

**Sub: Proposal for diversion of 570.10 ha forest land of mining lease area and 95.13 of forest land outside mining lease area for Bailadiala iron ore Deposit no. 4, Bacheli South Bastar, Distt. Dantewada, Chhattisgarh (Total Area is 665.230 ha).**

The State Government of Chhattisgarh vide their letter No. F-5-14/2016/10-2 dated 08.06.2016 was submitted a proposal for diversion of 570.10 ha forest land of mining lease area and 95.13 of forest land outside mining lease area for Bailadiala iron ore Deposit no. 4, Bacheli South Bastar, Distt. Dantewada, Chhattisgarh (Total Area is 665.230 ha) for seeking prior approval of the Central Govt. under section 2 of Forest (Conservation) Act, 1980.

2. The above said proposal was placed before Forest Advisory Committee (FAC) in its meeting held on **24.08.2016**. After thorough deliberation in the said FAC meeting, the FAC inter-alia recommended that:
  - (i) A Committee under the chairmanship of ADG (FC) and RO Nagpur as member will visit the site and submit its comments whether opening of new areas is necessary or reserve base already available in mining leases which have been already approved by the Central Government in the name of user agency will meet the demand of iron ore.
  - (ii) State Government shall submit complete compliance of FRA certificate as per the latest guidelines issued by the ministry
  - (iii) Land suitability certificate for CA land duly signed by DFO shall be submitted.
3. Accordingly, the State Govt. was requested vide this Ministry's letter dated 21.09.2016 to provide the information as mentioned at para 2 (ii) and 2(iii) above to this Ministry for further necessary action. **The reply as sought from Govt. of Chhattisgarh is still awaited.**
4. As per recommendation of FAC in its meeting held on 24.08.2016, the Ministry was also constituted a Committee under the chairmanship of ADGF (FC) comprising Addl. Pr. Chief Conservator of Forest (Central), Regional Office, Nagpur as a member vide this Ministry's letter dated 21.09.2016 to visit the site and submit its comments whether opening of new areas is necessary or reserve base already available in mining leases which have been already approved by the Central Government in the name of user agency will meet the demand of iron ore.
5. The committee as constituted by the Ministry has submitted their report on the inspection of new proposed mining leases of the NMDC in Dantewada Distt. in Chhattisgarh. **The inspection report of the committee is as under:**

The Forest Conservation Division of the Ministry of Environment, Forest and Climate Change, New Delhi vide its letter no. 8-12/2016-FC dated 21.09.2016 constituted a Committee under the Chairmanship of the Addl. Director General of Forests (FC) to inspect the new proposed mining lease of M/s National Mineral Development Corporation (NMDC) and to submit its comments whether opening of new areas is necessary or reserve base already available in the mining leases which have already been approved by the Central Government in favour of the User Agency will meet the demand of iron ore. The aforementioned Committee visited the area on 9.12.2016 to examine the issues entrusted to the Committee. Following nominated officers inspected the site and deliberated upon the issues in details:

- i. Dr. Anil Kumar, Addl. Director General of Forests (FC), MoEF&CC, New Delhi.
- ii. Sh. Kanwarjit Singh, Addl. PCCF (Central), Regional Office (WCZ), Nagpur.

Sh. Mudit Kumar, Addl. PCCF & Nodal Officer (FCA), Government of Chhattisgarh, Ms. Reena Baba Saheb Kangale, Managing Director, CMDC and Director, Mining, Government of Chhattisgarh and Sh. A. K. Shulka, ED, Bacheli Project, NMDC also accompanied the Committee during its site visit.

