

Draft Resettlement Plan

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IND: Railways Track Electrification Project **Ranchi - Lohardaga - Tori Subproject**

Prepared by Central Organisation for Railway Electrification (CORE), Ministry of Railways,
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ABBREVIATIONS

ADB	–	Asian Development Bank
CD	–	Community Development Block
CPD	–	Chief Project Director
CORE	–	Central Organisation for Railway Electrification
DC	–	District Collector
DCEE	–	Deputy Chief Engineer Electrical
DH	–	Displaced Household
DMS	–	Detailed Measurement Surveys
DP	–	Displaced Person
EA	–	Executing Agency
GOI	–	Government of India
GoJ	–	Government of Jharkhand
GRC	–	Grievance Redressal Committee
IAY	–	Indira Awaas Yojana
INR	–	Indian Rupee
IRFC	–	Indian Railways Finance Corporation
JUSNL	–	Jharkhand Urja Sancharan Nigam Limited
LA	–	Land Acquisition
NGO	–	Non Government Organization
NH	–	National Highway
RFCTLARR	–	The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013
R&R	–	Rehabilitation and Resettlement
RF	–	Resettlement Framework
RO	–	Resettlement Officer
RP	–	Resettlement Plan
RSIP	–	Railway Sector Investment Program
SC	–	Scheduled Caste
SP	–	Sectioning and Paralleling Post
SPS	–	Safeguard Policy Statement
SSE	–	Senior Section Engineer
SSP	–	Sub Sectioning and Paralleling Post
ST	–	Scheduled Tribe
TSS	–	Traction Sub Station

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EXECUTIVE SUMMARY

1. The Asian Development Bank (ADB) is considering financing the electrification of 5,208km of existing railways tracks spread across 29 sections in India. The finance will be provided to the Indian Railways Finance Corporation (IRFC), a fully owned and captive financing vehicle of the Ministry of Railways, Government of India. The Central Organisation for Railway Electrification (CORE), Power Grid Corporation of India, Rail India Technical and Economic Service Limited (RITES) and Rail Vikas Nigam limited (RVNL) will be the implementing agencies and responsible for carrying out electrification of the proposed network. This Resettlement Plan (RP) has been prepared in line with the agreed Resettlement Framework (RF) of the Railway Sector Investment Program (RSIP).

2. The subproject involves electrification of 111km length of the railway track between Ranchi Junction and Tori Junction. The subproject components include (i) erection of poles along the railway track to support overhead line suspended from poles; (ii) erection of overhead lines; (iii) erection of 3 numbers of Sectioning and Paralleling Post (SP); (iv) erection of 5 numbers of Sub Sectioning and Paralleling Post (SSP); (v) erection of 2 numbers of Traction Substation (TSS); (vi) erection of 2 bays each at Lohardaga Substation exclusively for this subproject; (vii) erection of 132kV transmission line from the High Tension (HT) Line Tower in Miral (Kake) Village to Traction substation near Piska Junction; and (viii) erection of 132kV transmission line from Lohardaga substation to Traction substation near Lohardaga Junction. CORE will be the implementing agency for this subproject.

3. The subproject does not involve any land acquisition and there is no physical or economic displacement. The erection of subproject's poles, overhead lines, sectioning and paralleling post, sub sectioning and paralleling post and traction substations will not involve any land acquisition; all these components have been proposed in railway land. The substation bays will also not involve any land acquisition and has been proposed in government land. All the sites were inspected as part of the social screening undertaken in December 2017 to ascertain the status of land and it was found that all sites were free from encumbrance. There were no informal users, squatters or encroachers in any of the sites.

4. Except the two 132kV transmission line which pass through private land and will involve erection of electricity towers (pylon) in private land, all other components are sited on railway (government) land free from encumbrance.

