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CONVERTING COMMON LANDS FOR MINING: LESSONS FROM INDIA

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CONVERTING COMMON LANDS FOR MINING: LESSONS FROM INDIA *

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Abstract

It is a well known ecological fact that the best known forests, river and ocean basins, and fertile landscapes are also rich below ground with natural resources such as fossil oils and minerals. Mining of underground natural resources do require giving up the rights and usufruct benefits of surface based natural resources. Added to this is the fact that the history of the world has seen a continual modification and mortification of the landscape of the earth both above and underground for anthropocentric purposes; and most of such land conversions are irreversible.

Referring to Indian sub-continent, Indian sub-soils are rich in onshore and off shore crude oils and gas, coal, iron ore, copper, bauxite etc. The reserves of balance and recoverable iron ore, coal, crude oil and natural gas are of the order of 25 billion tones, 265 billion tones, 725 MMT and 1075 billion cu. Meters, respectively. They are locked under a total forest area of about 3.29 million sq kms, about 8.4 million ha of rivers and streams, and another 2.1 million ha of water bodies, 55.5 million ha of sandy areas and so on.

Of all variety of land use categories, the common lands consisting of forest lands, pasture lands, and current fallow and Cultural waste lands dominate with an area of about 83 million ha. As has been the practice through the development process, these lands have been the first targets for land conversions for extracting minerals and oils. Estimated degraded lands are of the order of 120 Mha.

Since the commons from above and below ground resources are required for any sustainable and quality life, it is only a balanced strategy to their use and extraction, including a search for alternatives, along with good governance and regulatory mechanism are called for.

Key words: mineral extraction, common lands, development, governance and regulatory institutions

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Minerals As Common Property Resources: An Introduction

It is a well known ecological fact that the best known forests, river and ocean basins and fertile landscapes all over the world, are also rich below the ground with natural resources such as fossil oils, metallic and non-metallic minerals (United Nations,1970; World Bank,1977). Added to this is the fact that the history of the world has seen a continual modification of the landscape of the earth, both above and underground, for anthropocentric purposes. Thirdly, it is also well known to all natural scientists that most of such land conversions are irreversible. How to reconcile these three, as the coming 'spaceship Earth', a word borrowed from Kenneth Boulding (1966) is sinking when it comes to natural resource management[2]?

Referring to Indian sub-continent, Indian sub-soils are rich in onshore and off shore crude oils and natural gas, coal, iron ore, copper, bauxite and many such minerals, all of which fall under the category of exhaustible mineral resources. They are locked under a total forest area of about 69.09 million hectares of land, about 8.4 million ha of rivers and streams, and another 2.1 million ha of water bodies, 55.5 million ha of sandy areas and so on (Kadekodi, 2004a, p 46-47; MoEF, 2009). The major mineral rich states in India are Chattisgarh, Jharkhand, Madhya Pradesh, Goa, Karnataka , Orissa, and Maharashtra. As can be seen from the map of India showing the locations of forest and mineral resources, the forest cover of 50 major mineral rich districts is about 11.89 million hectares or about 18% of all forest cover in the country (Chandra Bhushan, 2008). For instance Chhattisgarh has the highest forest cover of about 43 per cent. Jharkhand has forests on 30 per cent of its land, while Orissa and Madhya Pradesh have forest cover on 27 and 26 per cent of their lands, respectively. These are also rich lands with coal, iron ore limestone and bauxite minerals.

[2] He argued that 'the closed earth of the future requires economic principles which are somewhat different from those of the open earth of the past', thereby hinting to revisit the concept of welfare, energy system, knowledge system etc.

It is logical therefore, to state that as long as all natural resources like forests, water bodies and common lands are common resources of the 'state' so will be the resources below the ground, be it fossil oils , metallic mineral or non-metallic minerals[3]. ***Mineral resources are not only common resources of all in the current 'nation state', but also in the 'inter-generational state'.***[4]

