

UNDERMINED

Destruction of Tiger Habitat in India



environmental investigation agency

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Right: There are probably fewer than 5000 wild tigers left in the world.

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Introduction

Saving the tiger is not just about saving the species. The tiger is a symbol of the health of the forests it inhabits, the same forests that provide water for millions of people. The presence of the tiger is very much an indicator of the success or otherwise of “sustainable development” strategies, which as illustrated in the case study in this report, are all too often sustainable in name only. The reality is a battle between local people and wildlife versus corporate and state greed.

As home to over 50% of the world’s remaining wild tigers, India is a stronghold for the species. The cost of securing the long-term viability of the, approximately, four percent of India’s landmass that makes up national parks and wildlife sanctuaries is nothing compared to the cost that is borne by society through its decline.

The loss of those watersheds and the impact that it has on the livelihoods of local people as well as India’s natural heritage is a far higher price to pay.

Healthy forests can provide water security and prevent soil erosion, sedimentation and the subsequent flooding of rivers that can in turn lead to famine and disease.

Since 1996, EIA has been documenting examples of state and central government negligence and inadequacy in enforcing national legislation designed to protect India’s natural heritage.

I have never witnessed such wide scale devastation inside a protected area as that which has taken place inside Jamwa Ramgarh Wildlife Sanctuary in the Indian state of Rajasthan. Apart from the destruction of key tiger habitat, the misery that has been caused to local farming communities as a result of the quarrying for talc and marble is immeasurable.

Today Rajasthan’s Ministry of Forests is eager to address violations facilitated by the confusion and corruption that appears to have reigned in previous administrations, but in India’s dynamic political landscape action needs to be taken swiftly.

With economic policy racing towards increasing international access to India’s resources, the responsibility no longer lies just with the government authorities in India.

As the ink dries on the promises made at the World Summit on Sustainable Development, all nations must look at the policies that drive over-exploitation of natural resources. International companies, financial institutions

and foreign government aid agencies must calculate the true costs of hasty short-sighted investments. In India, state and central government authorities must not allow themselves to be a pushover to corporate greed.

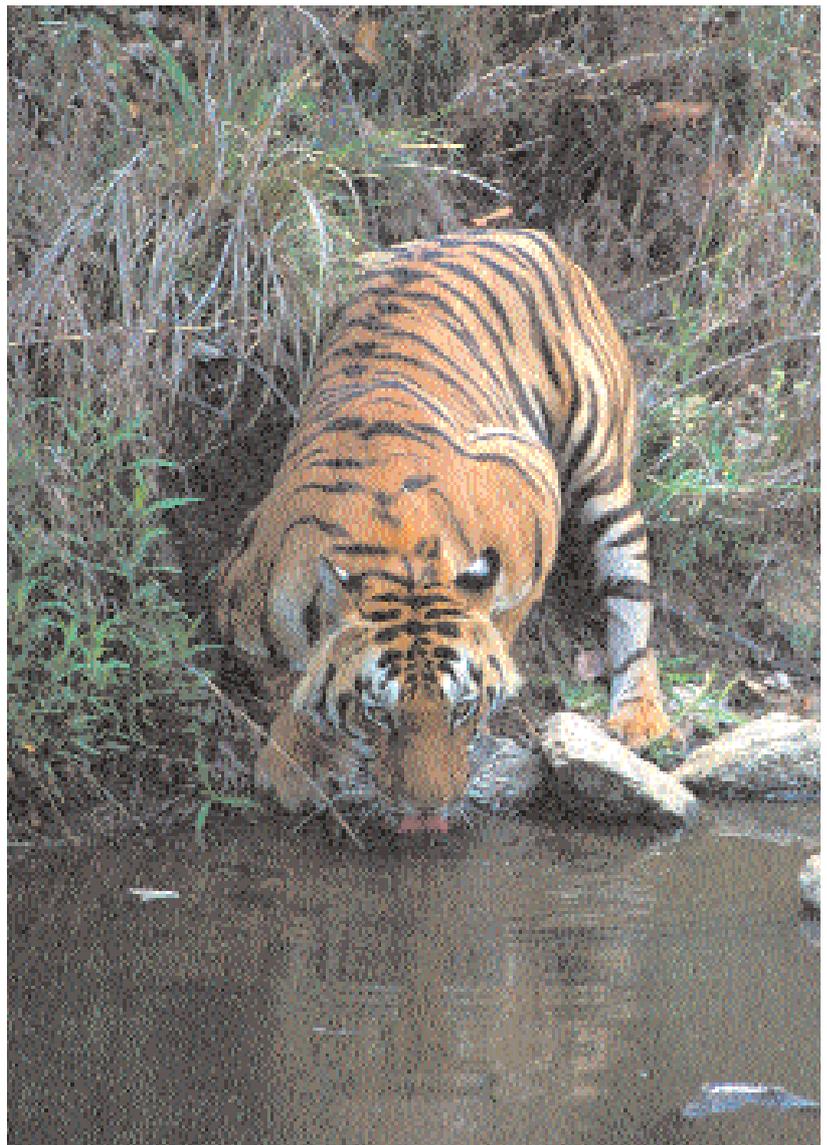
Precedents must be set with violators being penalised through the courts. Without any deterrents, private companies, with or without government sanction, will continue to illegally devastate the forests for personal gain. Domestic and foreign consumers must be informed about the true costs of the raw materials, including luxury materials such as talc and marble.

For the tiger, the good news is that habitat destruction can be stopped and forests restored. This can be achieved through enforcement of existing legislation and working with local communities to fight the common adversaries responsible for destroying the tigers’ forests

Debbie Banks, Senior Campaigner,
March 2003

Below:

The forests that tigers depend on, are the same forests that provide water security for millions of people.



“The tiger lives in the richest part of the country and everyone wants a bit of it”

Valmik Thapar,
Naturalist and
Author, 2002

India's Tigers

No one really knows how many tigers are left in the wild. It is estimated that there are probably fewer than 5000 worldwide, with India home to around 2500 – 3000 of them.

Contemporary conservation biologists agree that today, rather than trying to count tigers, it is more important to identify and protect breeding populations, to monitor trends in the tiger population and determine how many cubs are raised and disperse successfully. The availability of prey, water and cover are also determining factors in assessing tiger population viability, and they are often easier to measure than counting tigers.

The threats to tigers are well known and documented. The fact that tigers are poached to supply an international criminal market for their skins and bones is not in dispute.

But it's not only the illegal trade that is affecting the long-term future of the tiger. Habitat loss and associated decline in natural prey populations, along with poaching of prey, are major threats as they often lead to an increase in conflict with local communities and livestock.

India has lost 50 to 75% of its forests in the last century and today only 10 to 20% of the country is under forest cover¹, a long way short of the goal of having 33% forest cover as set out in the National Forest Policy 1988.²

Much of that habitat destruction is caused by industrial encroachment into what remains

of India's watershed forest, including areas that fall under the four percent of India's land mass that has been designated a protected area e.g. wildlife sanctuaries and national parks. The 4% of the landmass that is under protected area status also constitutes 14% of the country's total forest cover³.

Wreaking much of the devastation is the mining industry, using the cover of development to bend and often break the law for short-term financial gain. Wildlife experts in India report that at least 200 of India's protected areas have been impacted in one way or another by the effects of mining⁴. Despite the fact that they are equally important for tigers as world famous tiger reserves, many of the areas threatened are low profile wildlife sanctuaries.

Many of India's protected areas are core breeding areas for tiger populations with forest areas outside acting as corridors connecting the populations. These corridors too are being eroded by mines, dams, roads, agriculture, plantations, human settlements and livestock. Fragmentation of habitat inevitably leads to increased conflict, and tigers are forced into isolated populations that are more vulnerable to local extinction. This in turn impairs the probability of long-term survival as population size and reproductive success are reduced and dispersal patterns of sub-adults are impaired.

Right: Chital are one of the tigers preferred prey species. Habitat loss and prey decline are major threats to the survival of wild tigers.



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Mining – A Tool for Sustainable Development?

Mining is an important source of resources for everything from fuel to building materials and also forms the backbone of many countries' economies. Mining is often seen as a development vehicle upon which to base the sustainable economic development of countries with economies in transition.

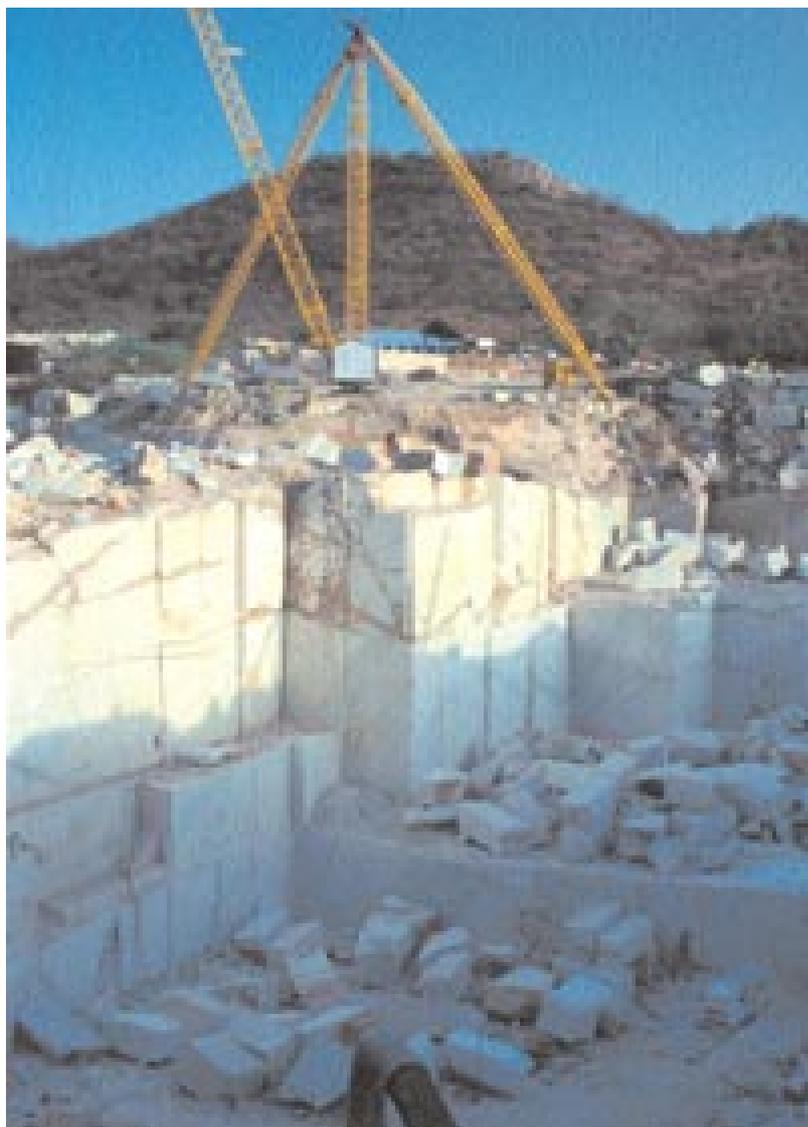
India's mining industry is large and expanding with an estimated value in 1999-2000 of US\$10 billion. There are 87 minerals and metals that are currently mined in India. Mining is an excellent source of foreign revenue and for this reason the government of India has been pushing the expansion of the mining sector so that India can compete with operations in the rest of the world.

