltd, Ms Radha S Timblo and others.’

ii. The ban on mining and related activity including transportation of ore by the Supreme Court was directly violated by some of the Mining Companies as people noticed trucks carrying iron ore late night.

The mining companies and their activities have harmed the traditional occupations and the religious practices which local communities have adhered to for generations.

Public suggestions, views and comments on the social scenario

Due to the mining operations being earlier carried out:

i. Truck drivers “would regularly fight as to whose truck would go first. Having more trucks then the other had become a competition amongst truck owners.”

ii. It has been reported that many people “did not have proper houses but would have a car and a garage for certain, from the wealth accrued through mining.”

Residents of the village throw light on the modus operandi of the miners who would “come into the village and give trucks to the unemployed families and the others would get a sum of Rs 5000 per month explaining it was noise and dust money.” People are of the opinion that if mining begins;

i. At least “one truck of every truck owner should be employed.”

ii. A number of people say that “the government should recover the 35,000 crores and use it to compensate truck drivers, instead of imposing house tax and other taxes on regular people.”

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93 13.10.2012, Herald, Page 2
95 28.10.2012, Times of India, Page 4
Conclusion

The ban on mining has allowed for a number of changes in the social sphere and has brought some amount of respite:

i. There has been change in the demographics with ‘the presence of the migrant workforce dwindling.’\textsuperscript{96}

ii. In schools, teachers and students report a ‘better teaching and learning experience as there is less amount of noise from mining trucks.’\textsuperscript{97}

iii. Health conditions have improved as “no new cases of skin problems, kidney problems or T. B have been reported after the ban.”

iv. Traveling has become ‘convenient, safer and less time consuming.’\textsuperscript{98}

v. Youth who were “reluctant to take up agriculture and were protesting for the ban on mining to be lifted have gradually begun returning back to the fields.”

Although the cultural aspect is yet to recover, if the ban on mining continues and economic and environmental alternatives are explored, the social scenario on the whole could make a successful recovery.
IV. Economic Impacts

Present economic scenario

‘Claims’ of financial crisis are rhetoric across the mining areas. Agricultural yield is positively benefitted due to the halt on mining. To ascertain the extent of the financial crisis and improvement in agriculture, horticulture, dairy, fishery, handicraft and tourism if any; the following parameters emerged:

1. Loss of income

(a) Employees  
(b) Truck owners/ drivers  
(c) Trading sector  
(d) Service sector  
(e) Mine/Lease owners  
(f) The State  
(g) Other sectors

2. Coping Mechanism

a) People are able to find/ are exploring other livelihood/business options  
b) Revival of agriculture  
c) State working out other means of balancing the budget

These are discussed below:

1. Loss of income

Losses are on account of a variety of reasons. There are direct losses to mine owners, employees, and the State Government. There are indirect losses to people such as truck maintenance in the service sector.

(a) Employees

Areas such as Honda, Bamboi–Pale, Pissurlem, Vaghurem, Chodea in North Goa had a considerable number of people employed at the mines. However, people in Amona say that ‘there hasn’t been much of an effect on their village as majority of those employed in the mines were migrants.’ At Surla, ‘30% of the migrants such as drivers, cleaners have all left.’

It has been claimed by people employed in mining activities that ‘90% of Bicholim Taluka’s economy is dependent upon mining’. The population of Bicholim Taluka was ‘97,922 in 2011’.  

99 03.10.2012 Times of India, Page 2
(b) Truck owners/drivers

It has been claimed by some people engaged in the mining sector that there are ‘about 1000 truck owners most of whom have been in business for the past 20 years who will be affected.’\(^{101}\) It has also been found that ‘persons owning trucks may have been maintaining them as assets both for profit and additional income and not for basic sustenance.’\(^{102}\)

It has been pointed out that among the truck owners demanding compensation ‘are also government servants who own several thousand trucks.’\(^{103}\)

Currently,

i. While some truck drivers “have headed to work in Karnataka to earn money”, there are a few truck drivers in the village of Surla, who are “happy that mining has stopped”.

ii. ‘In order to pay back the 400 crore liabilities by way of bank loans, the truck owners through the Goa Chamber of Commerce and Industry have petitioned the Reserve Bank of India to restructure the loans.’\(^{104}\) The Goa Chamber of Commerce and Industry, requested the Reserve Bank of India ‘to float a package for rehabilitation of people affected by seizing of mining activities.’\(^{105}\)