Extraction of mineral resources has three major implications. First, being an exhaustible resource, with extraction activities we leave less and less of this common resource for the future generation. Second, basically attributed to mining activities, the land conversion and degradation make the top soils and even below the ground just not useable. This is a serious problem of irreversibility, apart from the problems of dealing with the over-burden dumps. Third is a human and social problem. India is also the land of quite high population density (324/sq km in 2001) and large section of the scheduled tribe population lives in the mineral rich areas or forests. Leaving out the tribal population in north eastern region which is quite high, the states next in line with concentration of tribal population are Jharkhand (26%), Chattisgarh (31%), Orissa (22%), Madhya Pradesh (20%) and so on(2001 census). According to the Forest Survey of India, the average forest cover in tribal districts of the country is 37 percent (Chandra Bhushan, 2008). The livelihood dependency of this section of population on forest resources is quite high. Hence there is a serious question on land conversions on account of mining, due to the problems of rehabilitation and adaptation. As per the CSE's report (2008), between 1950 to 1991, of all the developmental projects, mining has displaced the second highest number of people - around 25.5 lakh people. More importantly, not even 25 per cent of these displaced have been resettled. Of all the people displaced by mining, about 52 per cent were tribal.

[3] The draft Mineral Development Bill, 2010, pending approval in the Parliament has reiterated that the central and state governments to be fully responsibility to take all steps to conserve all mineral resources strategically and in national interest.
Only in the case of ground water, presently the water rights below the land owned by the owner, be it private or public rests with the owner.

[4] Crude oil and gas and coal are totally nationalized resources in India, though in recent period some blocks have been leased out to joint venture capital or joint sectors. Out of the 443 crude and natural gas blocks operated now, 396 are in public sector; out of 562 collieries being operated now, 552 are in public sector. Several other major minerals such as iron ore, copper and bauxite are also mainly in public sector.

The pointed question at this stage therefore is about the long run feasibility of land conversion and mineral extraction in the country. As argued by Dasgupta and Heal (1979), Dasgupta (1982), Dasgupta (2005), and Pindyck (1978), we need to give a very special attention to conversion of such common property resources. Though it is a value judgment over intergeneration, precautionary principles and search for alternative resources for exhaustible and even replaceable resources prompt strict legal bindings and, politically and socially adherable rules of governance by all stakeholders; be they the government, miners, land lease, or forest dwellers.

In the name of development: extraction and land degradation

Directly and indirectly, minerals play a very important role in development. That is not being questioned here. But the pertinent question in the light of the issues raised above, is that the country requires a serious debate on the mining and land use policies taken together.

'What are common lands, how much are they'; these are not debated here. But of all land use categories, the common lands dominate with an area of about 83 million ha (Kadekodi, 2004b). This includes the forest lands, pasture lands, and current fallow and cultural waste lands. As has been the practice through the development process, these lands have been the first targets for land conversions for extracting minerals and oils. It is not just a matter of land conversion, but, it is a matter of depletion of mineral resources as they are exhaustible, and leaving the land un-usable for any alternative use. Already, out of about 306 Mha of land available for any utilization, the country is abused of leaving as much as 64 Mha as wastelands for future generations. According to Ministry of Agriculture, out of 328.6 million ha of geographical area, as much as 104 million hectare of arable area and another 16 Mha of open forests are already degraded (with water and wind erosion, salinity, alkalinity, acidity and other complex problems). Some of these degradations are due to mining activities.

One must accept that extraction of mineral resources requires some change in the landscape, be it from forest land to mining lands, changes in the top soils and creating mountains of over-burden dumps, or draining the water resources making the land use-less for any alternative use. The highest load of axe falls on forest lands. For instance, according to the available statistics, between 1980 to 2009 as much as 100,870 hectares of forest lands have been approved for mine lease[5]. As per the CSE's 6th Citizen's Report (2008), between 1998-2005 alone, the Ministry of Environment and Forest (MoEF) permitted 881 mining projects in forest areas diverting 60,476 ha of forest area. This implies that on an average, 216 mining projects were granted forest clearance annually – as against 19 clearances annually during 1980-97[6]. Such enhanced rate of land clearance needs to be examined against all odds such as irreversibility of land use, impacts on tribal habitation, and intergenerational equity. Keeping this irreversibility issue in mind the Kanchan Chopra Committee (2006) had recommended to charge a ground rent on land, apart from Net Present Value on the land converted to mining use[7].