India's Ministry of Mines states clearly in its National Mineral Policy 1993 "It [mineral wealth] is a major resource for development. The management of this precious resource and its optimal and economical use are matters of national importance." On paper, they are also keen to be seen to be taking a responsible attitude towards the future development of the mineral industry in India. One of the stated objectives is: "To minimise adverse effects of mineral development on the forest, environment and ecology through appropriate protective measures".⁵

In their preparations for the World Summit on Sustainable Development (WSSD), the Government of India acknowledged that poverty eradication goes hand in hand with good environmental governance, recognising that: "There exists a direct relationship between environmental conservation and economic development." That, "It is a matter of our individual will and careful planning which helps us do things which achieve development without harming the environment."⁶

Many in the industry believe that mining can be undertaken in an environmentally and socially sustainable manner and can fit the principles expounded at the WSSD.

The United Nations Industrial Development Organisation (UNIDO) has also stated that mining can be a tool for economic growth and therefore aid efforts at poverty reduction by increasing economic development. It is currently supporting a \$1.2 million programme promoting India's stone industry in the international marketplace.⁷



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UNIDO stresses that it operates under a set of 'guiding beacons' called the three E's: "These 3Es – economy, employment and environment – are guiding beacons for UNIDO's approach to its markets, clients and customers, especially in light of growing international concern over the social and environmental consequences of industrialization."⁸

The World Bank believes that mining can make a significant contribution to sustainable development, but having its fingers burnt on several occasions has led to policy change. The World Bank has developed what it calls 'safeguard policies' for environmental and social issues for project sponsors of mining projects. The International Finance Corporation, the part of the World Bank that promotes private sector investment in developing countries, including mining projects, has a number of operational policies including one for natural habitats.

Above: Marble mine in Jamwa Ramgarh Wildlife Sanctuary.

"The earth provides enough to satisfy everyone's need, but not for anyone's greed"

Mahatma Gandhi

“High environmental and social costs come with natural resource exploitation”

Oxfam 2002

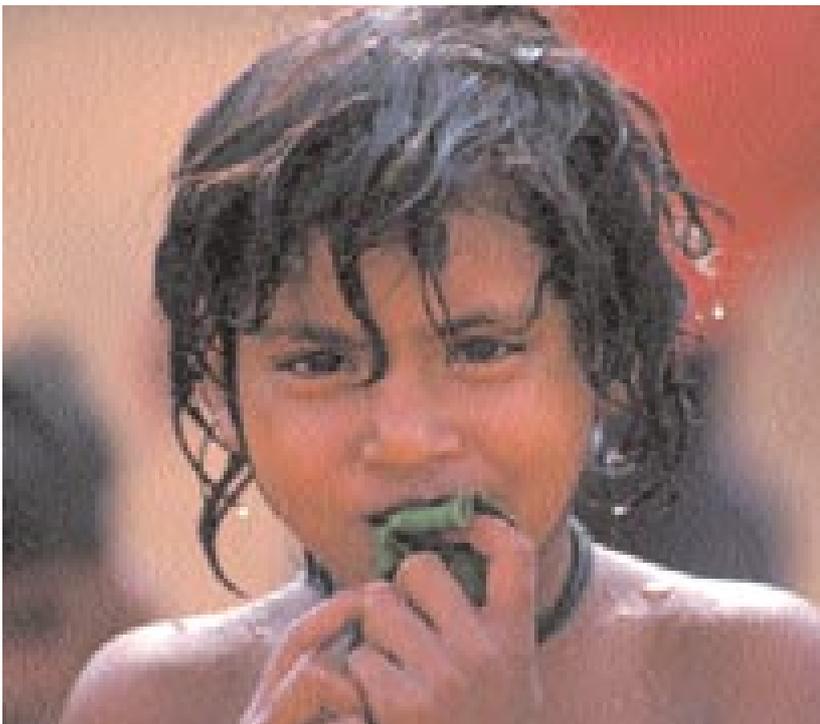
The IFC policy document claims, “The conservation of natural habitats is essential for long-term sustainable development,” and goes on to say that the IFC will not “support projects that, in IFC’s opinion, involve the significant conversion or degradation of critical natural habitats.”⁹ A very clear statement on the importance of natural habitats and the need for their effective protection.

Yet the claimed development benefits of mining are far from universally accepted. A 2002 report published by Oxfam examining mining and its effects on economic development points out that while governments in the developing world and institutions such as the World Bank promote mining as a pathway out of poverty, the reality is that, in general, mining has not made a strong contribution to sustainable development in developing countries.

The report states; “When mineral development occurs in a context of underdeveloped social, political and economic institutions, the non-renewable resource wealth tends to be squandered, the level of social conflict increases and nearly irreparable damage is inflicted on the environment”.¹⁰

A report by the International Institute for Environment and Development points out: “Unless there is effective planning, the economic and social benefits brought by minerals development may last only as long as the mine, while the environmental damage may remain indefinitely”.¹¹

Below: Rajasthan’s forests act as vital watersheds providing water security for the people of the region.



Environmental Costs of Mining

The true cost to tiger habitat of mining operations can be immense. By its very nature mining is disruptive, necessitating the ripping up of the earth and the depositing of the resulting waste materials, often in huge piles in the vicinity of the mines. Laying aesthetic concerns aside, mining harms the environment in a number of ways: damage to the atmosphere, deforestation, breaking up of the ground, contamination of soil, contamination of surrounding water bodies, contamination and depletion of the water table. All of these have serious repercussions for ecosystems and local communities.

Watersheds are essential for the well being and survival of the living things that are dependent on the water that they provide. They are complex networks that have distinct relationships with their surroundings and are susceptible to changes. When one part of a watershed is altered the knock-on effects are felt throughout the entire system.

When trees are cut down and huge pits are dug into the land it is natural to expect that there will be changes to the watershed and its ability to supply and store water. Coupled with loss of watershed is the destruction and depletion of the water table.

As a result of the mine companies digging pits, ground water is sucked into the mine quarries and pumped out. The extraction of this water causes the level of the water table to drop significantly. If there is less water available for irrigation, crop yields may fall as a result, leaving villagers less able to meet their needs for food by themselves and having to rely on buying in food. This increases their dependence on the earnings from the mine and reduces traditional crop production processes, creating a vicious cycle that often leads to indentured workers having a feudal relationship with the mines. Villagers have to dig deeper wells or travel greater distances for water and the ability to grow crops is severely impacted.

For tigers the result is the direct loss of habitat that provides essential cover for hunting and resting. Disturbance and opening up of the forest not only increases the accessibility of tigers to poachers, but also negatively affects the availability of the tiger natural prey species. As a result, predators like the tiger are brought into direct conflict with local villagers and their livestock.

Disused mines too have a negative impact



Left: The most damaging and long-term affects of mining are associated with it's impact on important watershed forests which are of the utmost importance for the survival of wildlife, the human population, and the animals and crops that sustain life.

©Paul Redman/EIA

on the surrounding area. The relevant mining laws in India state that “Every holder of prospecting licence or mining lease shall undertake the phased restoration, reclamation and rehabilitation of lands affected by prospecting or mining operations and shall complete this work before the conclusion of such operations and the abandonment of prospect or mine” .¹²

The need to rehabilitate abandoned mine workings is also recognised in the “Vision 2020” plan presented by the Rajasthan Department of Mines and Geology¹³. Rehabilitation has in some cases been sidestepped by companies declaring bankruptcy after they have ceased mining operations.¹⁴



Right: Even an abandoned marble mine in Jamwa Ramgarh Wildlife Sanctuary continues to drain the groundwater and deprive adjacent areas of water.

©Debbie Banks/EIA

Human Costs of Mining

Mining is a dangerous undertaking even in the most advanced operations. The risk of personal injury is an ever-present threat, especially in poorly run mines. The people most at risk are generally the cheap local labourers who are often seen as expendable commodities and in many parts of the world there are no insurance or workers' compensation schemes. It has been claimed that some mine workers "are exploited to the core, are treated cruelly and lead a subhuman life."¹⁵

The mining companies often promote these jobs as being of great benefit to the local communities, providing employment and much needed income. The reality is usually very different, with local people commanding the lowest rates of pay, working the longest hours at the most physically demanding tasks and being supplied with none of the benefits and safeguards that other employees are granted by right. For example in some mines in Barmer, Rajasthan, there is no fixed rate for labour nor any fixed compensation in the case of accidents.¹⁶

As the best jobs generally go to outsiders brought into the mining area, irreparable damage can be done to the social fabric of communities living in close proximity to mines. The influx of outsiders causes tensions and conflicts within local communities and also puts extra pressure on already stretched local resources.

