

**SCHEME FOR  
SITE SPECIFIC COMPENSATORY  
AFFORESTATION**

**OVER**

**54.238 HA OF NON-FOREST GOVT. LAND  
IDENTIFIED IN VILLAGE DANDAPADAR**

**UNDER THUAMUL RAMPUR TAHASIL**

**IN**

**KALAHANDI DISTRICT**

**AGAINST**

**INFRASTRUCTURE PROJECT AROUND DAITARI IRON ORE  
MINES IN KEONJHAR, ODISHA**

**OF**

**M/s ODISHA MINING CORPORATION LTD.**

**OMC HOUSE, POST BOX-34, BHUBANESWAR-1**

**SCHEME FOR SITE SPECIFIC COMPENSATORY AFFORESTATION OVER 54.238 HA OF NON-FOREST GOVT. LAND IDENTIFIED IN VILLAGE DANDAPADAR UNDER THUAMUL RAMPUR TAHASIL IN KALAHANDI DISTRICT AGAINST INFRASTRUCTURE PROJECT AROUND DAITARI IRON ORE MINING LEASE OF M/s ODISHA MINING CORPORATION LTD.**

**INTRODUCTION:**

Daitari Iron Ore Mines, over an area of 1812.99 ha was held by OMC Ltd under mining lease with effect from 27.01.1966 for a period of 30 years for extraction of Iron Ore. Application for renewal of Mining Lease before expiry of the lease period has been filed over a reduced area of 1018.3085 ha. The total forest area broken prior to 25.10.1980 and approved by MoEF, Government of India under Section 2 of the F C Act 1980 vide letter No.8-164/1997-FC dt 27.01.2005 is 95.60 ha. The mines have the statutory clearances to produce 3.0 million tons of iron ore per annum. OMC has submitted a revised proposal for diversion of balance forest land over 841.9325 ha including 11.8265 ha earmarked for safety zone with a view to enhance the production from 3.0 millions to 6.0 million tons of iron ore per annum. The evacuation of additional iron ore proposed to be produced from the mines required additional infrastructure for which OMC submitted a proposal for diversion of 106.016 ha of forest land which includes part of Daitari ML area and part of Daitari Extension area of OMC. The total non-forest area required against this proposal is 54.238 ha (Forest area proposed: 106.016 - Forest area broken up by OSCFC: 48.96 - Approved Forest area: 2.818). In accordance with the provision of F.C. Act 1980, compensatory afforestation scheme over 54.238 ha of non-forest land has to be covered to compensate the loss of forest and environment in general against the forest land proposed to be utilized for non-forestry activity pertaining to Daitari iron ore mines.

So, the present scheme aim at preparation of site specific compensatory afforestation scheme over 54.238 ha of non-forest land with suitable soil and water conservation measures for regeneration, rehabilitation and restocking of existing forest growth followed by gap plantation with suitable indigenous species to restore the biodiversity. The non-forest land will be rehabilitated through different silvicultural operations and plantations with the active participation and awareness of the local villagers and NGOs through entry point activities and JFM mode.

**SELECTION OF SITE:**

Non-forest Govt. land to the extent of 54.238 ha in a compact patch was not available in the district of Keonjhar in which the mine is located. Therefore, considering the urgency and request made by OMC equivalent non-forest Govt. land for the purpose of raising compensatory afforestation has been identified in the village Dandapadar under Thuamul Rampur Tahasil in Kalahandi District. The details of plot wise land schedule are furnished below. The site is located on survey of India topo sheet No. E 44 F 21 on 1:50000 scale between Latitude: 19°29' 43.895"- 19°30'15.619" N, Longitude: 83°12' 39.140"- 83°13'23.124"E (Plate No. I) and at a distance of 50 Km from Tahasil Headquarters. The proposed area is free from encroachment and encumbrances and suitable for plantation is outlined as below. Moreover, the villagers of Dandapadar and Rupen most of whom are tribal are very much interested in rehabilitation of the degraded forest to reap the

usufructs & to meet their social, cultural and economic needs. Koraput district borders the eastern boundary of the area.

**Land schedule of the area proposed for compensatory afforestation**

Tahasil	Village	Khata No.	Plot No.	Area of the plot (Acr)	Area considered (Acr)	Kissam	Khata No.	Plot No.	Area of the plot (Acr)	Area considered (Acr)	Kissam
THUAMUL RAMPUR	DANDA-PADAR	44 Abada Ajogya Anabadi	157	13.95	11.05	Dangar	44 Abada Ajogya Anabadi	160	27.80	25.80	Dangar
			158	38.68	38.68	Dangar		171	25.65	22.75	Dangar
			159	35.75	35.75	Dangar		<b>Total Area: 141.83 Acr</b> <b>Area Considered: 134.03 Acr or</b> <b>54.238 ha</b>			

An area of 54.238 ha has been found suitable and is covered under the present scheme. The village map showing the above land details authenticated by Revenue and Forest personnel proposed for compensatory afforestation in one patch is enclosed as **Plate No.II**. The copy of the letter by DFO, Kalahandi South Division with joint verification statement signed by Forest and Revenue authorities and the allotment letter by Collector, Kalahandi are enclosed as **Annexure-I**.

**DESCRIPTION OF THE EXISTING VEGETATION:**

The site although categorized as non-forest land kissam in revenue record still comprises forest growth crops like Sal, Mahul, Kusum, Kendu, Bela, Kurei, Gambhari, Bamboo, Asana, Sisoo, Amba and Misc. species in pole condition in a degraded state having canopy density 0.1 to 0.2. The floor of the forest is devoid of under growth due to heavy soil erosion, repeated annual fire and "podu cultivation".

**SOIL & TOPOGRAPHY:**

The topography of the area is mainly hilly. The area is spread all along the slope of the hills. The minimum height of the area is occurring to NE and maximum height occurs at SW. Two isolated flat topped hills are located inside the area. The seasonal streams are parallel to dendritic in nature. The overall slope of the ground is occurring to the north of the area. The two seasonal streams flowing towards north joins Barha Nadi at a distance of 4.5km. Melahgara RF is located at a distance of 1.0km to NW of the area. The soil is eroded at the lowest slope of the mounds with formation of small gullies and small ravines. However, good depth of soil (2ft) of loam and sandy loam are found in blank areas at patches in the plots and on podu ravaged areas. Podu cultivation is very conspicuous and remnants are found at places. The effect of past "podu cultivation" is experienced due to presence of even aged crop at places.