**Deliberations and observations of the Committee during the visit are given as under:**

1. The Committee observed that M/s National Mineral Development Company (NMDC) has two major mining projects in Bailadila Mountains Range in Dantewada District namely Kirandool Mining Project and Bacheli Mining Project. Kirandool Mining project has three major mining leases viz. Deposit 11 A & C, Deposit 14NMZ and Deposit 14 ML having total mining lease area of 641.415 ha (106.412 ha + 535.003 ha), 506.742 ha and 322.368 ha, respectively. Similarly, Bacheli Mining Project of the M/s NMDC has 4 mining leases namely Deposit-5, Deosit-10, Deposit-10 Float ore and Deposit –11A involving an area of 672.250, 326.340, 308.130 ha and 233.509 ha, respectively.
2. In addition to above, the 2 new mining leases viz. Deposit – 13 (315.433 ha) and Deposit – 4 (665.230 ha) in favour of the M/s NMDC have also been proposed under Kirandul and Bacheli Mining projects respectively. Out of the 2 new leases Deposit-13 has already been accorded Stage-I approval on 12.11.2014 by the Central Government under the Forest (Conservation) Act, 1980 while proposal for Deposit-4 is under consideration in the Central Government for grant of approval under the Forest (Conservation) Act, 1980. Another mining lease pertaining to Deposit-3 in Bacheli involving an area of 3308.34 ha has also been proposed to be undertaken by the M/s NMDC for prospecting.
3. Given the above scenario, currently, the NMDC has 9 mining leases granted in their favour and out of total 9 mining leases, 6 mining leases 3 in Kirandul and 3 in Bacheli are currently operational. All mining leases of the NMDC fall in the forest area, except 11 A mining lease where only 42.09 ha land is Government Revenue land. The total lease area under the possession of the M/s NMDC, including the approved leases, lease under process for approval and proposed leases is approximately 8,317.295 ha. Details of the mining lease of M/s NMDC and area involved is given as **Annexure-I (F/A)**.
4. The Addl. PCCF and Nodal Officer (FCA), Government of Chhattisgarh informed the Committee that Bailadila Iron Ore Project, Deposit-4 is one of the deposits located in the Western ridge (North of Deposit-5) of Bailadila Range in the southern part of Bastar District Dantewada. Deposit-4 is crucial for the operation of Nagarnar Integrated Steel Plant of M/s NMDC as the mining lease has been proposed for captive use of Iron ore for Integrated Steel Plant of NMDC and other sponge iron ore plants in the State of Chhattisgarh. The mining lease has been proposed to be operated by the NCL (NMDC-CMDL Limited) a joint venture company of the NMDC and CMDL with equity ratio of 51:49. It has been conceptualized that Deposit-4 shall be developed as standalone mining project which will have all mineral processing facilities i.e. crushing plant, downhill conveyor, screening plant and loading plant exclusively for Deposit-4. The mineral processing facilities have been proposed in the virgin forest area of 95.13 ha outside the mining lease.

#### **Status of Mineral Reserve currently available with the NMDC**

1. The Committee was informed that total estimated iron ore reserves in the State of Chhattisgarh are approximately 2558 MT and at present major production is being carried by the M/s SAIL for their captive use and NMDC. Out of the total aforementioned reserve, the NMDC in its various mining leases has total 1,671.09 MT of iron ore reserves in Dantewada District, which account for nearly 65.33% of the total reserves available in the State. Moreover, the out of the total reserve, nearly 1,238.81 MT is currently available in the 6 operational mining leases (excluding Deposit – 4 and 13) of the NMDC which account for 48.43% of the total reserve base available in the State. Mine wise details of mineral reserves available with the NMDC are given at **Annexure-II (F/B)**.
2. The Committee was further informed that currently maximum annual production levels from all the 6 mining leases of the NMDC stands at a level of approximately 25 MT and the NMDC has been entrusted with the objective to increase its production level from existing level of 23 MT to 100 MT. The representative from the User Agency informed the Committee that given the availability of auxiliary infrastructure and mining lease area, the target of increased production cannot be achieved in near future, however, the NMDC has plan to increase the production level upto 45 MT in coming years in accordance with the production level approved by the MoEF&CC, New Delhi in environment clearance accorded to the mining lease. The Committee further observed that as per the approved production levels in the environment clearances, the production level in the Kirandul can be increased upto a maximum level of 29 MT while in the Bacheli mining project the production can be increased upto 17 MT. Thereby combined production from both the mining projects cannot increase beyond 46 MT per annum. The Committee also observed that given the existing road and rail infrastructure and auxiliary facilities available with the NMDC, it would be difficult for the company to realize the set production level of even 46 MTPA.