Another adverse impact is the forced relocation and displacement of villages and villagers to make way for mining operations. Mineral deposits may also fall inconveniently on land either owned by, or used by, local villagers. Mining companies often override the land-rights of villagers and either mine illegally or deceitfully obtain the rights to the land and mine the area regardless of local feelings.

In the long term once the mine has exhausted its supply it will be closed down, the skilled workers will move on to the next job whilst the unskilled workers from the villages will remain unemployed and unable to grow sufficient food for their survival, leading to increased migration from village to town or city.



Left: Illegal sandstone mines at Panna tiger reserve were closed down and tigers are now reusing the area.

“social conflict increases and nearly irreparable damage is inflicted on the environment”

Oxfam 2002

© Joanna Van Gruisen/EIA



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Above 1-4: Tarun Bharat Sangh and local villagers construct 'johads' to harness valuable water supplies that can be used for crop irrigation.

Water – A Far More Precious Resource

The United Nations has called upon all Member States to “adopt effective measures to realize, without discrimination, the right to water.” Mining operations that disrupt watersheds and deplete water tables are effectively denying affected communities a basic human right.¹⁷

Tarun Bharat Sangh (TBS) is a small, grassroots, activist group that works on issues of water security, environmental protection and social issues. The underlying theme of their work is water security for people and wildlife. They are based in the Indian state of Rajasthan, home of the world famous tiger reserves of Ranthambore and Sariska.

TBS has worked extensively in the area of Sariska to help conserve valuable water resources and to help ensure a secure future for the people and wildlife of the area. They have first hand experience of the negative impact mining operations have on the hydrology of the surrounding area.

TBS works with local communities to construct small, traditional water harvesting structures, known as johads. This has been a very successful tool in bringing drought-hit areas of Rajasthan back to life. Without water security there can be no social development.

Working with local communities TBS has regenerated in excess of 6,500sq km of land in more than 650 villages leading to increased water security, social and economic improvements and a healthier ecosystem. Along with the villagers, wildlife including the tigers of Sariska Tiger Reserve and the neighbouring Jamwa Ramgarh Wildlife Sanctuary also use the johads as water holes and have benefited greatly from the work of TBS.¹⁸

By effective construction of johads in partnership with the villagers of the Arvari watershed it has been possible to turn the Arvari river from one that runs only during the monsoon to a perennial river. The effects of this have been enormous the land is more productive and incomes for the villagers have risen which has meant that migration by the young men of the villages to seek work in the cities has stopped.

The wildlife of the area has also benefited from the rejuvenated river. The people of Bhaonta-Koylala at the head of the Arvari River have declared the surrounding forests a ‘peoples wildlife sanctuary’, the beginning of the sanctuary is marked by the dam the villagers built at the head of the Arvari. The sanctuary has attracted tigers and in 1999 it was reported that there were three tigers living in the sanctuary. Construction of johads and the subsequent knock-on effects of effective water security have made all this possible.¹⁹

TBS have come face to face with the mining lobby when they joined forces with the management of Sariska Tiger Reserve to stop illegal marble mining in and around the Tiger Reserve. In 1993 TBS petitioned the Supreme Court in Delhi to stop mining activities inside Sariska Tiger Reserve. The petition was successful with the Supreme Court Judges ruling that all mining should cease inside Sariska and in those mines that fall partly inside.²⁰ Despite 1993 Supreme Court judgement, mining still continues to the present day. TBS are continuing to fight against the selfish interests of the mining lobby.



© Robin Hamilton

Above: Jamwa Ramgarh Wildlife Sanctuary is a vital overspill area for Sariska's young tigers.

The Plight of Jamwa Ramgarh Wildlife Sanctuary

A stark reminder of the negative impacts of mining can be witnessed inside the Jamwa Ramgarh WS in Rajasthan. At 300sq km, Jamwa Ramgarh WS is a vital forest corridor contiguous to Sariska Tiger Reserve. Large tracts were declared Reserve Forest in 1961 under the Rajasthan Forest Act of 1953 and additional areas were added to create the Wildlife Sanctuary in 1982 under the Wildlife Protection Act of 1972.²¹

The most recent census data available indicates one resident tiger and fourteen leopards, yet local villagers, the Forest Department and tiger experts believe that Jamwa Ramgarh WS is a vital overspill area for the young tigers of Sariska, with perhaps 2-5 resident tigers and more transient individuals.²²

Such is the importance of Jamwa

Ramgarh WS to the tiger population in Sariska Tiger Reserve, estimated to be around 22 tigers, that in 1999, the Rajasthan Forest Department submitted a proposal to the Central Government requesting that the jurisdiction of Sariska Tiger Reserve be extended to incorporate Jamwa Ramgarh WS.²³ The Director of Project Tiger in the Central Government visited the area and confirmed that it would be incredibly valuable to tiger conservation to include the area under Project Tiger administration.²⁴

The habitat is largely ideal tiger forest, and tiger experts believe it has areas of *dhok* forest that are of better quality than even Sariska or Ranthambore.²⁵ Sariska itself receives approximately 23,000 tourists each year and the revenue raised is around US\$ 84,000.²⁶

At an international conservation level, Sariska Tiger Reserve and surrounding forests are considered a Tiger Conservation Unit of Priority 3, indicating that with appropriate management the area can sustain

a reasonable population of tigers.²⁷

The Aravalli hill range, which falls within the Indian state of Haryana and the drought-prone state of Rajasthan, forms the northern boundary of Jamwa Ramgarh WS. In 1992, the India's Ministry of Environment and Forests declared the area to be of significant importance for its watershed forest and issued a notification, which "prohibits the carrying on of the following process and operations" inter alia:²⁸

- "All new mining operations including renewals of mining leases.
- Existing mining leases in sanctuaries / National Park and areas covered under Project Tiger and /or
- Mining is being done without permission of the competent authority."

Despite this and in flagrant violation of national legislation and a series of Supreme Court rulings, at least 32 sq kms of Jamwa Ramgarh WS has been laid to waste by commercial soapstone and marble mining operations.²⁹

In 2002 and 2003 EIA visited the area to document the scale of the destruction and to talk with villagers and Forest Department staff. As a wildlife sanctuary, Jamwa Ramgarh is less fortunate than other protected areas and has been provided with little infrastructure and personnel.

There also appears to be a great deal of confusion within the State Government regarding the actual boundary areas of Jamwa Ramgarh WS. The new Minister of Forests, Bina Kak, told EIA that work is currently in progress to properly demarcate the boundary of Jamwa Ramgarh WS³⁰. A well-placed source told EIA that they believe that in the past the marble mining companies have ignored and even physically removed boundary points.

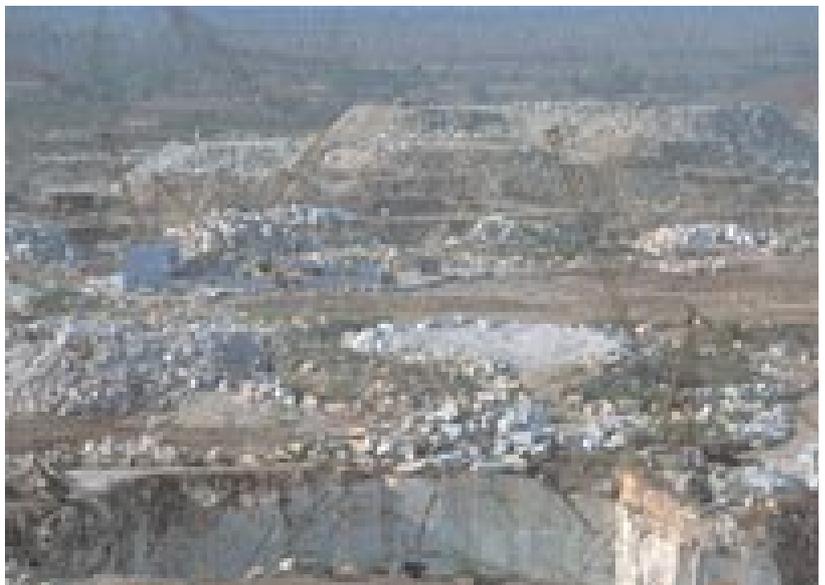
In order to assess the status of the marble mines still operating at Jamwa Ramgarh WS, EIA used the boundary points as stated in the gazetted notification³¹ of the sanctuary and the District Collectors report³², and plotted them on the most up to date Survey of India map of the area³³

Using the above criteria, EIA has indicated the relative position of the soapstone and marble mines currently operating on a commercial scale inside and on the boundary of the sanctuary. Also indicated on the map are abandoned marble mines that were closed down in 2001. The only reason these mines were closed was due

to their presence being brought to the attention of a handful of committed Ministry of Environment and Forests officials in the Central Government, who were then able to depend on one brave State Forest Officer to implement their orders.³⁴



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Above pics: The view from the top of a hill in Jamwa Ramgarh Wildlife Sanctuary. On one side lies good forest land. On the other side area that was once forest is now littered with mines.