Mining has implication for growth as well as resource use. The total contribution of the mining sector to Indian GDP is just about 2% annually, much of which comes from fuels. But the impact on human displacement is quite significant. According to the CSE (2008) report for every 1 per cent contribution of the mining sector to the country's gross domestic product (GDP), the activity displaced three to four times more people than all development projects put together. Mining is extremely land and water intensive, both of which are common property resources. For instance, iron-ore mining in India used up 77 million tons of water in 2005-06, enough to meet the daily water needs of more than three million people. Mining of major minerals generated about 1.84 billion tons of waste

[5] As per information provided by the Ministry of Environment and Forests (and as per the submission by Kanchan Chopra Committee, 2006) about 5,73,164 hectares of forest lands have been converted during the period from 01.01.2001 to 19.04.2006 for various purposes other than forest use, including mining.
[6] An estimated total of 1.64 lakh hectares of forest land has so far been diverted for mining in the country(CSE, 2008)
[7] As per the orders of the Supreme Court in 2008, the current rates of NPV per sq km. ranges from Rs. 6.99 to 10.43 lakhs depending upon eco-value and density classes of forests.

in 2006 – most of which has not been disposed of properly. Coal is the main culprit: every ton of coal extracted generates three to four tons of waste. (CSE, 2008).

It is equally important to examine the opportunity cost of land use changes due to mining. When Karl Marx was writing his celebrated volumes *Das Capital*, perhaps he did not bother much about the value of minerals, except to say that ore has value only to the extent labour is involved to bring it out to the surface. What he meant was only the labour cost of mining will account for its value[8]. He ignored the in-situ or intrinsic value of nature altogether. More than 150 years from then, today we talk of value of mineral resources quite differently, as based on exchange value, what markets can bear, demand value and so on. Today, while the labour cost of iron ore production is of the order of Rs. 50 per ton, its export price is around Rs. 4000[9]. This indicates that while labour is exploited any way, in the name of export of minerals this exhaustible mineral is extracted based on 'what the market can bear' concept. If one goes back to Hotelling (1931), for any optimal and efficient rate of extraction, mineral price trends should have followed the social discount rates. But the world of development driven by openness of economies has made mineral extraction lot more attractive than preservation. The recent trend in mineral prices is strikingly high as compared to any index of social discount rate or even the sectoral growth rate[10].

Other than the opportunity value, the burning question is on the rates of mineral extraction and its effect on land use. As back as in 1866 William Stanley Jevons in his classic book called : *The Coal Question, had* raised the very fundamental issue of

[8] "All those things which labour merely separates from immediate connexion with their environment, are subjects of labour spontaneously provided by Nature. Such are the fish which we catch and take from their element, water, timber which we fell in the virgin forest, and ores which we extract from their veins. If on the other hand, the subject of labour has, so to say, been filtered through previous labour, we call it raw material; such is ore already extracted and ready for washing. All raw material is the subject of labour, but not every subject of labour is raw material; it can only become so, after it has undergone some alteration by means of labour', [Karl Marx, p.174]

[9] The average pit-head value of iron ore mineral varies from Rs. 764/ton for low grade to Rs. 3719/ton for high grade lumpy ore during 2010.

[10] The WPI (with 1993-94=100) for all minerals taken together rose from 119 in 2001-02 to 608 in 2009-10, registering about 50% increase annually, where as the growth of the mineral production has been around 5% annually.

checks on the rate of mineral extraction and the intergenerational issues. Remember that it was only the beginning of industrial revolution in Europe, asking for coal for steam engines and electricity generation. Much later, Herald Hotelling (1931) proposed a direct link between the rate of mineral extraction and its pricing, again to warn about over exploitation of minerals.

There are very serious questions about the current rate of mineral extraction and exhaustibility. If we restrict our discussion to only iron ore, which is the largest group among metallic minerals, our current balance of resources (Hematite and Magnetite) is about 25,249 million tons. Against this, the current rate of annual extraction is on the order of 215 million tons by about 316 miners reporting in 2007 (but has crossed over 300 MT by 2010)[11]. At the current rate of extraction, we have, at the most, about 150 years of extraction left before we consume all the iron ore from this country. We would have destroyed all our iron ore reserves from under Indian soils in merely 250 years, though we boast of a civilization which has sustainably used iron for thousands of years. Likewise, at the current rates of extracting crude oil (about 50 MT per year), the balance of life of this precious resource is just about 15 years, or that of natural gas of about 23 years (Source: www. mines.nic.in/imsesector.html).