**RAINFALL & TEMPERATURE:**

The annual rainfall varies from 1200 mm to 1500 mm. The maximum rainfall is received during the rainy season from July to September. The average temperature varies from 13.5°C minimum in December to 45° C maximum in May.

**OBJECTIVE OF THE SCHEME:**

The main objective of the present scheme is to (i) restock the degraded non-forest area by taking up plantation, (ii) tending the existing degraded crop where ever available with suitable silvicultural practices, (iii) clearly demarcating the area with posting up RCC pillars and (iv) providing strong

barbed wire fencing to dispense with the biotic interferences, (v) enforcing protection measures by involving people around under JFM and (vi) above all checking soil erosion and run off which will go in combination for enrichment of the vegetation and soil and building up ecosystem. The total area of 54.238 ha shall be covered under ANR (Gap plantation) mode with 300 plant/ha (as recommended in the joint verification report). Some rocky patches inside the area are retained as such for smooth management point of view and providing shelter to the wild fauna in the caves, crevices, talus etc.

#### ITEMS OF WORKS TO BE TAKEN UP:

To achieve the above objectives, the following items of work are mainly proscribed to be taken up with the full involvement and co-operation of local villagers.

1. **Survey and demarcation of Boundary:** The identified non-forest land is very close to the agricultural fields. Hence the boundary should be surveyed clearly by the User Agency with reference to the village maps and demarcated by posting R.C.C. pillars of size 1.25 mtr x 20 cm x 20 cm which shall be embedded at every corner/turning points of boundary line. The RCC pillars shall be embedded 0.625mtr deep in to the ground with a foundation of 50 cm x 40 cm. in C.C. Top of the pillar shall have a slanting cut facing outside the area for numbering the pillars which will be done in the same sequence as done in the map. Numbering should start from North-Western Corner and proceed in a clock wise direction. The distance between the corner points, forward and back ward bearing of each point, its GPS reading and the perimeter of the area to be afforested is given in **Annexure-II**.
2. **Fencing:** To protect the plantation and regeneration cleaning area from grazing and other biotic interferences, fencing shall be taken up around the entire compensatory afforestation site by using 5 stranded barbed wire (with two cross strands between each section) fencing with concrete posts. A model estimate for barbed wire fencing for 1 Km has been provided in **Annexure-III**. In addition Agave bulbils will be planted at a spacing of 2mt. along the boundary as a permanent feature of boundary.
3. **Gap Plantation:** The identified site is subjected to podu cultivation in patches of one acre to two acre, mostly occurring in moderate hill slopes and plains. Such patches having sporadic forest species will be covered under ANR practices followed by gap plantation at the rate of 300 sapling per ha. It is estimated that 54.238 ha shall be covered by ANR gap plantation in a staggered manner without any proper spacing as per site condition. The sites which are almost subjected to Podu Cultivation and occurring in patches. Plantation over the those areas shall be taken up at a spacing of 2.5m x 2.5m taking care of existing forest crops, if any.

Care should be taken to select only indigenous species as far as possible keeping in view of the existing natural vegetation in and around the area and also the climatic and edaphic factors. The choices of species are as follows:

Amla	<i>Embllica officinalis</i>
Bamboo kanta	<i>Bambusa arundinacea</i>
Karanja	<i>Pongomia pinnata</i>
Teak	<i>Tectona grandis</i>

Sisoo	<i>Dalbergia sisoo</i>
Neem	<i>Azadirachta indica</i>
Mahul	<i>Madhuca indica</i>
Bahada	<i>Terminalia belerica</i>

In the peripheral areas of the site, susceptible to grazing may be planted with non browsable species like teak, karanja etc.

The soil being eroded and lack of humus, it is proposed to take up pitting with a pit size of 30cm x 30cm x 30 cm at a spacing of 2.5 m x 2.5 m during February/March for allowing weathering of the soil. It is advisable to use an "A" frame for alignment of the pitting line along the contour. The planting should be taken up only with two year old seedlings having height more than one meter. The size of poly bags will be 12 inch x 9 inch with desired quantity of input. The seedlings will be graded and sorted at regular intervals to make those healthy and sound and to avoid root coiling.

While taking up the plantation in Podu ravaged areas species like Kusum, Mohul, Amla, Karanj, Neem, Asan, Teak, Jack fruit and specially Mango in more number shall only be planted which will help the tribal of Juang and Bhuyan to collect the NTFP items for their livelihood and socio-economic upliftment.

Staggered trenches of size 2 mt X 50 cm x 50 cm should be dug in between the planting rows at an interval of 2.0 mt along the contour, and the excavated earth be piled on the downhill side to form a bund. The staggered contour bunds should be stabilized with turf if necessary. The staggered contour trenches will not only arrest soil erosion but also conserve moisture and micronutrient for the planted saplings. It will retard the velocity of runoff and will be helpful in feeding ground water to the plants below it. If necessary, half moon trenches may be created at sloppy terrain for the same purpose on or before 2<sup>nd</sup> weeding.

**3.2 Development of Nursery:** A good nursery is the pre-requisite for a successful plantation. Therefore, all care should be taken to raise healthy and sound seedling of required sizes before they are put to the plantation site. The site being heavily eroded and subjected to other biotic interference, it is proposed to raise two year old seedlings for plantation. This should be particularly adopted in case of slow growing species like Mahul, Neem, Amla, Harida, Karanja, etc. In case of species like Sisoo & Gambhar, one year old seedling is good enough for plantation purpose. In case of Bamboo and Teak, pre-sprouted seedling from rhizomes and stumps should be raised for plantation purpose. Accordingly, the nursery programme can be planned out one year in advance. The two year seedling should be raised in poly-bags of 12 inch x 9 inch and one year old seedling can be raised in 10 inch x 6 inch poly bags. All care as per the guideline of the plantation manual should be taken up at all stages of nursery operation so that a good stock of healthy seedling can be raised. 10% extra seedlings should be raised to cover the short fall due to casualty in the nursery stage. In case of all the seedlings, shifting, grading of polythene bags should be done from time to time not to allow the tap roots to strike the ground. Nursery site should be selected, preferably near to the plantation site and in a well drained locality having perennial water sources.