3. The Committee also observed that given the existing availability of 1,238.81 MT of reserve and annual production capacity of approximately 25 MTPA, the NMDC can continue mining for a period of 50 years while at an increased production level of 46 MT, the mining operations can be sustained for a period of 27 years. The Committee, after examination of the exploratory data for the past two decades also observed that estimated availability of the reserve base of the NMDC from its existing mining leases has been increasing continuously because of deepened exploratory drilling. Currently, the NMDC has reserves (excluding the reserves of Deposit-13 and Deposit-4) almost 2 times of the Reserves estimated initially at the onset of mining operations.
4. The MD, CMDC & Director Mining, Government of Chhattisgarh informed the Committee that Deposit-13 and Deposit-4 mines have been proposed to be developed through a Joint Venture Company (NCL) with a view to meet the demand of iron ore for the iron ore based industries in the State. Opening of these two mining lease is crucial for ensuring the sustained supply to iron ore based industry in the State. The NMDC has already commitments for supply of iron ore from the existing leases to various clients and ore from these operational leases cannot be used to meet the demand of Integrated Steel Plant of NMDC coming up in Jagdalpur and other iron ore based industries in the State.
5. The Committee also observed that the NMDC had continued mining from the level of 1200 meters (MSL) and excavation of ore will be undertaken upto a level of 600 meters. The Committee was informed that so far excavation has reached upto an average level of 900 meters only i.e. during the past almost 36 years only excavation 300 meters of excavation has been done by the NMDC and to reach the 600 meters level another 36 years or more may be required at the present level of production.

#### **Production level of ore vis-a-vis Supporting Capacity of Infrastructure in the Area**

1. The Kirandul and Bacheli Mining projects of the NMDC are connected by a two lane road (without central verge and pave shoulders) and Khandul-Kottavalasa railway line to Dantewada, Jagdalpur and Vizag in Andhra Pradesh. The Committee, during interaction with the Addl. PCCF & Nodal Officer (FCA), Government of Chhattisgarh and the representatives of the User Agency, gathered that currently, major fraction of the mined out ore is transported through rail while only small portion upto 5% of the total production is transported through road. The Committee also observed that given the current production level, the existing means of transport appears to be fully saturated i.e. road and rail infrastructure is being utilized to its maximum supporting capacity. Any further increase in the production level will certainly exerts pressure of existing means of transport and hence to accommodate the increased production existing infrastructure will be required to be strengthened by the User Agency/State Government.
2. The representatives of the User Agency has informed the Committee that proposal for upgradation of the Railway line is being moved for doubling of the existing track. In addition to upgradation and strengthening of the existing railway track, upgradation of existing auxillary facilities will also be undertaken by the User Agency.

#### **Ecological impacts of the mining leases with reference to rare 'Tree Ferns' species**

1. The Committee observed that area proposed for diversion has dry deciduous and moist deciduous forests showcasing biodiversity of various forms. The Deposit-4 area proposed for mining i.e. 85 ha has sparse bushy vegetation with scanty tree growth due to hard exposed iron ore surface. The proposal involves approximately 1.9 lakhs project affected trees. The area other than kept for mining has good vegetation with density of as good as 0.8 to 0.9. Removal of such a large number of trees will definitely have adverse impact on the ecosystem. NMDC Ltd has proposed to develop the Deposit-4 as a standalone project involving facilities like screening plant, downhill conveyor, loading plant, etc. and all these structures are surely going to have adverse impact on the flora and fauna.
2. The Committee also observed that "Tree Fern", Cyathea a unique/rare plant species is found in Bailadila hills of Chhattisgarh and is facing the threat of extinction from the area owing to mining activities in the area. Cyatheaceae and Gnetum Species are found in the area proposed for diversion as well as in the surrounding area on the sides of the local perennial Gali Nallah.
3. The Committee was informed that tree fern is found in reserve forests lying between iron ore deposits number 5 and 11 in Bailadila Range and between Deposit 10 & 4 in 76 ha which is excluded from the area proposed for diversion. The tree fern species has been reported to be thriving in the area. The

plants have attained a height upto 7-8 meters which is normally attained in 500-600 years. Earlier, the habitat of the tree ferns was found in most part of the Bailadila hills, however, now it has been confined only to reserve forests (under Bacheli Range) on the hills along Gali Nallah (rivulet). There are about 327 'Tree Ferns' in Bacheli forest range, as per the forest department's latest count. As per the report, the tree ferns species owing to rampant mining operation its habitat has shrunk to area lying between deposit- 5 & Deposit 11 and Deposit-4 & Deposit 10 that too is under severe degradation for want of appropriate protection and conservation measures. Area presently inhabited by the tree ferns constitutes the part of mining lease of the proposed by the NMDC in Deposit -4 through 76 ha of forest land deleted from the proposed diversion under the Forest (Conservation) Act, 1980.