(c) Trading sector

Those in the trading sector have claimed that the stoppage of mining has led to a ‘cascading effect’ on all types of trading activities. The barge industry claims that it ‘has 6000 people directly and 30,000 people indirectly employed’\(^ {106}\); it further adds that ‘Goa handles 80% of inland water transport trade of the country and that the ban would leave about 370 barges valued at about Rs 1,200 crore, which would be rendered idle.’\(^ {107}\)

Considerable amounts of the migrant workforce hired in the mines have left the state since the ban on mining; these migrants were patrons to various stores who have witnessed a drop in their sales. Shopkeepers report how customers look for cheaper alternatives of goods without going for the expensive ones as opposed to before. It has been explained that earlier migrants were provided free electricity and water which was provided or paid for by the mining companies so they could spend on other things, a privilege they no longer have. It has been observed that customers have cut down on the reckless spending tendency that was prominent.

Presently,

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\(^{101}\) [Source 101]

\(^{102}\) [Source 102]

\(^{103}\) [Source 103]

\(^{104}\) [Source 104]

\(^{105}\) [Source 105]

\(^{106}\) [Source 106]

\(^{107}\) [Source 107]
Many shops say that their sales have declined “a straight 50%” and in some cases even more. Shopkeepers explain that their goods would get “sold out in 15 days and they would have to make purchases to replenish their stock.” Some shops situated in the markets however state that the “business is not so bad.”

A shop providing DTH (Dish TV) services recalls how people would recharge their Dish TV monthly or two days before expiry, “now people don’t recharge their dish services for months” he explains.

A shop in a major mining town which had customers “… from 7:00 in the morning to 10:00 in the evening during mining…” is now said to be open for merely “1 or 2 hours a day”.

(d) Service sector

In support of those bearing loan liabilities, local banks have suggested options where those people interested in disposing off their trucks would be guided in doing the same. Further to this, ‘the life insurance sector has reported no loss of policy premiums incomes from policy holders along the mining belt or any case of policy surrender since the suspension of mining activity.’

In the present scenario:

The daily transaction in one of the banks in the mining areas “was 15 – 20 Lakhs per day that now has dropped to 5 – 6 lakhs.”

“A number of people have withdrawn their fixed deposits and savings deposits before maturity.”

(e) Mine/Lease owners

As lease and mine owners enjoy the cream of the economic profit, they also are the ones declaring huge losses. Although, they claim that the reason for seeking resumption of mining is due to the pathetic state of their workers.

Mine owners on the other hand have bailed out from sharing any responsibility in providing relief to the mining dependent by claiming that the mining industry itself is in trouble due to the suspension of mining activities.

Sesa Goa has reported ‘26% decline in the net profit because of the ongoing mining ban in Goa and Karnataka.’

108 03.01.2013, Herald, Page 3
109 26.01.2013, Herald, Page 14
(f) **The State**

It is claimed that ‘the Revenue loss to the state has been 1,500 crore\(^\text{110}\). The loss to exchequer has on the other hand been found to be nearly 24 times the loss due to revenue from mining, pegged at 35,000 crore as per the Shah Commission Report.’\(^\text{111}\)

"The targeted revenue collection was to the tune of Rs 1,000 crore in the form of royalty from mining exports but so far we have realized only Rs 350 crore resulting in a shortfall of Rs 650 crore\(^\text{112}\)."

(g) **Other sectors**

The ancillary sectors include, earthmoving machinery owners, mechanics, workshop operator’s, welders, shops dealing in spare parts and truck tyres, petrol pump dealer’s, vehicle manufacturers, migrant drivers, labourers, merchandise and spare part traders as well as restaurants. The effect of ‘the ban has hit factories in Pune where the sale of trucks for ore transportation has dropped.’\(^\text{113}\)

Presently,

i. Shops selling paint have also reported a “slight drop in sales, as people no longer need to paint their trucks.” There has been a drop of sales of cement bags too, as there were people who would renovate their homes and in some cases even build new ones during mining.

ii. Interestingly it has been pointed out that during mining “because of the dust people had to paint their house regularly,” bikes needed constant servicing and the houses and clothes needed washing daily. This need not be done, if the ban continues.