**3.3 Planting:** The best time of planting of the ported seedling is soon after the on-set of regular monsoon or after a good shower of rain. Before planting, the pits are to be prepared by putting mixture of half cubic feet, of alluvial soil and farmyard manure. Basal dose of 30 gram of NPK fertilizer and 5 gram of Aldrin dust or phorate pesticide are to be applied to the pits before planting as basal dose. The excavated earth from the pits already weathered and free from stones

should be filled in the pits. Before removal of the plants from the Nursery the following precaution should be taken:

- (i) Roots escaping from the container should be trimmed.
- (ii) Posts containing the plant be watered, if necessary.
- (iii) Maximum care should be taken at the time of transportation and handling of seedling so that the ball of earth of the poly pots does not get disturbed and the primary leading shoots are broken. Manual transportation should be given preference.

Planting should be taken up on rainy/cloudy days by adopting all standard techniques of plantation. As far as possible, Bamboo should be put as a fourth plant in the row and planting up other species should be mixed with poly culture design.

Casualty of seedlings occurs due to various causes like heavy rains, drought, fire, grazing etc. But in a well managed plantation, where the planting stock consists of healthy and stout seedlings, say, about 5% may die during the period between planting and 1<sup>st</sup> weeding. The operation of casualty replacement may be done in combination with weeding. Seedlings to be used for casualty replacement should be earmarked and kept reserved at the time of planting. Only healthy and stout seedlings slightly larger than those planted at the time of operation should be used. This is important because only such seedlings can catch up growth with those that have survived and are growing. Before planting for casualty replacement, the following operations are to be taken up:

- (a) The failure pit is to be dug again.
- (b) Another dose of fertilizer, and insecticide should be given to the pit.
- (c) If the casualties are due to white ant attack, little more quantity of phorate pesticide may be applied to the pit.
- (d) If the casualties are due to water logging and wilting, care should be taken to drain out the pits by making small channels to downhill side.
- (e) Watering is to be done generally directly after planting, if the planting is done on a dry day.

Casualty replacement can also be taken up in the 2<sup>nd</sup> year formation and this time should not exceed 20%.

**3.4 Weeding, Manuring & Soil working:** To improve and enhance the growth of plants, it is necessary to see that the plants get as much nutrients as far as possible and that no other wild plants are contesting for space, light and nutrients. Therefore, weeding and soil working must be undertaken in a newly established plantation. Weeding consist of loosening soil around the plant with a hoe or even with a pick-axe and pulling out all unwanted growth along with their roots, rhizomes, stools etc. While doing so, care should be taken to see that the root system of the planted seedling is not damaged. Weeds within a radius of 0.5 meters around the plant should be removed. Under the prevailing conditions, two weeding are considered sufficient, the first to take place a few weeks after the main plantation is over, say, in August and the second weeding in early winter, i.e., in October or November. Strip weeding which involves cutting of weeds flush to the ground may be confined to the place in between the planted lines. The cut material may be placed along the contour between two rows of plantation, which will ultimately help in conservation of soil and moisture. Soil working is equally an important operation and it should be

carried out at the time of each weeding. While loosening the soil, it is important to see that the soil is not pulverized but left in clods. This not only helps in improving soil erosion but also helps in moisture conservation by breaking soil capacity.

The best time for application of fertilizer is at the time of soil working and weeding. In organic fertilizer like NPK @ 50gm/plant shall be applied at the time of soil working. Chemical fertilizer should not be placed too close to the plants as it may burn the roots and kill the plants. A small dose of urea @ 20gm/plant may be applied by crow bar hole method before 1<sup>st</sup> weeding, if possible for root penetration and growth of seedlings.

It is advisable to apply fertilizer on a rainy day soon after the weeding has been completed.

- 3.5 **Mulching:** Mulching is an operation where cut vegetative materials are placed around planted seedling covering the soil around it. This helps soil climate to considerable extent from desiccation. Mulching affects soil temperature, helps condensation, and prevents soil erosion and loss of soil moisture through evaporation. Further, it is to be carried out at the time of 2<sup>nd</sup> weeding. Weeds which have not lowered may be pulled out from around the planted seedlings and may be used as mulches around the seedlings.

Pruning of lower branches of the seedlings planted should be done in the third and subsequent years. This operation is beneficial for the following reasons.

- (a) They allow the plants to be healthy and stout and have knot free stems.
- (b) It reduces fire hazards by lessening the chance of ground fire.
- (c) The plants will be straight with clear bole.

The detailed cost estimate of various operations to be taken up in ANR plantation (300 seedlings) mode has been furnished in Annexure – IV.

4. **Silvicultural operation through ANR practices:** The natural vegetation existing over 54.238 ha is in a degraded stage as rooted wastes, bushes and poles will be tended by silvicultural practices viz. coppicing, cleaning, thinning shoot manipulation, singling, climber cutting etc. to enable the degraded vegetation to establish as trees. The permanent small gaps will be restocked by planting indigenous seedlings @ 300/ha according to planting operation narrated above. Considering the site condition germinated seeds of the natural grown trees may be dibbled by minor hoeing without any spacing during 1<sup>st</sup> week of July. It can also enrich the vegetative cover to some extent. Germinated mango carnal, bamboo rhizome and jackfruit carnal will be more appreciated by the tribal.
5. **Soil Conservation Measures:** The slope of the identified area varies from gentle to moderate slopes and therefore, soil conservation measures are indispensable and are to be appropriately addressed. The following measures are proposed to be taken up inside the plantation area and regeneration cleaning area.
- i) In the slopes, staggered trenches of 2m x 50Cm x 50Cm should be dug in between the planting line along the contours at an interval of 2.0m, and the excavated earth be piled on the downhill side to form a bund. The staggered contour bunds should be stabilized with plantation on it. The staggered contour trenches will act as place of deposit of eroded soil and will check soil erosion. It will retard the velocity of run-off and will be helpful in feeding ground water to the plants planted below it.

- ii) Check dams are proposed to be constructed with dry rubble stone across in small nallahs specially to be given on the upper reaches of the nallahs.

The detailed cost estimate of soil conservation measures has been furnished in Annexure-V(A-C).

