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Short Communication

Analysis of Mining Operations in the Forest Demarcated as No Go Zones

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Abstract:

Forest area in our country is classified into Go Zones and No Go Zones based on their crown density. No Go Zones are dense forest areas where mining operations cannot be permitted. However, for extraction of coal lying underneath, permission for diverting these areas for mining was given. There is a high probability that this would have produced a negative impact on biodiversity, indigenous people and environment. As forests are one of the major carbon sink, they could have aided in mitigating the alarming issue of great concern-ABRUPT CLIMATE CHANGE. Following study deals with the impacts of reducing the forest area demarcated as No-Go Zones, the probable solutions that could have been taken for avoiding it and meeting with the energy needs, calculations for carbon stock capacity and value of mitigation. Calculations for carbon stock capacity and value of mitigation has been done for 1, 40, 311 ha forest area on the basis of secondary data. The issue had been tracked until 7/5/2011. The blocks which were later on exempted from No Go Zones and classified as Go-Zones are not mentioned. In this issue a lot more could have been done if, the willingness for doing things would have been more than, the excuse promoted as facts. Future is always projected with respect to the actions performed by us now; however, at times we proceed on dark roads, just to get haunted for our sins and bad karmas later. Some similar things are happening currently, with this issue as base.

Keywords: Mining, Forests, zones, crown density

1.0 Introduction:

The year 2011 had been declared as the International Year of Forests by the United Nations to raise awareness and strengthen the management and sustainable use of forest resources. Moreover, India was named as the Global host for World Environment Day by United Nations Environment Program. GREEN INDIA MISSION, one of the eight under the National Action Plan on Climate Change (NAPCC), projects an ambitious target to increase 10 million hectares of forest cover by 2020 at a cost of Rs.46,000 crore. The 10 year mission aims to reach an annual CO₂ sequestration of 50 to 60 million tones by *2020 (MoEF A).

1.1 No Go and Go Zone Concept:

To facilitate objective, informed and transparent decision on diversion of forest land for coal mining projects, the MoEF on suggestion from the Ministry Of Coal (MoC) had jointly undertaken a study in nine major coal fields to classify coal blocks into following two categories:

Un-fragmented forest landscapes having average crown density >0.50, named as Category – A or NO-

GO area. (MoEF B, 2010). Fragmented forest landscapes having crown density <0.50, named as Category – B or GO area. (MoEF B, 2010).

In simple terms, 'go' areas would be those areas where, prima facie, the statutory Forest Advisory Committee in the Ministry Of Environment and Forest (MoEF) would consider proposals for diversion of forests land for coal mining purposes. 'No-go' areas would be those areas with rich forest cover and biodiversity where applications would not be entertained for forest land diversion. (MoEF C, 8/7/2010)

1.2 Decline Rate:

As per the parameters set up jointly by the MoEF (Ministry Of Environment and Forest) and MoC (Ministry of Coal), out of 582 coal blocks having an area of 6,02,850 ha, 396 (68.04%) coal blocks covering 3,44,800ha (57.19%) were falling in category-B or Go Zones. (MoEF B, 2010)

On request from MoC & PMO (Prime Minister's Office), classification of coal blocks into these categories were re-examined by considering clusters of coal blocks instead of individual coal blocks. As

per the revised parameters, 425 coal blocks covering an area of 3,63,900 ha were classified as category-B or Go Area. In addition to the above, 24 coal blocks covering 16,100 ha, were located in category A (no-go) and hence, as per said criteria were not available for the coal mining. Still, permission for mining had been accorded by MoEF (Ministry Of Environment and Forest).The total 449 coal blocks covering 3, 80,000 ha were thus available for coal mining. (MoEF B, 2010)