Summary of Subproject Impacts

Subproject Components	Component Description	IR Impacts
Erection of poles	About 2464 poles will be erected.	No IR impacts as the poles are to be erected within the right-of-way
Erection of overhead lines	Overhead lines will be erected suspended from poles erected along the entire length.	No IR impacts as the overhead lines are to be erected above the railway track and well within the right-of-way
Erection of Sectioning and Paralleling (SP) Post	The SP will be erected in an area of 5.67m x 20.8m 5.67m (perpendicular and 20.8m parallel to the track) and is erected at about 3.5-4.5m away from the edge of the track	No IR impacts in erection of the SPs as the 354 sq.m of land required for the 3-SPs is within the right-of-way of the railways
Erection of Sub Sectioning and Paralleling (SSP) Post	The SSPs will be erected in an area of 5.62m x 17.8m (5.62m perpendicular and 17.8m parallel to the track) and is erected at about 3.5-4.5m away from the	No IR impacts as the 505 sq.m of land required for the 5-SSPs are available within the right-of-way of the railways

Subproject Components	Component Description	IR Impacts
	edge of the track.	
Erection of Traction Substation (TSS)	The TSS will be erected in an area of 45m x 85m (45m perpendicular and 85m parallel to the track) and is erected at about 3.5m to 4.5m away from the track.	No IR impacts in the TSS proposed as the 7650 sq.m of land required for the 2-TSSs are available within the right-of-way of the railways
Erection of Bays	Two additional bays will be erected.	No IR impacts, as the 2-bays are proposed within the campus of Lohardaga substation. The land belongs to JUSNL
Transmission line	132kV transmission line will be erected for a length of 8.8km	Will involve damage to crop of about 62-landowners in about 2.64ha due to erection of the transmission line and potential loss of crop in about 3267 sq.m due to the erection of 62-towers

* The alignment of transmission line has been tentatively fixed avoiding settlement areas and the exact alignment would be known only during execution.

5. The erection of 2 bays each within the 132kV Lohardaga substation, and the erections of 8.8km transmission line comprising of 3.8km transmission line from HT tower in Miral village to Piska TSS and 5km transmission line from Lohardaga SS to Lohardaga TSS will be executed by Jharkhand Urja Sancharan Nigam Limited (JUSNL) and the cost will be borne by CORE.

6. The subproject transmission lines pass through villages inhabited by tribal households. Further, six of the blocks in the subproject area come under the Schedule Area. The proposed subproject components are sited on railway land and as such the subproject does not involve any land acquisition and there is no physical or economic displacement. Hence, there will be no land acquisition from any Scheduled Tribe household and no Scheduled Tribe household will face physical or economic displacement. In addition to the crop compensation that would be paid to the land owners in whose land transmission lines are erected, the Scheduled Tribe households amongst them would be entitled for vulnerable assistance.

7. The private land used for erection of transmission towers is not acquired by the Jharkhand Urja Sancharan Nigam Limited (JUSNL) and instead the ownership of the land on which towers are erected continues to vest with the landowners. **As per current State government notification, JUSNL will make payment to the land owner in line with Ministry of Power, Government of India guidelines¹ for damages to crops during erection of the tower and associated lines.** JUSNL invokes the provision of Sec 164 of the Electricity Act, 2003 read with Sec 10 to Sec 19 of the Indian Telegraph Act, 1885 to undertake such works.

8. The subproject involves laying of two separate transmission lines, one for a length of 3.8km and another for 5km and these being 132kV lines, the area required for each transmission tower will be between 36sq.m to 121sq.m depending on the type of tower². The span of transmission towers is about 350m, which varies according to the angle. In the 8.8km length of transmission lines proposed, it is estimated that about 27 towers will be required to be erected, with an area of about 36 sq.m to 121 sq.m each; and assuming that

¹ Guidelines for payment of compensation towards damages in regard to Right of Way for transmission lines dated 15 October 2015 and adopted by Govt of Jharkhand by notification dated 13 December 2017

²For a normal tower of 28m height, the tower base of A-type tower will be 6mx6m, B-type tower will be 8mx8m, C-type tower will be 9mx9m and D-type tower will be 11mx11m.

all towers erected are D-type, the total land required is 3267 sq.m or say 0.33ha. However, the actual area of land to be used by the 4 footings of a tower would be about 4 to 5 sq.m (1sq.m is required to set up a foundation of one footing). The land owners would be able to cultivate the land under the tower after the construction of the tower is completed.

9. The erection of tower will result in damage to crop, for a maximum area of 121 sq.m and towards this JUSNL will pay compensation for damages at 85 percent of the circle rate/guideline value for the tower base area and will also be paying crop compensation for crop damaged due to erection of each tower. Further, diminution of land value at 15 percent of the right-of-way corridor will be paid for the width of the right-of way corridor of the transmission line and will also be paying compensation for crop compensation for crop damaged in stringing and sagging.