**6. People's Participation:** In the recent times, no scheme shall be effective if the local villagers are not involved in the implementation of the scheme itself. The villagers who are having a right on the NTFP items in the adjoining forest area are to be associated with the implementation of the scheme at all different levels. For that, Van Samrakhyana Samitee (VSS) is proposed to be constituted in all the villages around the compensatory afforestation site. In accordance with the guidelines of the Government of Odisha issued on 3<sup>rd</sup> July 1993, the villagers are to be motivated and inspired and above all, explained the benefits they will be getting if plantation is protected by them.

To protect the plantation, extra care shall be taken to develop the living standard of the local tribes who were making the podu cultivation in the proponent compensatory Afforestation site. To develop their living standard, through eco-development programmes like land development programme of their tenanted area, plantation of fruit bearing trees in their homestead land and farm house, providing them with hybrid vegetable seeds and providing goat, sheep and chicks for rearing shall be taken up as a part of income generation programme after conducting PRA through resourceful agencies. Moreover, their culture and religious sentiments are also to be taken care of and to keep them in good humour, incentives on developmental/cultural activities shall be given which will have a long benefit on the success of plantation programme. All forest conservation events shall be celebrated in their village for creating awareness among them for protection of the plantation.

**7. Monitoring & Execution: Establishment & Infrastructure:** The scheme will be executed by the Forest Department and shall be monitored from time to time by responsible officer including DFO. Nursery, plantation journal and other relevant documents shall be maintained as per the provision of the Plantation Manual. A plantation shed with drinking water facilities may be constructed at the site for execution of different work and from future protection point of view.

**8. Total cost of the Project:** The total cost of the project will be Rs.56, 15, 600.00 (Rupees Fifty-six lakh Fifteen thousand Six hundred) only as detailed in Annexure-VI, which will be deposited in an account as per the direction of the DFO in favour of State specific CAMPA.

  
Divisional Forest Officer  
Kalahandi South Division  
Kalahandi South Division



OFFICE OF THE DIVISIONAL FOREST OFFICER, KALAHANDI SOUTH DIVISION

To: Memo No- /3F,Dt-  
The Collector Kalahandi.

Sub:- identification and allocation of non-Forest Govt. land for compensatory afforestation.

Ref:- Your letter No. 848 dt. 13.08.2014.

Sir,



With reference to the above cited correspondence on the captioned subject, the joint verification report of non-forest Govt. land in respect of Dandapadar village an area of 54.238 Ha. and Tarapadar village an area of 217.676 ha. together with non-suitable Govt. land of area 28.558 ha. of village Tebhakalam submitted by the Tahasildar Th. Rampur vide his letter No. 7301 dt. 30.09.2014 against the total diversion of Forest land of 300.472 ha. pertaining to mining lease of OMC Ltd. in sundargarh Keonjhar and Jaipur District is submitted herewith for favour of information & necessary action.

As such I would request you to kindly alienate the aforesaid suitable non-forest land an area of 271.914 Ha. in favour of the undersigned for taking up compensatory afforestation over the area and the balance non-forest Govt. land an area of 28.558 ha. may kindly be allocated for the purpose at the earliest.

Encl:- 2 Nos joint verification  
report.

Yours Faithfully,

Sd/-

Divisional Forest Officer,  
Kalahandi South Division

Memo No. 4236 Dt. 18-10-14

Copy forwarded the Chairman-cum-Managing Director, OMC, Bhubaneswar for information & necessary action.

18/10/14  
Divisional Forest Officer,  
Kalahandi South Division.

JOINT VERIFICATION REPORT OF NON-FOREST GOVERNMENT LAND IN  
DIFFERENT VILLAGES UNDER THUAMUL RAMPUR TAHASIL OF KALAHANDI  
DISTRICT FOR RAISING COMPENSATORY AFFORESTATION (ANR & BLOCK  
PLANTATION) AGAINST MINING PROJECTS OF M/s ODISHA MINING  
CORPORATION LIMITED LOCATED IN THE DISTRICT OF KEONJHAR, JAIPUR  
AND SUNDARGARH DISTRICT, ODISHA.

Certified that on joint verification of non-forest Government land (Kissam-Dangar) in different villages of Thuamul Rampur Tahasil of Kalahandi district, it is found that the schedule wise land mentioned as given under is suitable for ANR and Block Plantation and are free from encroachment and encumbrances.

Name of the mines/ Project	Name of the village	Khata No.	Plot No.	Total area of the plot in Acre	Area recommended for Compensatory Afforestation in Acre	Kissam	Type of plantation in ha	
							Block 1600nos of plants/ha	ANR 300nos of plants/ha
Infrastructure Project at Daitari Iron Ore Mines	Dandapadar	44 (Abada Ajogya Anabadi)	157	13.95	11.05	Dangar		
			158	38.68	38.68	Dangar	NEI	ANR
			159	35.75	35.75	Dangar		
			160	27.80	25.80	Dangar		
			171	25.65	22.75	Dangar		
			Total	141.83	134.03 Acre or 54.238 ha			

Revenue Inspector  
Kalahandi

Forest Officer  
FORESTER  
Kalahandi Section

Forest Range Officer  
Thuamul Rampur

Talashidhar  
Thuamul Rampur

Divisional Forest Officer  
Kalahandi (S) Division


JOINT VERIFICATION REPORT OF NON-FOREST GOVERNMENT LAND IN DIFFERENT VILLAGES UNDER THUAMUL RAMPUR TAHASIL OF KALAHANDI DISTRICT FOR RAISING COMPENSATORY AFFORESTATION (ANR & BLOCK PLANTATION) AGAINST MINING PROJECTS OF M/s ODISHA MINING CORPORATION LIMITED LOCATED IN THE DISTRICT OF KEONJHAR, JAJPUR AND SUNDARGARH DISTRICT, ODISHA.


Certified that on joint verification of non-forest Government land (Kissam-Dangar) in **Tarapadar** village of Thuamul Rampur Tahasil of Kalahandi district, it is found that the schedule wise land mentioned against each village as given under is suitable for ANR and Block Plantation and are free from encroachment and encumbrances.