Under the Mines and Minerals (Development and Regulation Act, 1957, and the Mines Act, 1952), it has always been laid down that during and after mining the environmental and socio-economic impact of this activity has to be kept in mind. Though, in principle, these laws and government policies talk of 'returning the land to nature' after mining, there is, as yet, no good example of a mine area having been restored to nature. Statistics, however good they are, indicate that as of 2007-08, as many as 102 mines have been abandoned till then, of which 53 have been reclaimed with just about 660 hectares of land, leaving the rest of land unattended. At this rate of returning land to the

[11] To contextualize these figures, we need to remember that India started large-scale iron ore mining only in the first decade of 20th century when Jamshetjee Tata started the first steel mill in Jamshedpur in 1907.

nature versus mines being licensed, the country will be left with only degraded and wastelands in abundance.

Matters of Governance: Legality and Illegality

Currently, the legality of mining is determined by the central and state governments in India. The government policy on mine leasing was established in 1957, with the Mineral Concession Rules coming in 1960. These rules have been amended up to January 2000. Now that more than 50 years have passed since these rules were framed, when it comes to governance they have gathered numerous deficiencies, having implications on land use.

Firstly, one finds a strong link between failure to good management strategy and the rate of mineral exploitation in India. The public sector mining companies, which are state monopolies on major minerals such as coal and fuels are running barely in a state survival most of the time; trying to make up for their inefficiencies, not by improving production, technical and managerial efficiencies of existing mines, but by opening new mines or increasing their output rates[12]. This is even worse, as apart from the unjustifiable rates of extraction there is a load of inefficiency transferred to the economy.

Second, while granting mine leases there is no public consultative procedure in place. The current lease procedure for all minerals, other than coal, starts from an “application for reconnaissance permit” stage, going up to licensing and, finally, granting the lease period for mining. But in this decision process the ‘man’ around the mineral is forgotten. There is no dearth of different laws in India to safeguard and preserve such inherited natural resources and provide protection to human and animal habitats. Some of the relevant ones are: The Amended Forest (Conservation) Act of 1988, the Wildlife (Protection) Amendment Act of 2006 and the Biodiversity Act of 2002. The Scheduled

[12] The OMS of Indian coal sector is around 4 T, against around 8-10 T in West Germany, USA or China.

Tribes and Other Traditional Forest Dwellers Rights Act of 2006 and the Wildlife Act strictly make it necessary for the 'state' to have the approval of *Gram Sabha* to lease out the forest lands to Miners. At all these stages, the fundamental link between man and land (including forest and water bodies) are ignored. The very first Principle of Rio Declaration in 1992, which reads as '*Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature*', is totally ignored.

Third, there is lack of a competitive bidding system in mine lease policy. This could remove unscrupulous and inefficient miners from the race. Currently, in iron ore mining as many as 577 leases exist in India, of which 316 have reported mining or mineral prospecting in 2009, leaving too many questions about the remaining 216 mine leases. Against the stated goals of sustainable use of mineral and land resources, as many as 297 closed mines (other than coal, as of 2003 data) are still waiting for follow-up actions to recover and rehabilitate the land to the nature. However, the proposed 2010 Bill provides some changes to bring such a competitive nature of auctions and biddings.

Fourth, something must be said about the royalty rates. If one examines the status of royalty rates, the revenue from all mineral royalty hover around a meager share of around 3-4 % of Total Revenue from all sources (TRS). In the case of iron ores, the total royalty earned in India during 2007-08 was Rs 5,315 Crore which is just about 20% of the total pithead value leaving out recovering Hotelling's rent any way (Hotelling,1931). The iron ores which were exported forming about 30% of the total, should have been made to qualify for higher royalty rates[13]. Several recommendations (GoI, 2006) in the past and also in the proposed 2010 Bill have strongly suggested to link royalty to ad-valorem rates[14]. In other words, the rate of land conversion is not fully compensated in India in terms of Hotelling rent.

[13] For instance, the total revenue loss can be visualized from the fact that a truckload of iron ore is valued around Rs 40,000 and more than 5,000 trucks transport iron ore out of just the Bellary region of Karnataka every day.

[14] Das (2009) estimates that on iron ore alone, if the quantity based royalty income is about Rs 200 crores, the same under ad-valorem would go up to about Rs. 1200 crores.

Fifth is the major on-going problem of illegal mining. This trend began ever since the governments started de-reserving major mining areas reserved for the public sectors, to private parties. According to the union Ministry of Mines, between 2006 and 2009 as many 1,41,819 cases of illegal mining of major and minor minerals have been reported. In the coal sector, as much as 70-80 million tons of coal is estimated to be illegally extracted annually, as against about 450 million tones of officially declared extractions[15]. In Karnataka, this process started way back in 1994 and continued till now. During this period a total area of 11,620 sq kms was transferred to private miners. The loss to the nation is just anybody's guess.