> “Migrant drivers and laborers have not returned after the rains and this has affected the merchandise off-take from traders. Truckers and spare part traders have no cash flows.”\(^\text{114}\)

2. **Coping mechanism**

(a) **People are able to find/ are exploring other livelihood/ business options**

In the present scenario,

i. A positive development for the traditional fishing communities in Chichalim is ‘the rise in the ‘mendios’ (Window Pane Oysters, extracted for consumption) which were hard to

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\(^{110}\) 07.01.2013, Times of India, Page 7


\(^{112}\) B. Vijayan/State Chief Secretary/27.02.2013,Gomantak Times, Page 1


\(^{114}\) Rajendra Kakodkar/Business Consultant/ 22.10.2012, Times of India, Page 2
find earlier."(Chicalim town is only a couple of kilometers from the bank of River Zuari, through which transportation of ore by barges was taking place prior to the ban.)

ii. Some respite came to the truck owners in December as ‘more than 100 idle trucks from Goa were contracted to carry garbage in Bangalore.’

iii. Some truck drivers have agreed that ‘agriculture will help clear their loans from the banks and sustain them.’ Truck drivers in Sanguem ‘have successfully undergone training in coconut climbing workshop so also 20 self help groups have approached the Zonal Agricultural Officer to get back to farming.’

iv. A truck driver with the closure of mines in Sirigao ‘has managed to bounce back as a motorcycle pilot.’

“After the meetings that have been held in Bicholim, I realize that agriculture will definitely help me.” – Truck driver/Bicholim/ 24.03.2013, Herald Review, Page 1

(b) Revival of agriculture

Since the ban, people who had neglected their fields have begun working on them. Some say that since people are idle and jobless, they have begun farming. There are people who had been cultivating on a small scale and are tending to their plantations of coconuts, spices, bananas, beetle nuts and jackfruits. The instances of revival include:

i. Traditional farming, which was discontinued in Naveli and Bicholim, has been revived with “15 lakh sq.mts of agricultural field; previously only 20% of it was under cultivation.”

ii. In Pilgao, “there has been cultivation of chilies and other pulses.”

iii. A farmer from Netravali who ‘was a former supervisor in the mines for 30 years recalls how they were faced with the same predicament where they did not know any other way to earn a living but work in the mines. Today, he boasts how his village has fresh stream water, rice and vegetables grown in their own fields while he adds that they go to the markets as sellers not buyers.’

iv. ‘Chamtu Velip recalls how through payment he received from the mining companies he could just about spend on children’s schooling after buying the basic necessities. He adds that today all he needs is five workers per day to pluck cashews during the season.’

v. Tamdo Gaonkar from Netravali saves “between 1 lakh to 1.5 lakh annually from profits earned from cashew plantations and has invested 8lakhs in an agricultural plot.”

vi. Cultivators exclaim that with mining stopped, their chilies and cashew produce has increased they explain how ‘earlier the dust would coat the plants and rot the flowers.’

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115 15.03.2013,Times of India, Page 3
116 24.03.2013,Herald Review Page 1
118 05.11.2012,Times of India, Page 1
119 12.10.2012,Times of India, Page 1
120 05.11.2012,Times of India, Page 6
121 05.11.2012,Times of India, Page 6
122 05.11.2012,Times of India, Page 6
123 05.11.2012,Times of India, Page 1
vii. Farmers at Bicholim have turned ‘30 hectares of land green with vegetable cultivation.’ They complain that rejuvenation of the land is slow with all the silt accumulated in the fields, but locals are working on it.”

viii. Farmers from Surla estimate that ‘only 30% of the farms are under cultivation they are certain if they get water than 10 hectares of the farms will be cultivable.’ Farmers believe that ‘what is needed is hard work which many people are not ready to do around mining areas.”

(c) State working out other means of balancing the budget

In order to assist farmers in agriculture, the State Government has appointed ‘special agricultural officers to guide those who want the pollution of water bodies and silt in the fields reduced, ‘locals have been returning back to their fields.”

In order to assist truck/ tipper owners and drivers: “Under the first scheme those who have lost their jobs will get paid 50 per cent of their gross salary and other incentives, The second scheme will be providing financial relief to truck / tipper owners restricted to only two trucks. Rs 8000 per month for the first truck and Rs 4000 per month for the second truck will be given.”