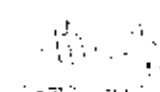
Name of the mines/ Project	Khata No.	Plot No.	Total area of the plot in Acre	Area asked for Compensatory Afforestation in Acre	Area recommended in acres	Kissam	Type of plantation in ha	
							Block 1600nos of plants/ha	ANR 300nos of plants/ha
Dumping site for South-Kaliapani	15 (Abada Ajogya Anabadi)	1	65.350	62.80	61.55	Dangar		
		21	51.310	29.71	28.09	Dangar		
		42	49.410	41.31	39.72	Dangar		
		159	54.050	53.45	53.45	Dangar		
		162	61.550	60.50	60.50	Dangar		
		163	61.050	61.05	61.05	Dangar		
		187	38.350	36.35	32.25	Dangar		
		204	22.280	22.28	21.18	Dangar	Block	NJLL
		205	39.200	36.20	30.80	Dangar		
		206	31.920	31.92	29.74	Dangar		
		207	12.720	12.72	12.36	Dangar		
		208	16.880	16.88	16.88	Dangar		
		186/209	47.500	12.57	33.17	Dangar		
		186/210	57.150	57.15	57.15	Dangar		
		<b>Total</b>	<b>608.72</b>	<b>534.89 Acre or 216.462 ha.</b>	<b>537.89 Acre or 217.676 ha.</b>		<b>217.676 ha.</b>	

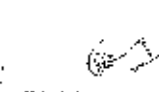
N.B. The shortfall in area in some of these plots is compensated for in plot no.186/209.

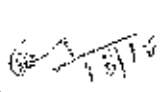
  
Revenue Inspector

  
Forest Officer

  
Forest Range Officer

  
Tahasildar

  
Joint Verification Officer

  
Divisional Forest Officer  
Kalahandi (S) Division

OFFICE OF THE COLLECTOR & DISTRICT MAGISTRATE: KALAHANDI

No. 1215 /Rev- Date: 12.11.2014

To,

Divisional Forest Officer (South)  
Kalahandi, Bhawanipatna

Sub: Filing of requisition for Compensatory Aforestation – allocation of non-forest Govt. land.

Ref: Your letter No. 4235 / 3F dated 18.10.2014.

Sir,

I am to say that non-forest revenue land measuring to an area of 271.914 Ha (54.238 Ha in vill. Dandapadar and 217.676 Ha in village Tarapadar) under Th.Rampur Tahasil has been identified and allotted for raising compensatory aforestation in lieu of the forest land pertaining to lease hold area of the granted mining leases against Daitari Iron Ore mines and Dumping site for South-Kaliapani Mines in Keonjhar, Jajpur and Sundargarh Districts in favour of M/S. OMC Ltd., Bhubaneswar.

As such, you are requested to file necessary requisition before the Tahasildar, Th.Rampur for processing alienation proposal for sanction of the land in favour of Forest Department immediately.

Yours faithfully,

  
Collector,  
Kalahandi

Memo No. 1216 /Rev. Date: 13.11.2014

Copy to Tahasildar, Th.Rampur for information. He is requested to process the alienation proposal in favour of the Forest Department on obtaining the requisition from the Divisional Forest Officer (South), Kalahandi

  
Collector,  
Kalahandi

Memo No. 1217 /Rev. Date: 13.11.2014

Copy to Sub-Collector, Bhawanipatna for information and necessary action.

  
Collector,  
Kalahandi

Memo No. 1218 /Rev. Date: 13.11.2014

Copy to Chairman-cum-MD, OMC Ltd., Odisha, Bhubaneswar for information and necessary action.

  
Collector,  
Kalahandi

**ANNEXURE-II****GPS READING OF THE AREA PROPOSED FOR COMPENSATORY AFFORESTATION****(Village: Dandapadar)**

Station		Distance in mtr	Forward Bearing	Backward Bearing	Co-ordinates	
From	To				Longitude	Latitude
1	2	108.69	4°53'15.36"	184°53'16.80"	83° 12' 39.140" E	19° 30' 6.833" N
2	3	37.78	31°41'10.68"	211°41'09.60"	83° 12' 42.856" E	19° 30' 7.089" N
3	4	96.63	38°19'44.40"	218°19'44.36"	83° 12' 43.967" E	19° 30' 7.720" N
4	5	24.11	32°54'19.08"	212°54'18.00"	83° 12' 46.592" E	19° 30' 9.637" N
5	6	428.80	24°15'50.40"	204°15'50.44"	83° 12' 47.292" E	19° 30' 10.054" N
6	7	273.22	308°52'04.84"	128°52'04.80"	83° 13' 0.772" E	19° 30' 15.619" N
7	8	63.74	275°00'03.64"	95°00'03.60"	83° 13' 6.556" E	19° 30' 8.631" N
8	9	230.12	335°06'50.44"	155°06'50.40"	83° 13' 6.718" E	19° 30' 6.564" N
9	10	280.96	335°27'43.24"	155°27'43.24"	83° 13' 13.832" E	19° 30' 3.328" N
10	11	406.22	273°08'09.56"	93°08'09.61"	83° 13' 22.542" E	19° 29' 59.427" N
11	12	35.50	206°33'54.00"	26°33'54.00"	83° 13' 23.124" E	19° 29' 46.232" N
12	13	49.27	177°13'48.00"	357°13'48.04"	83° 13' 22.028" E	19° 29' 45.729" N
13	14	58.82	176°54'21.64"	356°54'21.64"	83° 13' 20.342" E	19° 29' 45.828" N
14	15	64.57	200°53'09.60"	20°53'09.60"	83° 13' 18.330" E	19° 29' 45.955" N
15	16	95.53	188°36'03.60"	8°36'03.60"	83° 13' 16.252" E	19° 29' 45.233" N
16	17	34.46	187°56'38.40"	7°56'38.40"	83° 13' 13.008" E	19° 29' 44.808" N
17	18	96.84	194°43'12.00"	14°43'12.00"	83° 13' 11.835" E	19° 29' 44.667" N
18	19	33.35	181°21'50.40"	1°21'50.40"	83° 13' 8.614" E	19° 29' 43.907" N
19	20	776.28	151°04'33.60"	331°04'33.56"	83° 13' 7.470" E	19° 29' 43.895" N
20	21	68.69	119°01'58.80"	299°01'58.76"	83° 12' 44.344" E	19° 29' 56.386" N
21	22	111.66	126°19'37.20"	306°19'37.20"	83° 12' 43.227" E	19° 29' 58.352" N
22	23	38.57	112°09'57.60"	292°09'57.56"	83° 12' 41.000" E	19° 30' 1.304" N
23	24	72.52	104°47'49.20"	284°47'49.20"	83° 12' 40.516" E	19° 30' 2.472" N
24	1	67.66	110°11'56.40"	290°11'56.44"	83° 12' 39.913" E	19° 30' 4.759" N
Perimeter: 3553.99 mtr						