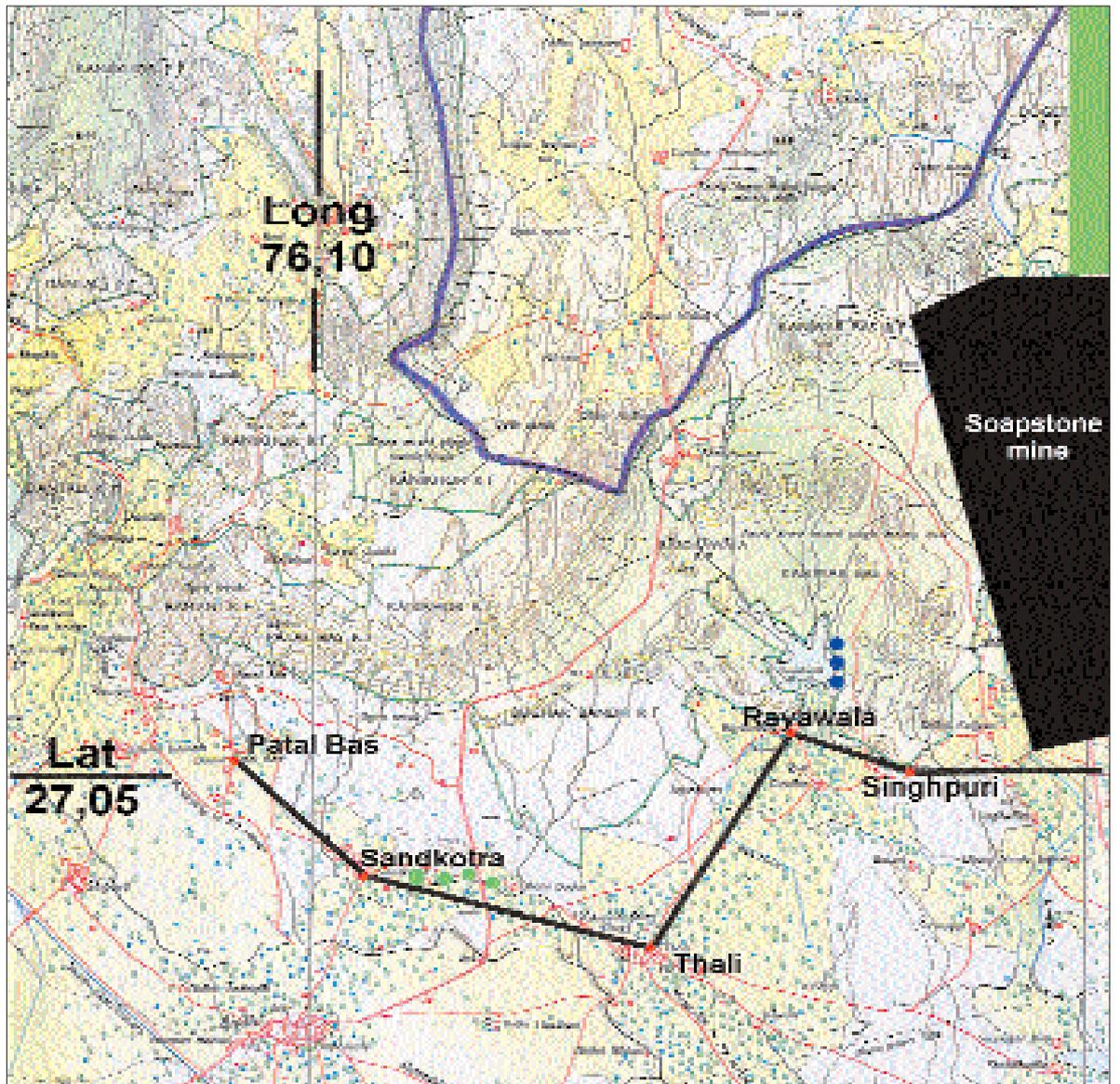
Jamwa Ramgarh Wildlife Sanctuary

Right: EIA taking GPS positions in Jamwa Ramgarh Wildlife Sanctuary.



©Debbie Banks/EIA

Map generated by EIA using Survey of India map, District Collectors Report 1998, gazetted notification of Jamwa Ramgarh WS and GPS points showing some of the working and abandoned mines inside and on the border with Jamwa Ramgarh WS.



Map not to scale. Borders not authenticated.

Indian Laws Clearly Prohibit Mining Within Protected Areas

There are a number of national laws intended to secure a future for India's natural heritage, including:

- The Indian Forest Act (IFA) of 1927³⁵, which set aside forests for different purposes and gave them an administrative designation indicating their purpose. Today, many forest areas that were declared "reserve forest" under the IFA have received additional protection through later being declared as sanctuary or national park under the Wildlife Protection Act of 1972 in recognition of their value as critical habitat for wildlife.
- The Forest (Conservation) Act (FCA) of 1980³⁶, applies to any "forest land" irrespective of whether it has been declared as reserved forest or not under the IFA or State Forest Acts. Section 2 (ii) of this law prohibits the conduct of non-forest activities in "forest land", which includes mining.
- The FCA also ensures that no state authority can sanction the diversion of forestland for non-forest activities. Mining is not a right and applications for leases must be submitted before the Central Government Ministry of Environment and Forests (MOEF) Forest Advisory Committee, complete with a comment from the Chief Wildlife Warden of the State.
- The Environment (Protection) Act (EPA) of 1986³⁷, provides the Central Government with the power to restrict the area in which industries operate, particularly if they are in proximity to a protected area. The MOEF has established a set of guidelines for the siting of industry, stating that it must be no less than 25km away from the boundaries of ecologically sensitive areas such as national parks and wildlife sanctuaries.³⁸
- The Indian Board for Wildlife, a national expert committee chaired by the Indian Prime Minister, passed a resolution in January 2002 declaring that lands falling within 10 km. of the boundaries of National Parks and Sanctuaries should be notified as eco-fragile zones under section 3(v) of the EPA and Rule 5 Sub-rule 5(viii) & (x) of the Environment (Protection) Rules.³⁹
- The Wildlife Protection Act (WPA) of 1972⁴⁰ comes into force when an area receives additional special status as a result of its importance for wildlife. The area may be made up of a mixture of reserve forest, or other designated forest, or indeed revenue land.
- Sections 29 and 35 of the WPA, in relation to areas declared as wildlife sanctuaries and national parks, prohibits the granting of permission, by the Chief Wildlife Warden or any other body of the state Government or central Government, for any activity that damages "the habitat of any wild animal by any act whatsoever".

Judicial Precedent

In 1996, a landmark ruling from the Supreme Court reiterated that the Central and State Governments were required to ensure the FCA was fully enforced in relation to non-forest activities on forest land. The court clarified that the definitions of "forest land" will not only include the dictionary definition but also "any area recorded as forest in the government records irrespective of the ownership".⁴¹ Since 1993 the Supreme Court has issued two key rulings specific to the Aravalli hill region in the drought-prone state of Rajasthan, due to well-documented cases of serious drops in the level of the water table and subsequent depletion of the water supply associated with



mining. The first was following a case filed by TBS. More recently in December 2002, the Supreme Court went as far as issuing an interim order banning all mining in the entire region. The final ruling in the case, issued in January 2003, ordered the state Governments of Rajasthan and Haryana to ensure that no new mining operations were opened inside protected areas and that no existing leases inside protected areas could be renewed.⁴²

As a result of the confluence of the above laws and as borne out in precedents set by the Supreme Court, there is no legal means by which forestland falling within the jurisdiction of a protected area can be diverted for mining. Nor can any authority renew mining leases or grant temporary working permits inside wildlife sanctuaries and national parks.





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Top Left: Mountains of waste from Golcha Group soapstone mine.

Top Right: Soapstone and finished talc produced by the Golcha Group.

Mining For Talc

The Golcha Group has three operations engaged in soapstone quarrying in Rajasthan. One of these is operated by Jaipur Mineral Development Syndicate Pvt Ltd. (JMDS) and lies in the heart of Jamwa Ramgarh WS at Dagota village. Known as the Dagota Jharna Soapstone Mine it has the largest deposits of talc estimated at 7.5 million tons.

The mine began operation in 1936 before Jamwa Ramgarh WS was notified. The present area covered by the mining lease is 1000 ha.⁴³ A large area of land has been exploited and fragmented. The operation is partly an opencast pit and partly underground shaft: the underground mine extends for around fifteen kilometres and this is surrounded by an immense open pit.

It is claimed by JMDS that the soapstone that is produced by this mine is some of the best in the world and is processed for use in high-grade cosmetics.⁴⁴



© C. Kingswood

According to Vandana Ahuja, Executive with the Golcha Group, their clientele has included multinationals such as Johnson & Johnson, Levers, Avon, and Revlon.⁴⁵ Ponds and Cussons are also mentioned on the Golcha Group website as having been customers. Large quantities of talc are exported to Africa, Europe, the Gulf States and China.⁴⁶

The previous 20-year lease for mining was issued in January 1982 and expired in January 2002. In spite of the recent Supreme Court rulings and existing national legislation, JMDS has applied for a lease to operate for a further seventy years.

It is not clear to EIA if a new lease for mining has been approved but when EIA visited the mine in April 2002 and again in February 2003 it was clearly still in operation.

EIA obtained a copy of the Golcha Group's application for lease renewal and is shocked by the apparent disregard for the environment. They acknowledge that they are mining in forest land, classified as Reserve Forest. They do not believe they are required to undertake any compensatory afforestation. Despite the fact that they are positioned in the middle of a wildlife sanctuary next door to a world famous tiger reserve, they perversely claim that there



©Debbie Banks/EIA

Left: Entrance to Golcha Group soapstone mine at Dagota. The mine was still operating when EIA visited in April 2002 and January 2003.

are no rare or endangered fauna in the area and that there is no national park or sanctuary near to the mining area.⁴⁷

If the mine at Dagota is in fact operating without a lease then it is clearly acting illegally.

If they are operating with a lease granted by the State Government then the lease has been issued in violation of the laws and guidelines as set out in the FCA, EPA and WPA. It would also be in violation of the 2003 Supreme Court ruling.