"Dishing out doles by the government to the people affected by the closure of the mining industry in the state is no solution to the problem, and the government in co-ordination with the Centre should try to find out a permanent, long-term solution for the same". – Mr. Venkaiah Naidu / Senior Leader of BJP/ 31.01.2013, Navhind Times

Public suggestions, views and comments on the economic impacts

As mining has been going on since Portuguese colonization of Goa, it has been considered as the backbone of Goa’s economy. However the damage to other economic contributors to Goa’s GDP like agriculture, handicrafts, animal husbandry and rearing, that made local communities self – reliant and self – sufficient, have never been assessed or addressed.

With the ban on mining in place a number of people have been looking for alternate avenues. Some say that people should take up growing Ayurvedic plants as there is huge revenue from medicinal farming. Some are of the opinion that Dairy farming and paddy cultivation should be restarted. There are a few farmers who are experimenting by growing Mushrooms. They add that Mushrooms are suitable for the Goan climate by investing just about Rs 50/- on the seeds, the mushrooms will sell for Rs160/- per kg in the market.

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124 07.03.2013, Gomantak Times, Page 2
125 07.03.2013, Gomantak Times, Page 2
126 04.10.2013, Herald, Page 4
128 Goa Government/ 10.03.2013, Gomantak Times, Page 1& 2
129 http://www.navhindtimes.in/goa-news/goa-must-find-long-term-solution-mining-imbroglio-venkaiah
Through comments of the public, it has been made evident that alternatives to the mining industry are being looked out for. Some of the most common ones suggested are:

i. Revival of agriculture
ii. Alternatives for transportation sector
iii. Promoting Goa as a trade hub
iv. Bringing non-polluting industries to the state
v. Making use of water from mining pits
vi. Venturing into new avenues like warehousing, animation and film studios
vii. Promotion of heritage tourism
viii. Entertainment sector
ix. Introduction of industries like food processing and information technology

Alternatives for transportation sector: “Trucks and barges that are idle and can be used for transportation of goods”.

Bringing non-polluted industries to the state: “…bring in more non polluted industries to the state.”

Making use of water from mining pits: “The 140 mining pits in Goa have plenty of water that can be used”.

New areas like warehousing animation and film studios: “Goa could attract investment for warehousing, animation and film studios”.

Entertainment Sector: “The entertainment sector is a viable option to make for the mining revenue lost due to the halt in mining.”

Promotion of Heritage Tourism: “…the government should use the archeological assets inherited by Cudnem wherein a museum can be set up.”

Industries like food processing, information technology: “In 15-20 years industries like food processing, information technology and other knowledge can be developed”.

Conclusion

It is evident from the sample set of news clips reviewed and field surveys conducted that even though ‘mining dependents’ in the form of truck drivers, barge owners, contractors, mine owners, employees and other ancillary industries have claimed losses, there is a section of the public benefitting economically from the stoppage of mining activity, indicated by improvement in agricultural yield and others exploring new options.

With instances where positive impacts on agriculture have yet been reported within just four months of the Supreme Court order, as a reassurance, residents from villages around the mines at Netravali which were shut down in the year 2003 have indicated positive results due to the stoppage of mining in the area by reporting huge improvement in the quality of stream water and yield of local produce. Their comments come 9 years after the ban, hence if the ban on mining continues, one could expect other such positive changes in future.
“…the excuse that mining is the backbone of the Goan economy is hollow. It was the backbone of the Portuguese economy, which needed to survive in the wake of economic sanctions imposed by Prime Minister Nehru on Goa and that's why industry started in the first place.” Ramesh Gawas/ 06.10.2012, Herald, Page 2
V. Conclusion

Mining had caused wanton destruction of the environment. The ban on mining has allowed for rejuvenation of the environment to some extent.

The rapid survey to briefly review the impacts of ban on mining through articles in print media and primary survey reveals that, mining operations were responsible for damage to air, water and causing noise pollution which in turn had a cascading effect on the local food produce and health. The change in demographics due to unplanned influx of migrants had also caused damage to the social fabric and cultural aspects in the areas affected due to mining.

The interim ban on mining in Goa has resulted in:

a) The decrease in the air, water and noise pollution benefitting not only humans but also animals alike. Springs, which were dry, have begun to flow gradually. Some fishermen have noticed a rise in the amount of fish in the rivers since the movement of barges has reduced and local agricultural produce has increased

b) Teachers and students in mining areas are satisfied with the stoppage of mining activity as it is now a dust free and noise free environment, while travelling has become convenient, safer and less time consuming as also youth are returning back to agriculture

c) Even though ‘mining dependents’ in the form of truck drivers, barge owners, contractors, mine owners, employees and other ancillary industries have ‘claimed’ losses, there is a section of the public benefitting economically from the stoppage of mining activity, indicated by improvement in agricultural yield and others exploring new options.