**ANNEXURE - III****ESTIMATE FOR BARBED WIRE FENCING**

Estimate for 1 Kilometer			
1	No. of pillars required 500 nos.		
	Cost of 1 pillar	Rs	568.00
	Transportation charges	Rs	244.00
	Cost of base fixing	Rs	244.00
	Cost of fixing barbed wire @ 25.00	Rs	49.00
	Total cost for fixing 1 pillar	Rs	1105.00
	Cost for 500 pillars	Rs	5,52,500.00

Cost of barbed wire (1 Qnlt) @ 8000.00. Cost of barbed wire (5+2) strand, 7500 mtrs or 24.75 Qnlt @ 0.33kg/rmt.	Rs 1,98,000.00
<b>Total cost for 1 Km.</b>	<b>Rs 7,50,500.00</b>
Total cost for fencing: Perimeter of the area i.e. 3.553km	Rs 26,66,526.50
Maintenance 5% of Rs. 1,33,326.32 per annum for 4 year	Rs 533305.28
<b>Total barbed wire fencing of 3.553 Km</b>	<b>Rs 31,99,831.78</b>

#### ANNEXURE-IV

### **COST ESTIMATE FOR ANR WITH GAP PLANTATION OF 300 SEEDLINGS/HECTARE**

1.	Type of the Plantation.	ANR with Gap Plantation.
2.	No. of seedlings to be planted.	300 Nos. per hectare
3.	Spacing to be adopted.	2.5 m x 2.5 m
4.	Size of pits.	30 cm x 30 cm x 30 cm
5.	Wage rate.	Rs 150.00 per manday.

Sl. No.	Item of Work	Person days	Labour (Rs)	Material (Rs)	Total (Rs)
<b>0<sup>th</sup> Year (Advanced work) pre-planting operation</b>					
1	Survey, Demarcation and Pillar Posting, GPS Reading with mapping	2	300	0	300
2	Site Preparation	2	300	0	300
3	Silvicultural Operation including clearance of weed, climber cutting, high stump cutting, singling of shoots	5	750	0	750
4	Raising Nursery @ 220 seedling / ha (including 10 % Casualty replacement) and watch & ward (Part-I)	8	900	300	1200
5	Contingency and Unforeseen Expenditure	1	0	150	150
<b>Sub Total</b>		<b>18</b>	<b>2250</b>	<b>450</b>	<b>2700</b>
<b>1<sup>st</sup> Year Planting</b>					
1	Maintenance of Nursery (Balance)	4	600	0	600
2	Pitting 30 cm cube size	7	1050	0	1050
3	Carriage and planting including casualty replacement	4.5	675	0	675
4	Complete weeding, Soil working, manuring	5.5	825	0	825
5	Cost of Vermi compost and insecticide for Plantation	3	0	450	450
6	Cost of Chemical Fertilizer	1	0	150	150
7	Fire line tracing and inspection path	3	450	0	450
8	Silvicultural Operation involving clearance of weeds, cutting of climbers, singling of shoot etc.	15	2250	0	2250
9	Soil conservation measures	20	3000	0	3000
10	Watch & Ward	8	1200	0	1200
11	Contingency and unforeseen expenditure	2	0	300	300
<b>Sub Total</b>		<b>73</b>	<b>10050</b>	<b>900</b>	<b>10950</b>
<b>2<sup>nd</sup> Year Maintenance</b>					
1	Casualty Replacement including cost of seedling, carriage and planting.	2	300	0	300
2	Complete weeding and pruning	2	300	0	300
3	Soil working and manuring	2	300	0	300
4	Cost of fertilizers and Insecticides	1	0	150	150

5	Fire line tracing and inspection path	1	150	0	150
6	Soil conservation measures	8	1200	0	1200
7	Watch & Ward (Whole Year)	8	1200	0	1200
8	Contingency and unforeseen expenditure	1	0	150	150
<b>Sub Total</b>		<b>25</b>	<b>3450</b>	<b>300</b>	<b>3750</b>
<b>3<sup>rd</sup> Year Maintenance</b>					
1	Complete weeding and pruning	1	150	0	150
2	Soil working	1	150	0	150
3	Fire line tracing and inspection path	1	150	0	150
4	Watch & Ward (Whole Year)	8	1200	0	1200
5	Contingency and unforeseen expenditure	0	0	0	0
<b>Sub Total</b>		<b>11</b>	<b>1650</b>	<b>0</b>	<b>1650</b>
<b>4<sup>th</sup> Year Maintenance</b>					
1	Fire line tracing and inspection path	1	150	0	150
2	Watch, Ward & Pruning	2	300	0	300
<b>Sub Total</b>		<b>3</b>	<b>450</b>	<b>0</b>	<b>450</b>
<b>5<sup>th</sup> Year Maintenance</b>					
1	Fire line tracing and inspection path	1	150	0	150
2	Watch, Ward & Pruning	2	300	0	300
<b>Sub Total</b>		<b>3</b>	<b>450</b>	<b>0</b>	<b>450</b>
<b>6<sup>th</sup> Year Maintenance</b>					
1	Fire line tracing and inspection path	1	150	0	150
2	Watch, Ward & Pruning	2	300	0	300
<b>Sub Total</b>		<b>3</b>	<b>450</b>	<b>0</b>	<b>450</b>
<b>7<sup>th</sup> Year Maintenance</b>					
1	Fire line tracing and inspection path	1	150	0	150
2	Watch, Ward & Pruning	2	300	0	300
<b>Sub Total</b>		<b>3</b>	<b>450</b>	<b>0</b>	<b>450</b>
<b>8<sup>th</sup> Year Maintenance</b>					
1	Fire line tracing and inspection path	1	150	0	150
2	Watch, Ward & Pruning	2	300	0	300
<b>Sub Total</b>		<b>3</b>	<b>450</b>	<b>0</b>	<b>450</b>
<b>9<sup>th</sup> Year Maintenance</b>					
1	Fire line tracing and inspection path	1	150	0	150
2	Watch, Ward & Pruning	2	300	0	300
<b>Sub Total</b>		<b>3</b>	<b>450</b>	<b>0</b>	<b>450</b>
<b>10<sup>th</sup> Year Maintenance</b>					
1	Fire line tracing and inspection path	1	150	0	150
2	Watch, Ward & Pruning	2	300	0	300
<b>Sub Total</b>		<b>3</b>	<b>450</b>	<b>0</b>	<b>450</b>
<b>Grand Total</b>		<b>148</b>	<b>20550</b>	<b>1650</b>	<b>22200</b>