In either case the disruption and destruction of the mine area and surroundings continues, adding to the pressures and stresses on the already threatened Jamwa Ramgarh WS. The johad in Dagota village has already dried up. The disruption and disturbances caused by the mine is a serious problem for the tigers and other wildlife living in the area. It has also been noted by tiger expert Valmik Thapar that the lease area has, “blocked vital migratory routes for wildlife”.⁴⁸

Inset: Company name, Andhi Marble Pvt Ltd displayed on mine wall.

Mining For Marble

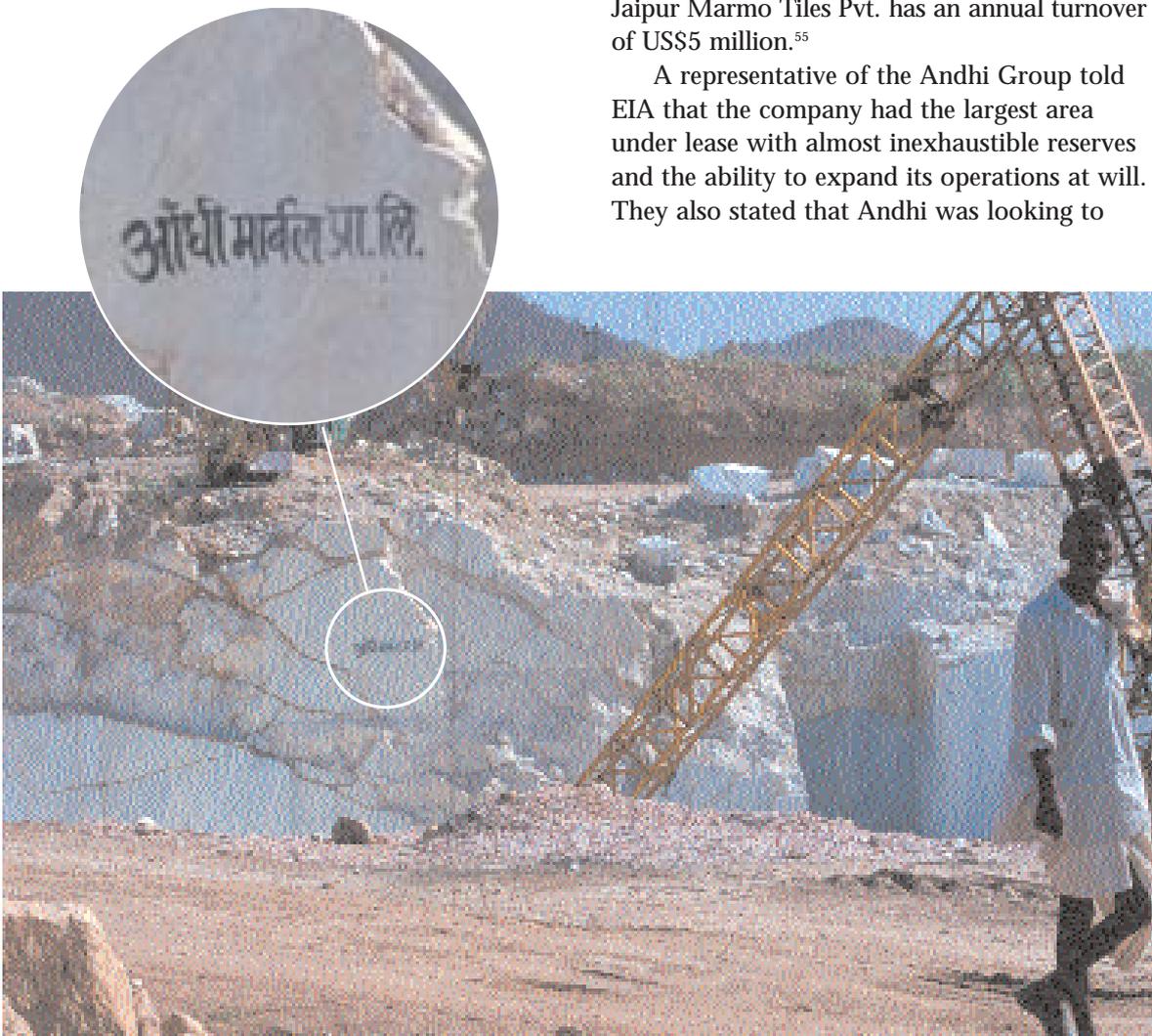
In 1996, Tarun Bharat Sangh (TBS) reported that approximately 40 marble mines were operating within the sanctuary boundaries.⁴⁹ Local people had been fighting to protect the forest since mining interests crept in during the 1980's.⁵⁰

The District Collector of Jaipur, in his 1998 report to the state Government of Rajasthan, observed that a great deal of non-forest activity had occurred since notification of the area first as Reserve Forest and later as Wildlife Sanctuary. He noted that around 200 mines were in operation at the time of his visit⁵¹

The marble type that is found only in Jamwa Ramgarh WS is known locally as Andhi marble and is mainly consumed by the domestic market, although some of the companies mining in Jamwa Ramgarh WS claim that they export the marble. Indian companies currently mining at Sandkotra, the southern boundary of Jamwa Ramgarh WS⁵² include Agarwal Marbles and Industries Ltd (AMIL). AMIL has a turnover of US\$7 million, and 23% of its sales, including Andhi varieties, are exported. Andhi Marbles Pvt. in association with Arpit Marbles Pvt. and Jaipur Marmo Tiles Pvt. has an annual turnover of US\$5 million.⁵⁵

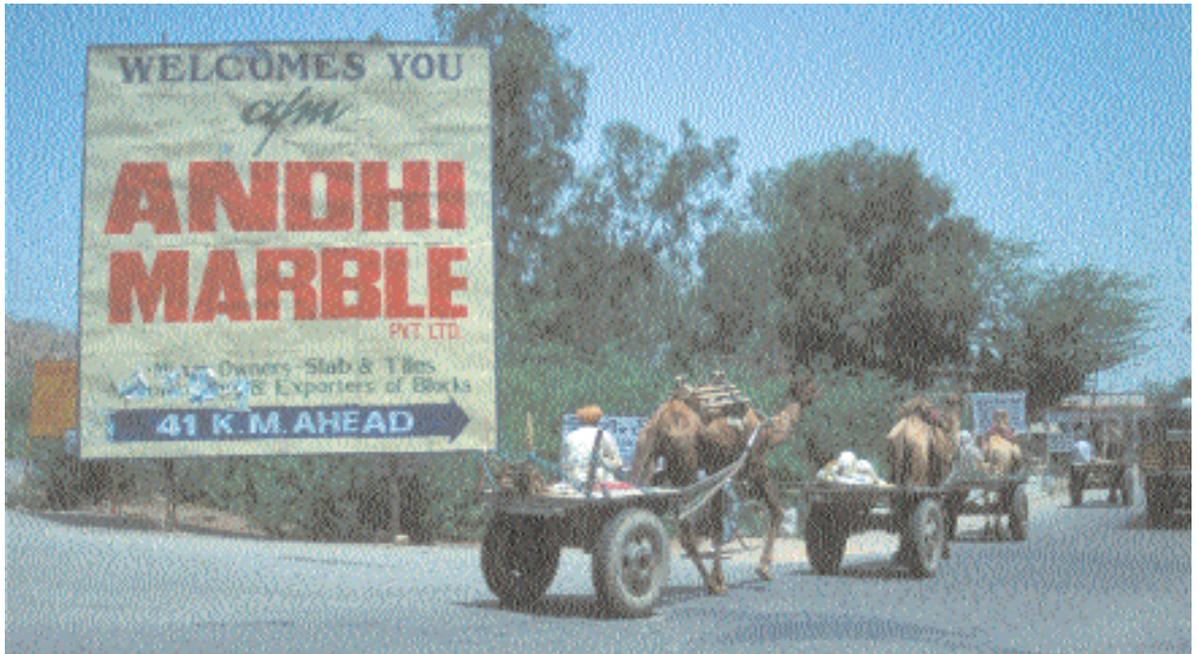
A representative of the Andhi Group told EIA that the company had the largest area under lease with almost inexhaustible reserves and the ability to expand its operations at will. They also stated that Andhi was looking to

“Companies mining and selling Andhi marble indicate there is scope for increased exports”



Left: Andhi Marble Pvt Ltd at Sandkotra – the southern boundary of Jamwa Ramgarh Wildlife Sanctuary.

Right: Advert for Andhi marble mines in Jamwa Ramgarh Wildlife Sanctuary.



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expand its exports and was already exporting to Burma and the Middle East.⁵⁴ The same representative also stated that the Andhi Group are looking to tie up with companies in the US in the near future.

Another major family group in the Andhi marble business are the marble mines and tile companies owned by the Paliwal Group: Paliwal Exclusive Marbles Pvt, Shruti Marmo Pvt, Shurbhi Marmo Pvt and Madhusudan Marbles Pvt are all associated, generating a smaller turnover of US\$300,000. Some of the Paliwal mines are among those that were closed down following alarm at Central Government level.

Another company, Gomti Grani Marmo, claimed they had exported a large quantity of Andhi Pista to Australia for use in a large restaurant project in Sydney's Darling harbour.⁵⁵

All of these companies operate as if they were oblivious to the existence of Jamwa Ramgarh WS. Using the map generated by EIA, these mines appear to be on the southern boundary of

Jamwa Ramgarh WS, yet they operate with impunity due to confusion within the State Government as to where the boundaries fall.

Even if the actual line of the boundary is disputed, the mines undoubtedly fall within the eco-fragile zone declared by the Prime Minister. From an ethical point of view, the mines are destroying precious tiger habitat.

Data obtained from UNIDO⁵⁶ clearly shows that the export prospects of Andhi marble have yet to be fully explored and very few companies have taken this step, hence only a tiny fraction of the Andhi marble mined is set exported. UNIDO recently sponsored Stonemart 2003, a buyer-seller expo to expand the export market of a range of stone types including Andhi marble.