10. The yield of paddy per acre of land is 1203kg and minimum support price for paddy in Jharkhand is Rs.1590 per quintal. Therefore, in an acre, the landowner will get Rs.19,128 as sale price for the yield. The damage to crop caused by a tower in 121 sq.m will result in loss of 36kg of paddy and the corresponding monetary loss will be Rs.572. In addition to this the landowner will get compensation for damages at 85 percent of the circle rate/guideline value for the tower base area.

11. The stringing and sagging is also likely to cause damage to the crop in an area of 300 sq.m (60m length and 5m wide) in every acre of land through which the transmission line passes through. Each kilometre of transmission line will pass through 17acres of land and therefore the 8.8km of transmission line will pass through 150 acres of land. This is likely to cause damage to crop in 45000 sq.m and the crop compensation would be about Rs.2,13,060. In addition, the landowner through whose land the transmission line passes through will be entitled for 15 percent of the circle rate/guideline value for diminution of land value for the right-of-way of 27m width for the 132kV transmission line.

12. The proposed compensation complies with ADB SPS (2009) SR 2 as JUSNL provides compensation for damages and diminution of land value over and above the crop compensation. The land owners would be able to cultivate the land under the tower after the construction of the tower is completed. More consultation will be conducted during the project implementation to minimize the impacts and social resistance.

13. The construction work is in progress in the Ranchi to Lohardaga section and these works had commenced before the social safeguards document could be prepared. However, all the sites, where the civil work is in progress, were inspected and found to be railway land free from encumbrance.

14. Consultations were held along the alignment of the proposed transmission line with the tribal households living in Jaipur village, Narkopi village and Kaimo village. Consultations were held with officials of CORE, JSUNL and National Commission for Scheduled Tribe, to understand the subproject component siting, process of identifying sites, the process of assessing and paying crop compensation and the process of safeguarding the interest of scheduled tribe households. Consultations were also held with residents along the transmission alignment, residents and traders along the railway corridor.

15. JUSNL will hold extensive consultations once the alignment is finalised and in particular with regard to transmission lines and associated tower construction. Village level meetings will be held as part of walk-over survey to explain to the people about the various provisions of assistance available to them. Further, schedule of work in any given stretch should be informed to the villagers to plan their cultivation activity and regular update about the progress of civil work should be also communicated. Locations where the towers are to be placed and the names of land owners eligible for the assistance should be made

available at the respective panchayat. Information about payment should be communicated to the land owners through village level meetings.

16. Recognising the social issues that can arise in infrastructure subprojects proposed under the Railway Sector Investment Program, Ministry of Railways, Government of India has prepared a Resettlement Framework (RF) and Indigenous Peoples Planning Framework in line with National and State Laws and Policies, and ADB Safeguards Policy Statement. The resettlement framework and indigenous peoples planning framework describe the principles and approach in avoiding, minimizing and mitigating adverse social impacts/indigenous peoples impacts as applicable, that may arise in implementing subprojects proposed under Railway Sector Investment Program and the same principles and policy framework will be applicable to Railway Electrification Project.

17. The subproject will not result in any permanent displacement, either physical or economic displacement. and involves loss of crop and trees in private land due to erection of transmission towers and related transmission lines. Temporary impacts on crops and trees are foreseen for which provisions for adequate compensation is made in the entitlement matrix which will be as per the current market rate for loss of crop and compensation for damages and diminution of land value. All the compensation will be disbursed prior to the start of the civil works. Further, whenever there is maintenance work required in the transmission line or tower, JUSNL will pay compensation for crop damage.

18. The resettlement cost estimate for this subproject includes compensation for crop and trees. The total resettlement cost for the subproject is INR 6.97 million. CORE will provide adequate budget for all crop compensation and ex-gratia assistance from the counterpart funding. The funds as estimated in the budget for the subproject and additional fund required based on revised estimates, shall be available at the disposal of JUSNL.

19. The affected person(s) / aggrieved party can raise their grievance verbally or in writing to the local site office of the sub-project. Grievances of affected person will first be brought to the attention of the site in charge, who can resolve the issue at the site level. If the matter is not solved within 7 days period by the site in charge, it will be brought to the Grievance Redress Committee (GRC) constituted for the purpose in Deputy Chief Engineer's (DCEE) office. This GRC shall discuss the issue in its monthly meeting and resolve the issues within one month of receiving the grievance.