During the study, it had also been observed that in case boundary of 28 coal block which at that time were located in Category A, gets redefined through exclusion of their area having good forest cover, an additional 82,539 ha, would be available under Category B. After exclusion of these 28 coal blocks (with redefined boundary), 105 (18.04%) coal blocks covering 1,40,311 ha (23.27%) will only be left in Category A (MoEF B,2010) . However, the MoC wants to end the Go/No Go concept. (There was further decrease in the no. of coal blocks lying under no-go zone later on as the pressure on the environment ministry was immense. In the current paper, the issue had been tracked up to 7/5/2011.). Sadly the area had been reduced at regular intervals than at the same time, which I believe would have been to avoid the probable rage of environmentalists and activists, which would have crossed the stratospheric level if a large area would have got chopped all together at the same time.

The 9 major coal fields across India were demarcated by Ministry of Environment & Forests through the Forest Survey of India (FSI) and the Ministry of Coal through the Central Mine Planning & Design Institute Limited (CMPDI), indicating the

forest cover and location of already identified coal blocks to facilitate transparent and objective granting of forestry clearance to coal blocks based on a “Go – No Go” concept. The 9 coal fields are depicted in (Table 2)

1.3 Issues:

- o Once coal mining is undertaken in these areas, biodiversity of that area will be adversely affected.
- o Accepting the demand of Ministry of Coal to divert prime un-fragmented forest area for coal mining, will lead to similar demands from other Ministries (MoEF B, 2010). It has already set a negative reference, which in future, will propel and boost the confidence of officials demanding approvals for projects, which, may not be in favor of Mother Nature; further emphasizing series of issues because of one action-directly and also on a prolonged basis because of creation of carbon debt which that particular proportion of forest area would have avoided.
- o There is a high probability that these activities could have created a negative impact on water catchment areas and underground aquifers, rivers and streams.
- o Intact and healthy natural forests help in mitigating the current and future consequences of accelerated climate change problem.
- o For the amount of forest area getting reduced, India will be not be able to receive the funds that a developing country will receive for sustainable management and conservation of forest through REDD+ (Reducing emissions from deforestation and forest degradation) policy.

Table 1: Go/No Go Zone Classification (MoEF B,2010)

			'NO-GO" ZONES			'GO' ZONES"		
	Land (ha)	Block	(ha)	Blocks	% of Land	(ha)	Blocks	% of Land
Parameters set up jointly by the MoEF and MoC,	6,02,850	582	3,44,800	396	57.19	2,58,050	186	42.81
Classification after revised parameters	6,02,850	582	1,40,311	105	23.27	4,62,539	477	76.73

Table 2: The nine major coal fields across India demarcated by MoEF through FSI and MoC Central Mine Planning & Design Institute Limited (CMPDI).

Coal field	Place
SINGRAULI COALFIELD	MP,UP,CHATTISGARDH
WARDHA	MAHARASHTRA
IB VALLEY COAL FIELD	ORISSA,CHATTISGARDH
KARNAPURA COAL FIELD	JHARKHAND
WEST BOKARO COAL FIELD	JHARKHAND
TALCHER COAL FIELD	ORISSA
HASDEORAND COAL FIELD	CHATTISGARDH
SOHAGPUR COAL FIELD	MP,CHATTISGARDH
MANDRAIGARDH COAL FIELD	CHATTISGARDH

1.4 Solutions:

- Illegal mining should be checked. Around 70-80 million tonnes of coal is produced in India annually in addition to the official production figure of about 350 million tones.(Dutt Lahiri 2007) Many other minerals along with coal might be illegally extracted through mining by clearing the forest area. Eg: From 2003-04 to 2009-10, as much as 304.91 lakh metric tonnes of iron ore have been exported without valid permits (Anonymous CEC Report 15/4/2011). If focus would have been given to stop illegal coal mining, then there would have been no such need of chopping a large area of forest, affecting environment and indigenous people.
- Loss of power through transmission needs to be regulated. The financial health of State Electricity Boards (SEBs) has become a matter of grave concern considering that their losses have reached an alarming level of Rs.26,000 crores, which is equivalent to about 1.5% of GDP. World Bank estimates this loss would increase to Rs.40,000 crores in the next five years, unless this trend is halted with corrective steps (Anonymous CEA report).
- Former environment minister Jairam Ramesh’ suggestion of focusing on increasing the efforts to increase the potential of mining areas instead of trying to acquire more No Go zones was also noteworthy.
- Proper monitoring and strict punishment to the ones involved in doing power theft should be done. It has been estimated that theft alone causes loss of about Rs.20,000 crores annually (Anonymous CEA report).
- In the areas that are being allocated for mining, pillars should be demarcated using GPS. It