Representatives of companies mining and selling Andhi marble indicate there is scope for increased exports and they do not foresee any problem with supplying large quantities in the future.

Right: UNIDO sponsored India Stonemart 2003.

Far right: Slab of Andhi Pista marble.



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Flagrant Disregard

Continued mining at Jamwa Ramgarh WS not only goes against national and international policy with respect to responsible and sustainable mining as a development tool, but it also shows the lack of commitment by the state Government of Rajasthan to its own policy.

In 1999, the state Government of Rajasthan Department of Mines and Geology produced 'Vision 2020', a document⁵⁷ outlining ways in which the stone industry in Rajasthan could be pushed forward in a sustainable manner. Protection of the environment is a key element of this document with specific measures to ensure that vulnerable eco-systems are not damaged; two of the clauses contained in the document state the following;

- "Mining operations will be eco-friendly by adhering scientific mine planning and systematic exploration of minerals."
- "Reclamation of mineral exhausted pits shall be attended in a phased manner."

The working and abandoned mines around Jamwa Ramgarh WS are neither eco friendly nor are they being reclaimed in a phased manner. It is to be hoped that with the expected growth in the mining sector of Rajasthan more than simple lip service will be paid to the guidelines that have been set out by the state Government of Rajasthan.⁵⁸

The Indian companies involved in the mining also go to the trouble of producing glossy brochures quoting their environmental policy but evidence shows their pledges to be worthless. For example Agarwal Marbles and Industries (AMIL) claim on their website that, "AMIL gets you the natural treasure in most eco-friendly way".⁵⁹

Environmental sensitivity is commonplace within the policy documents and mission statements of many multinational companies that invest in, or buy from, the Indian mining industry. With particular reference to companies reportedly buying from the mines inside Jamwa Ramgarh WS some – Johnson & Johnson, Levers and Avon – have policies that claim to support measures to protect the environment. The Johnson & Johnson credo states that; "We must maintain in good order the property we are privileged to use, protecting the environment and natural resources."⁶⁰

Levers have a very detailed environmental policy outlining their corporate responsibilities.

It states "Our vision is to continue to be an environmentally responsible organisation making continuous improvements in the management of the environmental impact of our operations."⁶¹

Below: Abandoned mines in Jamwa Ramgarh Wildlife Sanctuary have been left with no attempt to rehabilitate the area.



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"We must maintain in good order the property we are privileged to use, protecting the environment and natural resources"

Johnson & Johnson

State Government appears to be colluding with the mine owners

Supreme Court Ruling of 1993

Right: Abandoned mine machinery at the Paliwal mine in Jamwa Ramgarh Wildlife Sanctuary.



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What Went Wrong

The continued mining at Jamwa Ramgarh WS can only be explained by the fact that the mining lobby, both government and industry, appear to be far more powerful than water, forest and wildlife conservation interests. They seem to be able to exert sufficient influence at state and central government level in order to get mining leases granted and renewed irrespective of legislation, policy and the judiciary.

EIA is in possession of government correspondence that proves both the State and Central governments have acted in flagrant violation of the WPA, FCA and EPA in the granting of the leases to mine Andhi marble. A series of letters between 1997 and 2000 demonstrate how scrupulous officers in the Central Government discovered that their predecessors had approved mining applications within protected forest land.⁶²

In an interview with EIA, the former Minister of Forests, Mr Bhagraj Chaudhary claimed that all mining had been stopped in Jamwa Ramgarh WS following the 1996 Supreme Court ruling.⁶³ In fact, a handful of the mines were only closed down in 2001 following alarm at Central Government level, when MoEF officials called for immediate action to be taken by counterparts at State Government level.

It is understood that the owners of a

number of mines which have been closed down are appealing their cases. They appear to be confident of success, as none have removed any machinery from the mines nor has there been any effort to reforest the area and rehabilitate it for wildlife.

The mine owners reportedly have powerful political connections, as they are allegedly the main source of election funding for the state. Politicians from both Congress and the Bharatiya Janata Party own some of the mines whilst other mines belong to members of their families. The case of the mine owners also had support from the former Minister of Forests Bhagraj Chaudhary who stated, "There is no harm in allowing the existing mines to reopen."⁶⁴

Today, Rajasthan's Minister of Forests, Bina Kak, is far more committed to the security of the forests under her charge. She has stated to EIA that; "These forests are a common property of all the people of the State. We should try to protect it in all earnestness. Nobody or a particular section of people can be allowed to exploit the natural resources which belong to everybody for now and generations to come. No compromises on this issue".⁶⁵

Sadly, the events at Jamwa Ramgarh WS are reminiscent of the scenes at Sariska where the Supreme Court acknowledged that the; "State Government appears to be colluding with the mine owners which is evident from the dissent expressed by Officers of the State

Government who were Members of the Committee to the straightforward and logical recommendation of the Chairman, and that prohibition of mining flows from the provisions of the Forest Conservation Act".⁶⁶

The interests of certain members of the State Government is no secret. In the minutes of an inter-Ministerial Committee meeting that was held in May 1999, it is apparent that those with mining interests were clearly distressed that in the past areas have been declared as forest land without "ascertaining their mineral potentiality and assessing other aspects".⁶⁷

In December 2002, the Supreme Court released an interim ruling banning all mining in the Aravalli hills in the states of Rajasthan and Haryana, on the grounds that it was injurious to the environment and also that some of the operations were illegal. The owners of 600 mines were told to cease operations immediately. After many complaints from mine owners and the state governments⁶⁸ the order was overturned by the Supreme Court and some of the mines were permitted to reopen. The operations that were considered to be illegal were not allowed to reopen but confusion still reigns.

It is a good example of the executive power states wield to counter inconvenient Supreme Court decisions. It is also an illustration of the lobbying and political power of the mining industry, which colludes with local authorities to negate Supreme Court orders by delaying orders, not executing them at all, or falsifying compliance reports.

The Situation is Reversible

It is possible for tiger habitat to recover and for the decline in tiger and prey populations to be reversed. Since the closure of the mines in Sariska Tiger Reserve and subsequent implementation of traditional water harvesting programmes, the forest is recovering and so is the wildlife. Similarly, in the dry deciduous forests of Panna Tiger Reserve in Madhya Pradesh, the forest on the fringes is gradually recovering from the effects of illegal sandstone mining and tigers have been sighted in the area. The tiger population in the core of that reserve has recovered as a result of improved water and habitat management and now the young tigers have safe areas on the boundaries to disperse to.

Laws Need to be Enforced and the Mines Closed Down

Closing down the mines at Jamwa Ramgarh WS would not have a significant impact on the local and national economy. As far as Golcha Group is concerned, it is projected from figures given in the group's lease application⁶⁹, that if the company were to mine for a further 70 years they would generate approximately US\$279,000 per year in taxes and royalties for the state.

In terms of marble, India, accounts for over 30% of the world's share in dimensional stone production and claims to be the largest

"There is no harm in allowing the existing mines to reopen."

Bhagraj Chaudhary, former Forest Minister, Rajasthan

Below: Dense forest area in Jamwa Ramgarh Wildlife Sanctuary on the border with Sariska tiger reserve.



"These forests are a common property of all the people of the State. We should try to protect it in all earnestness"

Bina Kak, Forest Minister, Rajasthan

“The consumers should demand of the manufacturers where has your raw material come from?”

Bina Kak, Forest Minister, Rajasthan



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Above: Marble cutting machinery at Arpit marbles, Jaipur.

producer of marble, granite, limestone and slate in the world.⁷⁰ In Rajasthan the marble industry alone is believed to be one of the most important industries providing employment to over a million people.⁷¹ Marble production in India has proliferated in the past decade as a result of improved and more efficient technology: statistics show that between the years 1999 and 2000 India produced over 4 million tonnes of marble, 23% of the total stone production for that year.

Rajasthan provided 95% of that marble, but the type that is specific to Jamwa Ramgarh WS, locally known as Andhi marble from the Andhi – Bhainslana Deposit Belt in Jaipur District accounts for only 287400 tonnes or 6% of Rajasthan’s production. Andhi marble accounts for only 1.37% of the entire stone production for that same year⁷².

Below pics: Andhi marble accounted for only 1.37% of the entire stone production for year 1999-2000.



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Corporate Responsibility

Corporate responsibility is one of the new watchwords often bandied about in discussions on sustainable development. As the Indian stone export market grows there will be a greater choice of locations in India for foreign stone suppliers to source their materials from. With this comes the risk that stone supplied may come from an area that is ecologically fragile or that has been mined in a way that is damaging to the natural environment and/or the local community in the area.

With growing consumer awareness about such matters it is in the interests of companies that source stone products from India to ensure that they come from sustainable sources. The driving force for any industry is consumer demand. It is therefore of great importance that consumers are made aware of where the products that they purchase originate from in order that they can then make informed choices about their purchases. It should be the responsibility of the companies selling products to ensure that they know where their products come from and also to ensure that their customers are provided with accurate information.

The International Council on Mining & Metals has developed a Sustainable Development Charter⁷³ that serves as an international code of conduct for the mining and metals industry. The Charter has 32 management principles covering such things as environmental management and ethical business practises. At present it is a voluntary undertaking and there is no verification or



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public reporting. If this, or a similar code, were created and strictly adhered to and monitored it could provide a useful tool for ensuring that mining companies do not violate national and international laws that have been designed to protect the environment and people from the worst excesses of the mining industry.

Mining v Tourism as a source of revenue for Rajasthan

Supporters of mining often state the fact that the mining industry is a huge revenue earner and is therefore a necessity even if there are downsides to it. However, when compared to the revenue that is already generated and the potential revenue earnings that can accrue from tourism in Rajasthan this argument falls apart.