Causes for illegal mining can be traced to globalization process and deficiencies in export and port regulations (Chandrasekhar, 2010). For instance, the average pithead price of iron ore dispatched to the domestic steel sector in India was Rs 1,167/ ton in 2007-08, whereas the price on exported ores averaged around Rs 3,200 / ton, which itself was a 400% rise from the prevailing price in 2001. This shift in the world price structure enticed miners, specially the private ones, to concentrate on increasing mineral extraction by arguing that it was all in the interest of earning foreign exchange for India or for generating employment. About 125 million tons of iron ore are exported on average per year during the last five years, the export in the year 2008-09 being 379 million tones. But, iron ore exports contribute just about 2.58% to our total export earnings and the total employment in the entire metallic and non-metallic mining sector stands at just about 1.30 lakhs, against a total pithead value of Rs 35,062 Crore in 2008-09. This, in itself, tells the sad story of a "rich land but poor people", around the mining areas.

[15] About 40 to 45 thousand cases have been registered on illegal coal mining in India in 2009

Where to Go When the Law Fails

Three recent developments have taken place on this matter of governance. In 2006, a High Level Committee constituted by the Planning Commission on revising National Mineral Policy released its report to the public. It took the position in the sense of 'mineral scarcity' replaced by a sense of 'mineral abundance'. The Committee stressed the need to promote the mining industry for the international market rather than to meet the domestic demand alone (Chandra Bhushan, 2008). Then in 2008, a National Mineral Policy was proclaimed. It took the song of developing mineral industry further. To quote from it: ' *A thrust will be given to exploitation of mineral resources in which the country is well endowed so that the needs of domestic industry are fully met keeping in mind present and future needs, while at the same time exploiting the external markets for such minerals'*(para 7.2)[16]. The Policy document also made it clear that *'conservation of minerals shall be construed not in the restrictive sense of abstinence from consumption or preservation for use in the distant future but as a positive concept leading to augmentation of reserve base through improvement in mining methods'*(Para 7.2)[17]. Thirdly, in September 2010 a draft Mineral Development Bill has been put out for comments. Some of the major features of this Bill are:

- Ensuring minimal adverse impact on quality of life of the local communities,
- Protecting interests of affected persons including host populations,
- Creating new opportunities for socio-economic development including for sustainable livelihoods,
- Reduction in waste generation and related waste management practices,
- Minimizing and mitigating adverse environmental impacts particularly on surface as well as ground water (both in terms of its quality and availability as a resource), air, ambient noise and land,

[16] No wonder, over 70 MT of iron ore is currently being exported from India against a production around 200 MT (IBM).
[17] All the concerns about intergenerational equity is set aside.

- Ensuring minimal ecological disturbance, in terms of bio-diversity, flora, fauna and habitat, and
- Promoting restoration and reclamation activities so as to make optimal use of mined out land for the benefit of the local communities.

While some of these features are welcome, such as on waste reduction, regard for the population, and minimizing adverse impacts and ecological disturbances, clearly, the major proclamations are suggestive of the kinds of exploitative strategies being practiced by public and private sector mines in the country. Secondly, the Bill does not talk about precautionary principles on land conversion during the process of reconnaissance to production, or conditions on 'returning land to the nature after mining' in terms of strict imposition of 'mine closure plans', so as to enable human habitats can return and rehabilitation of the oustees can take place.

On summary from the three official documents, one gets the feeling that even after stressing on preservation and precautionary principles on land conversion, recovering the value of land on Hotelling's principle, and to enable human settlements to return to the land, the amendments to the Mineral Laws are harping on exploitation of minerals in the name of development (CSE, 2008; IIED and WBCSD,2002; Cernea, 2000; McMahon,1998).

Against this background four recommendations in the proposed 2010 Bill are note worthy, as positive on sustainable land and mineral management with human values. First, the Bill proposes setting up of a Royalty Commission, which makes from time to time, recommendations on royalty revisions. Second, royalty rates (as indicated in Schedule Two) are to be on 'ad-valorem' basis, switching from quantity basis. Third, the mining companies are required to allot free shares equal to twenty-six per cent, to the person or persons holding occupation or usufruct or traditional rights of the surface of the land over which the lease has been granted or, an annuity or after tax profit equal to twenty-six per cent to a welfare fund, to be operated by the district authorities and representatives of affected people. Finally, setting up of a National Mineral Fund out of

the dead rent and cess, part of which can be used for detecting and preventing illegal mining and to promote strict ' Mine closure actions'.