#### **ABSTRACT OF COST OF PLANTATION FOR @ 300 SEEDLINGS PER HECTARE**

<b>Year</b>	<b>Person Days</b>	<b>Labour (Rs)</b>	<b>Material (Rs.)</b>	<b>Total Cost (Rs)</b>
0 <sup>th</sup> Year	18	2250	450	2700
1 <sup>st</sup> Year	73	10050	900	10950
2 <sup>nd</sup> Year	25	3450	300	3750
3 <sup>rd</sup> Year	11	1650	0	1650
4 <sup>th</sup> Year	3	450	0	450
5 <sup>th</sup> Year	3	450	0	450
6 <sup>th</sup> Year	3	450	0	450
7 <sup>th</sup> Year	3	450	0	450
8 <sup>th</sup> Year	3	450	0	450

9 <sup>th</sup> Year	3	450	0	450
10 <sup>th</sup> Year	3	450	0	450
<b>TOTAL</b>	<b>148</b>	<b>20550</b>	<b>1650</b>	<b>22200</b>
Additional incentive (3%) for VSS/Fr/FG proposed for more than 80% survival and very good growth during 4th year of maintenance as per recommendation of DFO and RCCF.				<b>666.00</b>
Additional EPA expenses if implemented through VSS at rate Rs 1200/- in 0th Year, Rs 2400/- in 1st Year, Rs 1800/- in 2nd Year, Rs 600/- per year from 3rd Year to 10 <sup>th</sup> year.				<b>10200.00</b>
<b>Total Norm per ha. in JFM mode with incentives.</b>				<b>33066.00</b>

Cost for 54.238 Ha (ANR) plantation in JFM mode x Rs.33066.00 = Rs 17, 93,433.71

#### ANNEXURE-V (A)

##### Details Estimate of Loose Boulder Structure (S.C.M)

Span-1mtr, Height = 0.6mtr, Slope-U/S: 1:1.5 D/S Slope: 1:2

1	Leaving the unshaped surface of the selected site & layout the structure foundation L.S. 1 MD	@ Rs.152.50 / per MD	Rs.152.50
2	Excavation of foundation in hard soil within initial lead of 50 mtr. including rough dressing and breaking of clods to maximum size 5 cm. to 7 cm laying in layer not exceeding 0.3 in depth to strengthening both side U/S approx. bund of loose boulder structure. Base with apron- 1 x 3.60 x 1.60 x 0.30 Wing wall-4 x 0.50 x 0.30 x 0.30 @ Rs. 5556.00 per 100 cum.	1.728 0.180	1.908 Rs.106.00
3	Rough stone dry packing up to GL. Base with apron-1 x 3.60 x 1.60 x 0.30 Wing wall-4 x 0.50 x 0.30 x 0.30 Above GL Super structure-1 x 1.00 x <del>2.60</del> 0.50 x 0.60 2 Wing wall-4 x 0.50 x 0.30 x 0.30 Side wall	1.728 0.180 0.930 0.180	1.908
i	2 x <del>0.3+0.9</del> x 0.3 2	0.360	
ii	2 x <del>0.3+0.9</del> x 1.2 x 0.3 2	0.432	
iii	2 x 0.5 x 0.9 x 0.3	0.270	
iv	2 x 1.0 x 0.3 x 0.3	0.180	2.352 cum
	<b>Total</b>		<b>4.26 cum</b>
	<b>@ Rs. 476.56 per cum</b>		<b>Rs.2,030.14</b>
	<b>Grand Total</b>		<b>Rs 2288.64</b>
Cost of 10 nos of 1 mtr loose boulder structure = Rs 2288.64 X 10 = Rs 22886.40			



**ANNEXURE-V (B)****Details Estimate of Loose Boulder Structure (S.C.M)****Span-2mt. Ht.=0.6mt. slope-U/S:1:1.5, D/S Slope: 1:2**

1	Leaving the unshaped surface of the selected site & layout the structure foundation L.S. 1 MD	@ Rs.152.50 / per MD	Rs.152.50
2	Excavation of foundation in hard soil within initial lead of 50mtr.including rough dressing and braking of clods to maximum size 5 cm. to 7 cm laying in layer not exceeding 0.3 in depth to strengthening both side U/S approx. bund of loose boulder structure. Base with apron- 1 x 3.70 x 3.00 x 0.30 Wing wall-4 x 0.50 x 0.50 x 0.30 @ Rs. 5510.00 per 100 cum.	3.33 0.30	3.63 cum Rs.200.00
3	Rough stone dry packing up to GL Base with apron-1 x 3.70 x 3.00 x 0.30 Wing wall-4 x 0.50 x 0.50 x 0.30 Above GL Super structure-1 x 2.00 x $\frac{2.70+0.60}{2}$ x 0.60 Wing wall-4 x 0.50 x 0.50 x 0.50 Side wall	3.33 0.30 1.980 0.50	
	i) $\frac{2 \times 0.50+1.10}{2} \times 0.9 \times 0.5$	0.72	
	ii) $\frac{2 \times 0.5+1.10}{2} \times 1.2 \times 0.5$	0.96	
	iii) $2 \times 0.6 \times 0.6 \times 0.5$	0.36	
	iv) $2 \times 1.0 \times 0.5 \times 0.5$	0.50	8.65 cum
	@ Rs. 476.18 per cum		Rs.4,119.00
		Grand Total	Rs 4471.50
Cost of 8 nos of 2 mtr loose boulder structure = Rs 4471.50 X 8 = Rs 35772.00			