4. The Committee further observed that removal of trees from the area and opening of the area to mining will also have adverse impact on perennial water sources of the area namely Gali nala originating from the forests of Deposit-4 and Malangir Nala originating from the Deposit – 13 (Stage-I approval already accorded). These two water sources meet the drinking water needs of Bacheli and Kirandool, besides offering favourable growth conditions for the Tree Ferns. The rare Tree Fern species, reported to be on verge being vanished completely from the area, is thriving best on the sides of the areas drained by these nala. As the existing topographic features of the area are supporting a microclimate with good edaphic factors, viz. soil moisture, organic content, etc. to support the Tree Ferns habitat, once these areas opened for mining, the perennial water regimes of these local nallah are likely to be affected adversely and so will be the microclimate supporting Tree Ferns. Therefore, conservation of these water sources and tree ferns species needs special protection measures by undertaking a situational review and remedial measures thereof of the area vis-a-vis mining in the area by an institute of repute.

**Recommendations of the Committee:** After thorough examination of the mining leases of the M/s NMDC, the Committee concluded following:

- i. Currently, the NMDC has 9 mining leases granted in their favour and out of total 9 mining leases, 6 mining leases 3 in Kirandul and 3 in Bacheli are currently operational All these mining leases have approved production capacity of 36 MTPA and so far the NMDC could attain a maximum production level of approximately 23 MTPA.
- ii. Past trend of estimated reserves in the existing mining leases of NMDC revealed the substantial increase in the mineral reserve base which is most likely to increase further in future. Currently, the NMDC has reserves (excluding the reserves of Deposit-13 and Deposit-4) almost 2 times of the Reserves estimated initially at the time of commencement of mining operations. These reserves are likely to increase with further deep exploratory drilling. Mineral reserve base (proven + probable) appears to be sufficient to sustain the iron ore requirement in near future.
- iii. The area covered under Deposit-4 has rich forests, except in rock exposed areas, with average density 0.8 or more. Opening of such forest rich area may have adverse impact on the ecological regime of the area.
- iv. The NMDC has its mining leases spread over an area of approximately 8 Sq. Km. in the Bailadila Mountain Range. Given the state of limited natural resources in the area viz. water bodies, unique tree species, wildlife, etc. and also the local infrastructure viz. roads, railway track, there is need to assess the ecologically sustainable production level in the area. So far, there is no such baseline study available for the region to suggest the cap of maximum production which can be harnessed from the area. **Therefore, before opening up new area a study to assess the maximum permissible production level which can be sustained ecologically without hampering the existing natural resources should be conducted in the Bailadila Mountain Range.**
- v. The Committee also observed that with the advancement of mining operation in Deposit-10 and Deposit – 4 (if considered for approval), the microclimate supporting the Tree Fern will likely to be destroyed which may cause the loss of Tree Ferns Species. Therefore, in order to maintain the microclimate of the area enough to support the Tree Fern habitat, catchment area falling in the mining lease should be enriched to ensure development of water resources. However, mining and development of water resources are inversely related and cannot go hand in hand. **Therefore, giving due consideration to the unique 'Tree ferns species found in the area, special conservation, protection and development measures for "tree ferns" species should be implemented in the area after conducting a scientific study in the area and if needed, the area of mining lease may be further reduced to sustain the functions of microclimate.**

- vi. Removal of iron ore from the top of the hill will slowly reduce the height of the hill and the altitude will be reduced from 1200 meters to 600 meters, thereby exposing the habitat of the endangered Tree Fern species and will adversely affect their habitat making it unsuitable for survival. Also the dust and other debris will add to the woes of the Tree Ferns.
- vii. The area is dominated by the pristine forests with average density of 0.8.

In view of the above, the Committee recommended that **NMDC has sufficient iron ore reserve base in its mining leases**. Opening of the new pristine forest area for mining especially Deposit-4 **will have adverse impact on the local ecological regimes** specially water sources and Tree Ferns and therefore opening of the new mining area in Deposit-4 containing pristine forests **does not deserve consideration for diversion under the Forest (Conservation) Act, 1980 and is not recommended for approval**.

The facts related to the above proposal may be placed before FAC in its forthcoming meeting to be held on 28<sup>th</sup> February, 2017 for their examination and appropriate recommendation.

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