Although the cultural aspect is yet to recover from impacts e.g. loss of community spirit at festivals and water sources for religious ceremonies as well as youth steered away from traditional occupations, if the ban on mining continues and economic and environmental alternatives are explored, the State on the whole could make a successful recovery from the adverse impacts of about 60 years of continued mining operations.
Methodology

I. Print media review

Purpose

The aim of the study is to review positive and negative environmental and socio-economic impacts in Goa due to suspension of ‘all mining operations in the leases identified in the Shah Commissions Report and transportation of iron ore and manganese ore from those leases’, by the order of the Hon’ble Supreme Court of India (in W.P 435/2012) on 5 October 2012.

Hypothesis

People are adjusting themselves to a new social and economic order and enjoying a less polluted environment.

Method

News articles pertaining to mining and the ban in Goa were taken into consideration. The review was carried out across 3 Newspapers, - 2 Local, Herald and the Gomantak Times, and 1 National Newspaper, the Times of India, from October 2012 to January 2013.

The news articles contained views/comments of stakeholders, individuals and groups, locals, farmers, activists, teachers, representatives of financial institutions, religious leaders, government agencies, politicians, leaders of unions and associations, truck drivers, representatives of mining companies, related reports and comments of experts on the subject.

Collecting supplementary and additional information


About 200 articles were used to objectively analyse people’s reaction to the suspension of mining operations in Goa.

\textsuperscript{130} Goa Foundation
II. Primary survey

Purpose

The aim of the study was to gather information on the impact of the Interim ban on Mining by an order of the Supreme Court, by way of primary survey.

Hypothesis

People are adjusting themselves to a new social and economic order and enjoying the less polluted environment

Planning during the course of work

A questionnaire was prepared which covered three broad sections Economic, Social and Environmental. A list of representative areas was prepared for each Taluka.

Representative list of mining areas in Goa

<table>
<thead>
<tr>
<th>No.</th>
<th>Taluka</th>
<th>Areas</th>
<th>Mining background</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bicholim</td>
<td>Amona, Bicholim, Mayem, Mulgao, Naveli Pilgao, Sanquelim, Shirgao Surla</td>
<td>Trucks, Siltation of water bodies and agricultural area, Bicholim River, Mine Excavation Sites and Truck routes</td>
</tr>
<tr>
<td>2</td>
<td>Dharbandora</td>
<td>Mollem</td>
<td>Mine excavation sites and Truck routes</td>
</tr>
<tr>
<td>3</td>
<td>Mormugao</td>
<td>Vasco</td>
<td>Truck route /Iron ore Export Harbour, Mining offices, Barges, Silting of River Zuari</td>
</tr>
<tr>
<td>4</td>
<td>Ponda</td>
<td>Bamboi Marcel Nanus and Usgao</td>
<td>Sesa Pig iron Plant, Barges, Truck routes, Employees</td>
</tr>
<tr>
<td>5</td>
<td>Quepem</td>
<td>Quepem, Rivona Sonar Bhat, Tilamol, Zambaulim</td>
<td>Mine sites Truck routes, Silting in River Kushawati</td>
</tr>
<tr>
<td>8</td>
<td>Salcete</td>
<td>Margao</td>
<td>Employees, downstream impact (water sources) of mining belt</td>
</tr>
</tbody>
</table>
Interviews

The survey was done using a semi-structured interviews process with one to one or group interviews. Five pilot interviews were done initially to assess the suitability of the questionnaire and suitable changes were made. Each interview would take 20–40 minutes. The authors carried out the field survey covering areas like Pilago, Naveli, Shirgao, Mayem, Pissurlem, Valpoi, Honda, Sonshi, Advoi, Bicholim, Mulgaon, Bamboi, Nanus, Sanquelim, Surla, Usgao and Chodea in North Goa. While in South Goa areas such as Neturli, Uguem, Sanguem, Curtorm, Rivona, Zambaulim, Tilamol, Cuncolim were surveyed. The views and suggestions of about 80 stakeholders were obtained during this process. The interviews were carried for a total of 12 days in February and March 2013.