If one takes all these Acts and measures seriously, as we should, there still remains a major question of right kind of institution on governance of common land and mining. Currently, outside of the Ministry of Mines and the Planning Commission, there is no governance institution based on social, economic and ecological principles. Therefore, it is time to set up an independent body as a "national regulator" or "authority" under an Act of Parliament which would look comprehensively at the issue of mining legality and not merely through the lenses of the Mining Ministry or Industry[18]. Such a national level Regulatory system or authority for the entire mining sector, answerable not only to the government but to all the stakeholders having environmental and social concerns in its mandate, which can possibly bring some change to the management of the country's common land and mineral wealth. Otherwise, between the wealth of miners and health of mines, the converted lands vanish even from dictionary.

[18]Institutions like National Tiger Conservation Authority) and National Biodiversity Authority already exist and functioning well.

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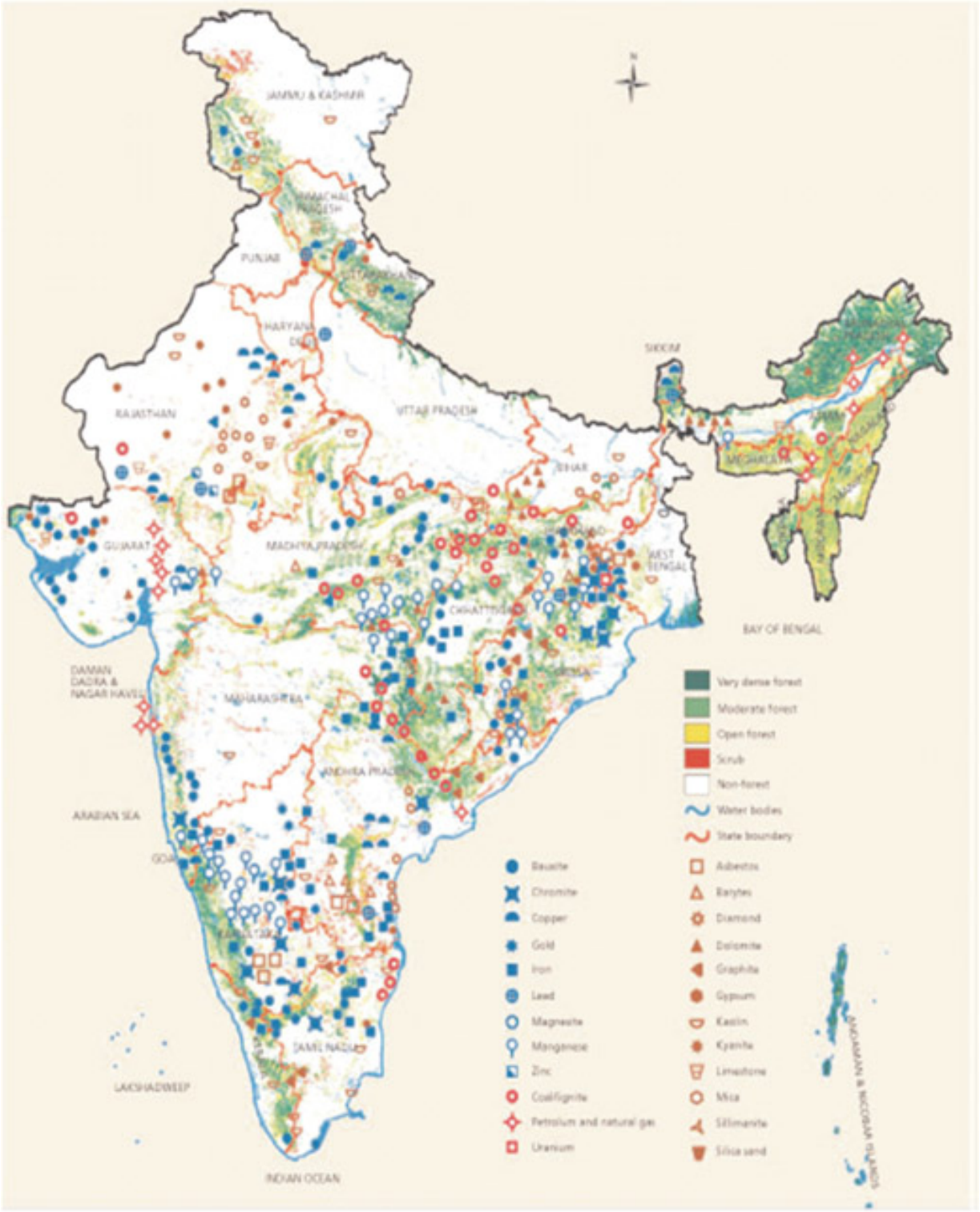
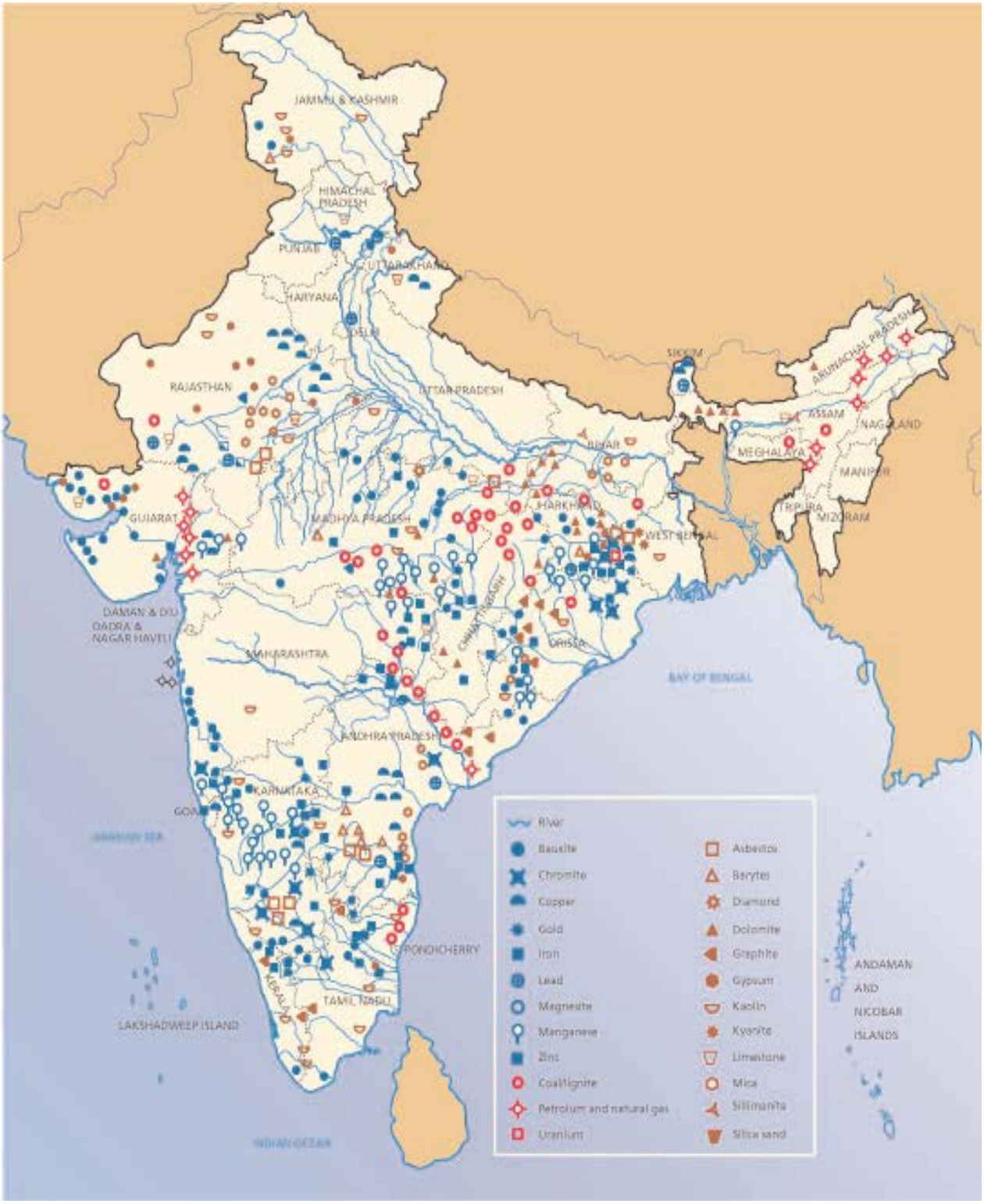
Figure 1: Forest and Mineral resources overlapping geographically