**ANNEXURE-V (C)**

Estimate for digging one no of staggered trench of size 2 mtr x 0.54 mtr x 0.5 mtr Along with  
Agave Plantation on the dugout soil

i) Earth work in excavation of staggered trench in hard soil including rough dressing and leveling the beds and heaping the dugout soil at the downhill side of the trench and leaving the same too. Size of a trench = 2.0 mt x 0.5 mt x 0.5 mt = 0.5 cum @ 246.80 per	Rs. 43.60
--	-----------

ii) Cost for Agave planting on the dugout Soil and its maintenance including weeding soil working , Manuring , Cost of Fertilizer etc. for three years.	Rs. 54.00
3 nos. of Agave plants per trench @Rs. 18/- per plants on 1.5	
Total	Rs 97.60 or 98.00
Cost of 10 nos. of staggered trenches covering over <del>54.238</del> ha=10	(Rupees Ninety Eight) only
X Rs 98.00 X 54.238 ha	Rs 53153.24

#### Annexure – VI

#### TOTAL COST OF THE COMPENSATORY AFFORESTATION SCHEME

Sl. No	Item of work	Estimated Cost in Rs.
1	Barbed wire fencing around non –forest land over 3.553 km (Annexure – III)	Rs. 31,99,831.78
2	ANR (300 seedling) plantation over 54.238 ha of non-forest land @ Rs 33,066.00 per Ha. (Annexure – V)	Rs.17,93,433.71
	<b>Sub-total</b>	Rs. 49,93,265.49
3	Special Soil conservation Measures [Annexure-VI A-C] (Rs 22886.40+Rs 35772.00+Rs.53153.24)	Rs. 111811.64
	<b>Total</b>	Rs 5105077.13
4	Escalation (10%)	Rs. 510507.71
	<b>Grand Total</b>	Rs 5615584.84
		OR
		Rs 56,15,600.00

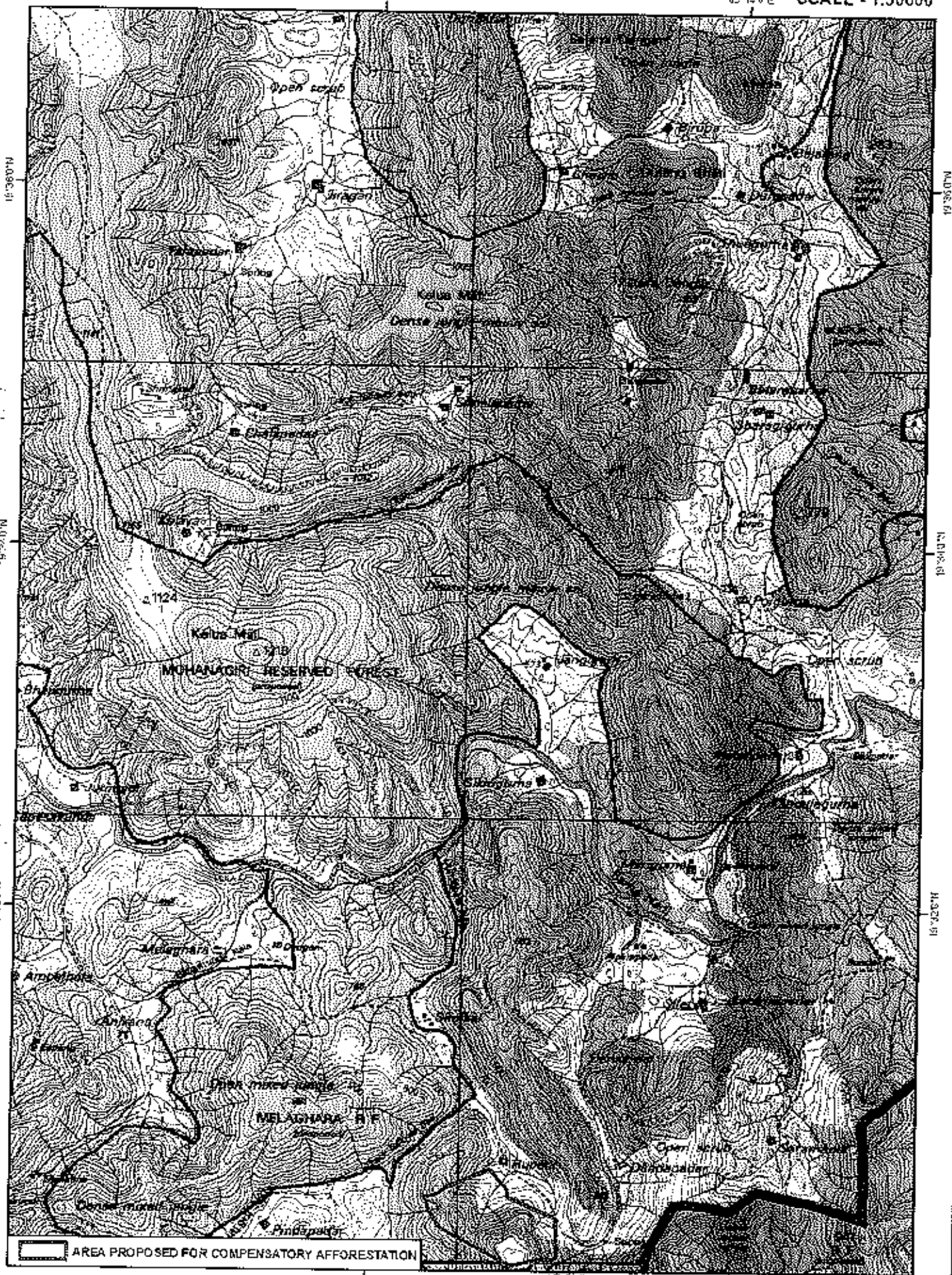
(Rupees Fifty-six lakhs Fifteen Thousand and Six Hundred) only

*20/07/15*  
 Divisional Forest Officer  
 Kalahandi South Division  
 Divisional Forest Officer  
 Kalahandi South Division

## KEY PLAN

REFERENCE TOPOSHEET NO - E44F21 83°12'0"E

83°14'0"E SCALE - 1:50000



33°12'N

53'14"E

By General Manager/Holder  
of American Express Co.  
100 Broadway  
New York, N.Y. 10038