A third of all tourists to India visit Rajasthan.⁷⁴ The number of both domestic and foreign tourists that visited Rajasthan in 2001 was over 8 million people: of those some six hundred thousand were non-Indian tourists.⁷⁵

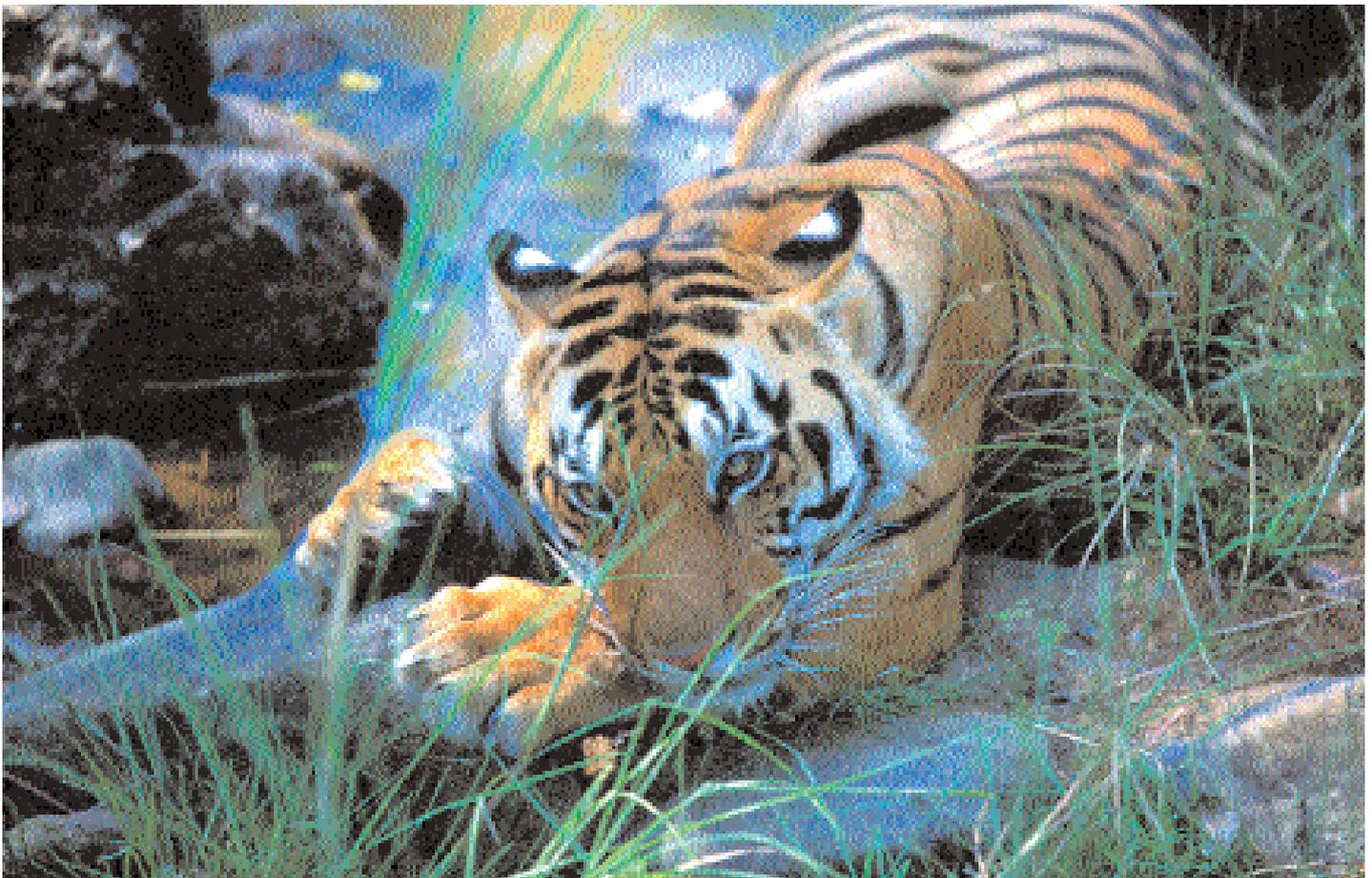
The growing popularity of eco-tourism could have beneficial results for Rajasthan in terms of generating revenue and as a way to ensure the long-term protection of ecologically

vulnerable areas and in providing employment, so long as it is conducted in a responsible manner. However, in order to do this it would first be necessary to close mines operating in or near to protected areas and to rehabilitate the areas that have been broken up for mining as stipulated in the relevant laws.

Below: Revenue from tourism could offset any losses in revenue as a result of mine closure.



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State By State, Same Story

The power of the mining lobby over and above those of wildlife, forest and conservation interests is not only illustrated in Rajasthan. Across India powerful vested interests are driving extractive industries into the heart of India's remaining protected areas. The following examples illustrate how India's non-government organisations are forced to rely on the Supreme Court as the last bastion between industry and the forest, while State Government authorities often sit back and let industry destroy its forests.

Below: Bhadra River is polluted by the Kudremukh Iron Ore Company Ltd.



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Kudremukh Iron Ore Company Ltd (KIOCL) in Kudremukh National Park, Karnataka.

Kudremukh National Park is located in the Western Ghats in the Indian State of Karnataka. The park was created in 1987 and was chosen because of its 'ecological, faunal, floral, geomorphological and zoological significance'.⁷⁶ It is home to many important species including the tiger.

The state owned Kudremukh Iron Ore Company Ltd (KIOCL) has been at the centre of mining activities in the area, having had a 30-year mining lease that expired in 1999. The KIOCL area of 37 sq km was not included in the area that was notified as a National Park. But when EIA visited in 1996 and 1999, there was clear evidence of illegal prospecting by KIOCL outside the lease area and the degree of pollution from the mine run-off had made the water undrinkable for neighbouring communities⁷⁷. In 1999 KIOCL applied for a renewed lease for a period of 20 years.

In response to a petition filed by Wildlife Firs, a landmark judgement was made in 2002 by the Supreme Court of India⁷⁸ under the advice of its Centrally Empowered Committee, a panel of environmental and legal experts, it was decided that the exclusion of the KIOCL mining area from the original notification was not in order. Thus KIOCL's application was rejected. Instead, KIOCL were ordered to wind up operations within a time limit of 5 years, dating from the expiry of their previous lease, 25th July 1999. Conditions were also placed on KIOCL for the winding up process including: "The MoEF should prepare or get a rehabilitation and reclamation and a proper eco-restoration plan prepared for the mined area and project impact area through appropriate agency at the cost of KIOCL".

In this case the Supreme Court of India with the assistance of the CEC has made an important decision based on the need to conserve India's natural heritage rather than bowing to the needs of the mining lobby and their short-sighted drive for cash.

Netravalli Wildlife Sanctuary, Goa

Part of the Western Ghats runs through the tiny Indian State of Goa, where two new Wildlife Sanctuaries were created in 1999, Madei and Netravalli. The new sanctuaries cover a combined area of almost 420 sq kms and are important for conserving the wildlife of this

© EIA

ecologically important area, including the tiger. The notifications for both wildlife sanctuaries specifically state that the areas have been offered protection because of “their enormous significance as hotspots of biodiversity”.⁷⁹

Manganese mines were operating in the north and south of the Netravalli sanctuary when it was notified in 1999. Poor management by the mining companies has led to indiscriminate dumping of overburden in forest-covered valleys and pollution of water bodies.

As a result of pressure by the mining lobby an application was made to the State government of Goa to have 75% of the area denotified. The State Government, in July 2001, took a cabinet decision and agreed to delete 75% of the area. However, this deletion failed to get the agreement of the Indian Board for Wildlife or that of the Supreme Court of India and the denotification has not proceeded. In this case the interests of the environment were put before the interests of the mining lobby. But it shows that the powerful vested interests of the mining lobby have the ability to influence decisions made by State Governments and that their interests are not sustainable development but profits.⁸⁰

Buxa Tiger Reserve, West Bengal

Located in the eastern foothills of the Himalayas, Buxa Tiger Reserve covers an area of some 760 sq kms. The Reserve is home to a wide variety of flora and fauna and currently has a tiger population of approximately thirty. Dolomite mining inside the Reserve was being undertaken by several private companies and one Government owned company, resulting in deforestation and soil erosion.⁸¹

The mining was halted in 1997 but the deposits are currently leased out to North Bengal Dolomite Ltd and Steel Authority of India. The former is a Government of West Bengal undertaking and the latter is a Government of India Enterprise. To date the MoEF has rightly rejected applications for diversification of forestland for dolomite mining. However, in the minutes for a meeting of the Mineral Advisory Council, held on 21st September 2002, the State Government of West Bengal has asked that the Department of Mines take up the matter with MoEF for clearance of 12 hectares of land within Buxa Tiger Reserve for mining purposes. In this case it is clear that



the intentions of the State Government of West Bengal are aimed at exploitation of the mineral wealth of Buxa and that the integrity of the reserve is considered secondary to short term financial gains.⁸²



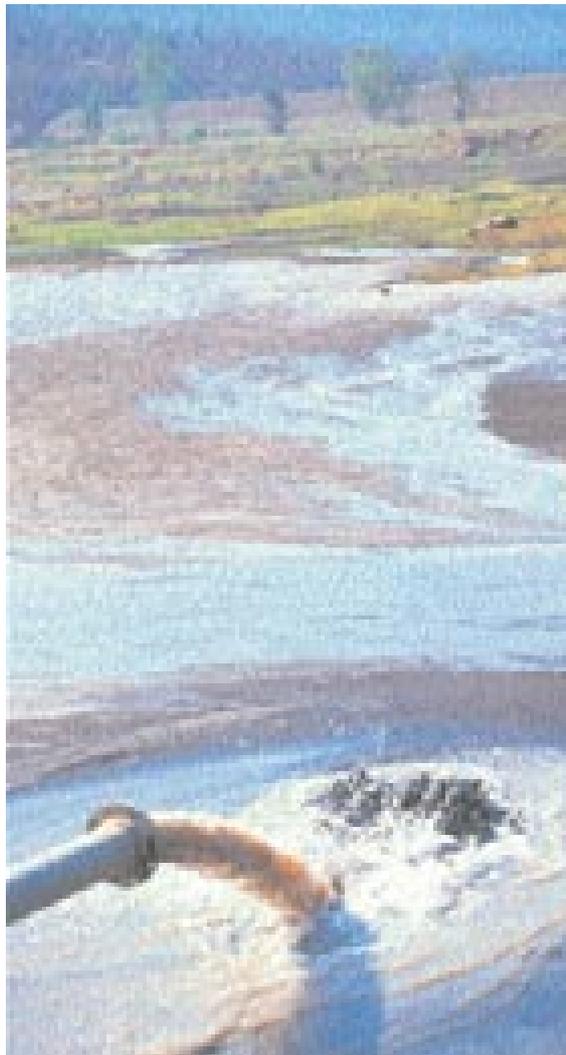
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Above: Diamond mine bordering Panna Tiger Reserve.