20. GRC at DCEE office shall discuss the issue and try to resolve it and inform the site office accordingly. If the matter is not resolved by the GRC at DCEE level within one month the matter will be referred to the Chief Project Director (CPD), who will resolve the complaint within one month. Record of all grievances received including contact details of complainant, date of receiving the complaint, nature of grievance, agreed corrective actions and the date of resolution and outcome will be maintained at site office and office of the DCEE. Budgetary allocation has been made for the functioning of Grievance Redress Mechanism.

21. Since the transmission lines for both the TSS will be implemented by the JUSNL for CORE, any person (s) / aggrieved party can approach to the respective site offices of JUSNL (for both the transmission lines). The site in charge will resolve the complaint within a week. If the complaint is not resolved within a week, it will be referred to the SDO offices at Ranchi (for Miral Village to Piska TSS transmission line) and Lohardaga (for Lohardaga Substation to Lohardaga TSS Transmission line). The jurisdictional SDO offices will resolve the issue within a month. If the complainant is not satisfied, s/he may approach GRC at DCEE office and procedure as explained above will be followed to address the complaint.

22. The project is to be implemented by the Chief Project Director (CPD) office at Kolkata. The CPD is being assisted by the Deputy Chief Engineer Electrical (DCEE) and

Assistant Executive Engineer Electrical (AEE). The Senior Section Engineer (SSE) will be responsible for the day to day implementation of works for electrification in the subproject corridor and Sub Divisional Officers (SDO) of JUSNL at Ranchi for transmission line works related from Miral village Adda to Piska TSS and SDO of Lohardaga Division for transmission line related works from Lohardaga substation to Lohardaga TSS. The site in charge officers will be assisted by the officers of their departments in the project implementation. The SSE reports to AEE for any clarification and guidance for the project related works. For effective implementation of safeguard related components in the project, the CPD's office will designate an officer as safeguards officer.

I. PROJECT DESCRIPTION

A. Background

1. The Asian Development Bank (ADB) is considering financing the electrification of 5,208km of existing railways tracks spread across 29 sections in India. The finance will be provided to the Indian Railways Finance Corporation (IRFC), a fully owned and captive financing vehicle of the Ministry of Railways, Government of India. The Central Organisation for Railway Electrification (CORE), Power Grid Corporation of India, Rail India Technical and Economic Service Limited (RITES) and Rail Vikas Nigam limited (RVNL) will be the implementing agencies and responsible for carrying out electrification of the proposed network.

2. Electric railways offer substantially better energy efficiency, lower emissions and lower operating costs. Electric locomotives are also usually quieter, more powerful, and more responsive and reliable than diesels. For passenger operation it is possible to provide enough power with diesel engines, but, at higher speeds, this proves costly and impractical. Therefore, almost all high-speed trains are generally electric. The high power of electric locomotives also gives them the ability to pull freight at higher speed over gradients; in mixed traffic conditions this increases capacity when the time between trains can be decreased³.

B. Proposed Subproject Components

3. The subproject involves electrification of 111km length of the railway track between Ranchi Junction and Tori Junction. The subproject location map is given in Appendix-I. The subproject components include (i) erection of poles along the railway track to support overhead line suspended from poles; (ii) erection of overhead lines; (iii) erection of 3 numbers of Sectioning and Paralleling Post (SP); (iv) erection of 5 numbers of Sub Sectioning and Paralleling Post (SSP); (v) erection of 2 numbers of Traction Substation (TSS); (vi) erection of 2 bays each at Lohardaga Substation exclusively for this subproject; (vii) erection of 132kV transmission line from the High Tension (HT) Line Tower in Miral (Kake) Village to Traction substation near Piska Junction; and (viii) erection of 132kV transmission line from Lohardaga substation to Traction substation near Lohardaga Junction. The summary of subproject components is given in Table 1.