will differentiate between the permitted and non permitted area for mining.

- Well grown-up trees coming in the areas of mining must be transplanted to degraded forest sites. Doing relocation on an extensive basis is a good way of compensating loss.
- As these non-renewable resources are limited, renewable will be the key to sustainable development. Decentralizing it on smaller scale, especially developing green villages by effectively producing energy from various renewable energy sources like community biomass, solar panels and it’s delivery to villagers by solar furnace can prove to be a very effective eco-friendly step and a successful venture. Further, it should be mandatory for Government buildings and certain political leaders who are a part of upper and lower house (Lok-Sabha and Rajya-Sabha respectively) to install solar panels on the roof for generating energy
- Instead of using cars running on conventional fuels, they should use hybrid cars. This will also promote a positive message among the masses. Through them, sport stars, star entertainers and influential saints should be convinced to use and promote such vehicles.
- They should also be asked to promote awareness among the masses about the environmental crisis and global warming and provide simple solutions for environmental conservation. As these classes of people are extremely popular and deal with the emotions of the masses, there is high probability that it can create wonders, *as people change, when there emotions change*. Once a positive impact is made on the followers, it can very well turn out to be an environmental revolution, thereby, helping in conservation of our resources.
- Energy efficiency is also good option. Application of Compact Fluorescent Lamps (CFL),

introduction of smart grids in the passage of time through proper planning can help in power saving and can reduce the usage of coal in power- stations.

2.0 Methodology

No Go Zone Calculations

The area included is the 1,40,311h or 1403.11 sq.km representing the 105 No Go Blocks getting covered under 9 demarcated coal fields. The result obtained for carbon stocks and value of mitigation of forest area, demarcated as the No Go Zones are done on the basis of the data available through available report and research paper. On field study has not been carried out.

2.1 Calculation for Finding Stock Of Carbon stored in 1,40,311 H (1403.11 Sq.Km As 1h=0.01 Sq Km) Of No Go Zone.

328.73mha=32, 87, 300 sq km -Total Geographical land of India (MoEF D, 2009).

20.6% is forest cover (MoEF E, 10/8/2009).

Now 20.6% of 32,87,300 =6, 77,183 sq.km **(A)**

Component-wise Carbon in India's Forests in 2005 is 6,621.55 mt (Kishwan J.et al, 2005).

So, 6,77,183 sq.km (=20.6% forest area) has 6,621.55mt Carbon stock **(B)**

Now, No Go Zone area of 1403.11sq.km for 105 No Go Blocks (MoEF B, 2010).**(C)**

From **(A),(B),(C)**

Carbon stock present in 1403.11 sq.km of No. Go Zone is = total sq.km area of No Go Zone*total carbon stock/total forest area of country

= $1403.11 * 6621.55 / 6,77,183 = 13.71$ mt carbon stock 4720

Now, 20.6% is forest cover (MoEF E, 10/8/2009).