Right: Waste pumped from diamond mine flows into a stream.

“Panna’s vulnerable population of 2-3 tigers per 100 sq. kms has grown to a healthy population of 7-8 per 100 sq. kms”

Dr Raghunandan Singh Chundawat, Head of Tiger Research Project at Panna Tiger Reserve



© Joanna Van Gruisen/EIA

Panna Tiger Reserve, Madhya Pradesh, A Change for Good

When EIA visited Panna Tiger Reserve in 1998, it was considered a sub-optimal habitat, surrounded by illegal sandstone mines that effectively turned it into a fragmented island habitat. The neighbouring government diamond mine, owned by the National Mineral Development Corporation (NMDC) was pumping run-off from the diamond wash into a stream that in turn flows in to the Tiger Reserve.⁸³

In addition, NMDC was encroaching on forest lands and had dumped huge mountains of waste material in the surrounding area, including Gangau Wildlife Sanctuary.

In effect, the tiger population of Panna was isolated. Due to the habitat inside the reserve being of a sub-optimal nature, the tigers of Panna were forced to cover much larger areas as a range, compared to tigers in dense tropical forest areas or floodplains. Thus Panna’s tiger population was restricted by poor water availability inside, and lack of access to surrounding forests on the boundaries due to the mining.

Fortunately, due to a combination of scientific research and sound management practices, the habitat was improved and the tiger population recovered inside the Reserve. Public outcry, at a national and international level, over the illegal sandstone mines and the diamond mine pollution contributed to the closure of the illegal mines and initial efforts by the diamond mine to clean up their operation.

There is still much work to be done by the diamond mine, but in the meantime, Panna’s tigers are even starting to use the areas that were once sandstone mines.

This is an example of how the laws governing India’s protected areas can work when the will to apply and enforce them is present. If the actions were applied to Jamwa Ramgarh WS, the mines closed and forests rehabilitated then the ecology including the tiger population could flourish.

What Does the Future Hold?

Of increasing concern to those involved in water, forest and wildlife conservation, both inside and outside government, is the direction that current industrial and foreign policy is moving.

India's mining industry is set to expand exponentially in the coming years as India opens itself further to foreign direct investment (FDI). As it does so greater pressures will be placed on India's protected areas and forestlands.

Until 1991 all the mining operations undertaken in India were owned and controlled by the government. Under economic liberalisation measures pushed forward by the Government of India (GoI) certain previously reserved sectors were opened for private investment, this included the mining industry. The intention is to bring India's mining sector up to par with the rest of the world. In March 1993 the National Mineral Policy (NMP) was unveiled, and 13 major minerals were opened up for public sector exploitation and foreign direct investment (FDI), including iron ore, gold and diamonds.⁸⁴

Until 1994 it had only been possible for foreign companies to invest up to 40% equity in mining projects in India. It is now possible for a foreign company to have 100% equity in mining projects provided that they are registered in India under Indian corporate laws.

Since the liberalisation of the rules governing FDI in the mining sector, the number of foreign companies operating in the India has increased significantly. As of June 2002, 70 foreign companies are investing in the Indian mineral sector. These include 13 Australian companies, 9 American, 8 British, 8 South African and 6 from Canada. Other countries that have companies involved in Indian mining projects include the Netherlands, Germany, Mauritius, Singapore, Sweden, Malaysia and Japan. The total equity provided

by FDI as of June 2002 was approximately \$US 820 million.⁸⁵

In order to help facilitate and encourage the growth of the mining sector and to make the sector more attractive to foreign companies looking to invest, there is a very real danger that the laws and regulations relating to the prohibition of mining in protected areas could be relaxed or simply ignored when awarding prospecting or mining leases. In a recent survey conducted by the Fraser Institute⁸⁶ mining companies were asked to give their views on investment opportunities in mineral sectors around the world. When asked if environmental regulations were a strong deterrent to mineral exploration investment only 8% considered India's environmental regulations to be a strong deterrent to exploration investment compared to 93% of respondents who considered the environmental regulations in the United States to be a strong deterrent to investment.

Many of the companies already investing in mineral exploitation in India have operations around the world that have previously been criticised for their operations and the impact on the environment and the rights of workers and communities.

For example Rio Tinto, which holds prospecting licences for diamond, gold and other minerals in India, has been accused by Friends of the Earth, of dumping 40 million tons of toxic waste into the Otomona-Ajkaw river in West Papua, Indonesia. According to FoE, Rio Tinto also have plans to mine titanium dioxide in forests that are home to many rare and unique species in Madagascar.⁸⁷

There is a risk that other companies with dubious track records in the environment will be attracted to invest in India's burgeoning mineral sector if they see the precedents being set by Indian industry. It is therefore essential that the laws and regulations designed to protect India's Tiger Reserves, National Parks, Wildlife Sanctuaries and other ecologically sensitive areas are rigorously upheld and enforced.

Below: Enforcement of national legislation and fulfilment of corporate and government environmental policies will help to secure a future for both people and wildlife.



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Conclusions

- Mining can contribute to India's economic development if conducted in a truly sustainable manner, with strict adherence to national legislation in the interests of wildlife, forest and water conservation.
- Despite policy commitments and legislation, there are numerous examples of India's protected areas being compromised by industrial encroachment, including vital watershed forest areas that form tiger habitat.
- Jamwa Ramgarh Wildlife Sanctuary falls within the nationally important Aravalli watershed forests and as such, on paper, is protected by national legislation as well as Government notifications and Supreme Court rulings. It is vital habitat for tigers and other wildlife, but illustrates the problems faced by India's lower profile protected areas, with extensive illegal mining having occurred inside the boundaries of the sanctuary.
- Talc and marble mining operations have destroyed large parts of Jamwa Ramgarh's forest area with negative knock-on effects, including a drop in the water table. The affect has been devastating for the wildlife and local communities of the area.
- Wildlife, forest and water conservation interests have had to turn to the Supreme Court to address widespread destruction in the Aravalli region. Confusion, negligence and the influence of mining interests has led to state and central Government authorities alternately awarding and then revoking licences, depending on the scruples of the authority in charge.
- If the mines inside Jamwa Ramgarh and those within the 10km eco fragile zone were closed and if Jamwa Ramgarh were to come under the full jurisdiction of Sariska Tiger Reserve, the forest could be managed for the benefit of water and wildlife conservation. The benefits would be massive for tigers and for local communities.
- Closure of the mines would not cripple the local or national economy and alternative employment and revenue could be generated through forest management and responsible eco-tourism initiatives. The true costs of mining can often far outstrip the gains in terms of the long-term socio-economic impact.
- Civil society and consumers are becoming increasingly concerned over the lack of corporate accountability and by the failure of companies to pay more than lip service to the concepts of "sustainable" development.
- International companies investing in, or buying from, mines in India have a role to play in ensuring that mining activities do not destroy the habitat of endangered species, such as the tiger, or compromise the water security of local communities.

Recommendations

- EIA calls upon the State Government of Rajasthan:
To stop the mining inside, and on the very boundaries of, Jamwa Ramgarh Wildlife Sanctuary, in compliance with national legislation, Supreme Court orders and the Indian Board for Wildlife.
Prosecute those responsible for allowing the mining that has taken place following the notification of the Wildlife Sanctuary in 1982
Enforce national legislation that prohibits non-forest activities in forest and protected areas in the interests of water and ecosystem security.
Rehabilitate Jamwa Ramgarh Wildlife Sanctuary as a vital corridor for the tigers of Sariska and as a watershed for local communities, and to develop the management of the area accordingly.
Complete the application to include Jamwa Ramgarh Wildlife Sanctuary under the jurisdiction of Sariska Tiger Reserve and to enhance the potential for responsible eco-tourism in the region
Ascertain and demarcate the boundary of Jamwa Ramgarh Wildlife Sanctuary.
- EIA calls upon the Prime Minister of India to ensure full implementation of the resolutions of the Indian Board for Wildlife, as passed under his chairmanship, and to ensure that India meets its commitments to sustainable development.
- EIA calls upon international consumers of talc and marble to impress upon suppliers the need for products to be acquired from sustainable sources and not from vital tiger habitat or watershed forest.
- EIA calls upon international companies investing in, or buying from, the Indian mining industry to ensure that the raw material is extracted in a sustainable and environmentally responsible manner, and that protected areas, tiger habitat and vital watersheds are not destroyed in the process.
- EIA calls upon international mining companies to draft a binding code of practice related to the strict adherence to the laws and regulations that govern the protection of protected areas and forests in India.
- EIA calls upon any financial institutions and foreign governments providing aid to India's mining industry to ensure that they are not contributing to the destruction of tiger habitat and watershed forest, which negates the effectiveness of their poverty eradication packages.

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