Table 1: Summary of Proposed Subproject Components

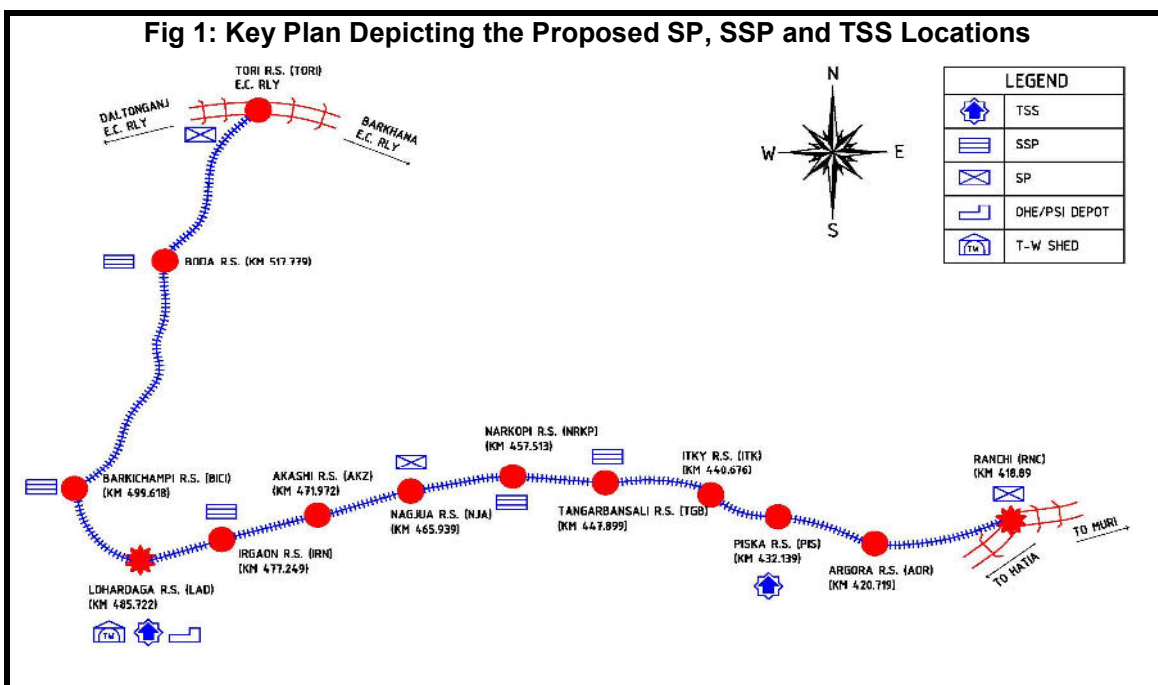
SNo	Subproject Components	Location	Component Description
1	Erection of poles	All along the 111km track and adjacent to the track at a distance of 2.9m from the centre of the track	About 2464 poles will be erected.
2	Erection of overhead lines	All along the 111km track	Overhead lines will be erected suspended from poles erected along the entire length.
3	Erection of Sectioning and Paralleling (SP) Post	Three numbers, one at km 419/520 near Ranchi Junction, second at km 467/400 near Nagjua Junction and the third at km 528/540 near Tori Junction	The SP will be erected in an area of 5.67m x 20.8m (5.67m perpendicular and 20.8m parallel to the track) and is erected at about 3.5-4.5m away from the edge of the track
4	Erection of Sub Sectioning and	Five numbers, one at km 448/100 near Tangrabansali	The SSPs will be erected in an area of 5.62m x 17.8m (5.62m

³ Source: Central Organization for Railway Electrification
(http://www.core.indianrailways.gov.in/view_section.jsp?lang=0&id=0,294,302,538)

SNo	Subproject Components	Location	Component Description
	Paralleling (SSP) Post	Junction, second at km 458/200 near Narkopi Station, third at km 478/000 near Irgaon Station, fourth at km 500/255 near Barkichampi Station and fifth at km 517/779 near Boda Station.	perpendicular and 17.8m parallel to the track) and is erected at about 3.5-4.5m away from the edge of the track.
5	Erection of Traction Substation (TSS)	Two TSS, one at km 432/400 near Piska Junction and second at km 484/900 near Lohardaga Junction	The TSS will be erected in an area of 45m x 85m (perpendicular x parallel) and is erected at about 3.5m to 4.5m away from the track.
6	Erection of Bays	Two bays in 132kV Lohardaga Substation	Two additional bays will be erected in Lohardaga substation
7	Transmission line - I	132kV transmission line from HT in Miral Village to TSS near Piska Junction	132kV transmission line will be erected for a length of 3.8km
8	Transmission line - II	132kV transmission line from Lohardaga Substation to TSS near Lohardaga Junction	132kV transmission line will be erected for a length of 5km

4. The subproject does not involve any land acquisition and there is no physical or economic displacement. Except the two 132kV transmission line which pass through private land requiring the erection of electricity towers (pylon) in private land, all other components are sited on railway (government) land free from encumbrance.