Now 20.6% of 32, 87,300=6, 77,183 sq.km **(E)**

Now 20.6%=6, 77,183sq km forest of our country contains 24,000 mt of CO2 (MoEF E, 10/8/2009) **(F)**

Now, No Go Zone area of 1403.11sq.km for 105 No Go Blocks (MoEF B, 2010).**(G)**

From **(E),(F),(G)**

Amount of CO2 present in 1403.11 sq.km=total sq.km area of No Go zone*total carbon dioxide present in our forest /total forest area of country

= $1403.11 * 24000 / 6,77,183 = 49.72$ mt CO2 **(H)**

Now for value of mitigation, a conservative value of US\$ 5 per tonne of CO2 locked in our forests has been put according to which, this huge sink of about 24,000 mt of CO2 is worth US\$ 120b, or Rs 6, 00,000 crores (MoEF E, 10/8/2009).**(I)**

From **(H) and (I)**

The, value of mitigation for 1403.11 sq.km area of No Go Zone

= 49.72mt*5

=**248.6 million US \$=12,430 Crore Rs.** (Considering 1\$=50 Rs)

3.0 Result:

Estimation of the Carbon stock, amount of CO2 present and the value of mitigation of 1403.11 sq.km of No Go Zone done by the author are estimated and are presented below in **Table 4**

NO GO ZONES (1403.11 sq.km)					
Sq.km	Blocks	%	Carbon Stock mt	Amount of CO2 present mt	Value of Mitigation m US\$
1403.11	105	23.27	13.71	49.72	248.6

-Estimates made by author

4.0 Conclusions:

The result demonstrate, that the value of mitigation of the forest area comes out to be very high, which could have been used for investing in renewable energy, improving energy efficiency, buying and developing advance technologies for improving the efficiency of mining or buying overseas mines. It would have also served by mitigating the issue of global warming which is leading to abrupt climate change. The ecological value of this dense forest is also great. It supports many tribals, their livelihood and wildlife. Effective solutions for curbing the problem of Illegal Coal mining, loss of power through transmission and Power theft would have reaped and can reap in future, better results, saving the forest and reducing the magnitude of the problem of power shortage. The implication of REDD+ policy **(Reducing emissions from deforestation and forest degradation)** will now prove to be a great boon. It includes incentives for positive elements of conservation, sustainable management of forests and enhancement of forest carbon stocks.

REDD+ conceptualizes flow of positive incentives for demonstrated reduction in deforestation or for enhancing quality and expanse of forest cover. REDD+ approach incorporates important benefits of livelihoods improvement, biodiversity conservation and food security services (MoEF F). Once the forest area will start fetching economic benefits which it does currently also; the degree of feeling of willingness to keep the forest area intact will increase, as the amount obtained through REDD+ can be used for varied sustainable development projects further.

Further, in Green India Mission, there is a target set that, 2.0 m ha of moderately dense forests show increased cover and density (MoEF J). According to MoEF cabinet note, the amount of forest area diverted for mining activities might have been adequate enough for meeting with our current energy demands. As the loss of forest area can lead to soil erosion and can increase the probability and intensity of carnage due to floods in case of increased precipitation in that area; it would have been admirable if, the calculation of probable economic loss and loss of life would have been done, in order make a critical decision about the diversion of forest area for mining. The magnitude of destruction of any such negative impact may get reduced in case of standing forest. And if they would have taken this step after doing any such calculations, than, it has fixed *a dart in my heart*.

To a lesser or greater extent, we can accuse multiple areas viz population of our country, multiple political parties whose linked interest affects the decision of any ruling party, lack of effective environmental education at undergraduate level, weaker emphasis on the necessity to preserve environment, weak administration, lack of willingness for change, etc as culprits too because, everything is linked. As mankind has emphasized on-the need for preserving the environment to avoid the crystal clear environmental crisis and, the solutions to combat and withheld the adverse climatic conditions and it's counter-effects in the later part of 20th century (after knowing the reality of Ozone hole in Antarctica), our priorities and henceforth, our decisions, will change, and change for better. Ending on a funny note-A kid asked his mother-What's Global Warming Mama? Mother replied, "Son, it's the result of keeping Moral Science an optional subject in your school".

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