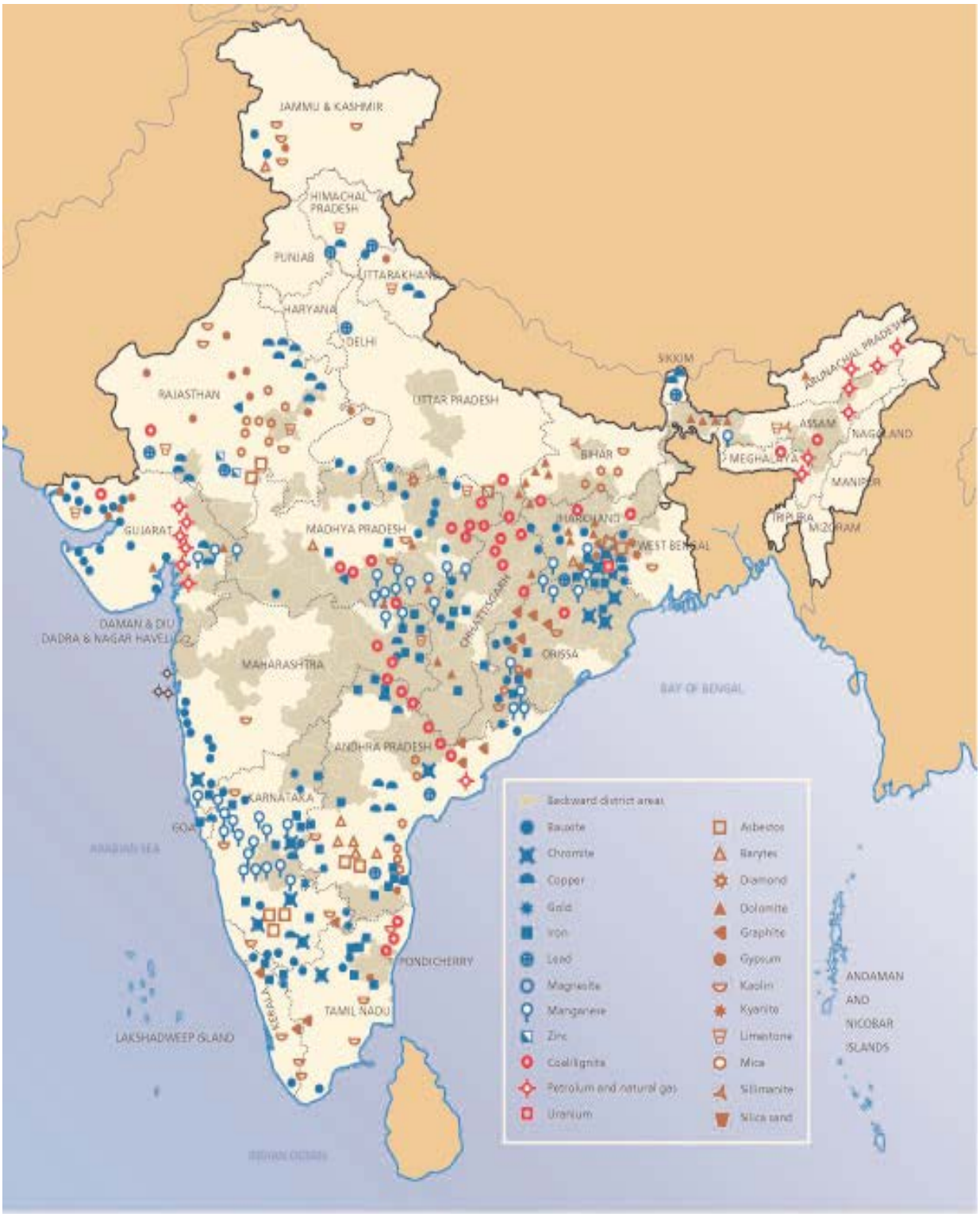
Source as: Chandra Bhushan (2008)

Figure 2: OVERLAPPING MINING AND RIVER BASINS



Source as: Chandra Bhushan (2008)

Figure 3 : OVERLAPPING POVERTY AND NATURAL RESOURCES



Source as: Chandra Bhushan (2008)