5. A key plan depicting the proposed locations of Sectioning and Paralleling (SP), Sub Sectioning and Paralleling (SSP) and Traction Sub Station (TSS) is presented below.



6. The electrification works between Ranchi and Lohardaga section is in progress and these works had commenced before the social safeguards document could be prepared.

However, all the sites, where the civil work is in progress, were inspected and found to be railway land free from encumbrance.

7. The description of each of the subproject components along with the details of their location is discussed in the following paragraphs.

Erection of poles

8. Poles would be erected all along the 111km length of the railway track on one side of the track with each pole erected at an interval of 49.5m and sometimes in the range of 27-49.5m depending on the need for additional poles at curves and level crossings. The poles will be erected at a distance of about 2.90m from the centre of the track and within the existing right-of-way, which ranges between 6-12m. Hence, all poles would be erected within the railway right-of-way that is free from any encumbrance. In all about 2464 poles is expected to be erected to support overhead line suspended from poles. Transect walks were undertaken along the route accompanied by Senior Section Engineer (SSE) of Ranchi and Site Engineer of the Contractor to confirm that the right-of-way is free from encumbrance for erecting the poles. The poles would be transported through flat wagons along the track.



Railway track section near Piska Junction - Erection of Pole Completed - Railway land free from encumbrance



Railway Yard used by Contractor to Store Poles and Material near Piska Junction - Railway land free from encumbrance



Railway track section near Narkopi Station - Pit for Erecting the Pole Completed - Railway right-of-way free from encumbrance



Flat wagon used for transporting the poles

Erection of Overhead Lines

9. Once the erection of poles is completed, the overhead lines will be erected suspended from poles by using wagons, designed for this purpose, that will move on the track transporting the poles and cables. At stations, where there are multiple tracks, the overhead lines are erected across the portal which is about minimum 3.3m wide. The overhead line is erected within the track and does not involve any impact to private assets.



Modified wagon used for erecting overhead lines



Representative picture of overhead lines erected on a pole in another corridor - Indicated by an arrow mark

Erection of Sectioning and Paralleling Post

10. Three Sectioning and Paralleling (SP) Post is proposed in this subproject, one at km 419/520 near Ranchi Junction, second one at km 467/400 near Nagjua Junction and the third at km 528/540 near Tori Junction. The SP requires an area of 5.67m x 20.8m and is erected at about 3.5-4.5m away from the edge of the track. The siting will be about 3.5-4.5m away from the edge of the track and the post area required is 5.67m perpendicular to the track and 20.8m parallel to the track. The location of SP is identified by the SSEs through a walkthrough survey in the particular location after ascertaining the availability of adequate right-of-way, suitability of land with no water logging and accessible from a nearby approach road. All the three SPs are proposed on railway right of way. The sites were inspected in the presence of SSE and the contractor's site engineer, who took measurements and established the availability of railway land (see pictures below). Of the 3-SPs, the foundation work has just begun for the SP near Ranchi Junction, the SP near Nagjua Junction is nearing completion and work is yet to commence for the 3rd SP near Tori. In both Ranchi and Nagjua, the SPs are being built within the railway right-of-way and on enquiry and verification it was ascertained that the railway land had been free from encumbrance prior to commencement of civil works.

11. The SP posts are situated approximately midway between feeding posts marking the demarcating point of two zones fed from different phases from adjacent sub-stations. At these posts, a neutral section is provided to make it impossible for the pantograph of an electric locomotive or EMU train to bridge the different phases of 25 kV supply, while passing from the zone fed from one sub-station to the next one. Since the neutral section remains 'dead', warning boards are provided in advance to warn and remind the Driver of an approaching electric locomotive/EMU to open locomotive circuit breaker (DJ) before approaching the 'neutral section', to coast through it and then switch 'on' on the other side.

Special care is taken in fixing the location of neutral sections, on level tangent tracks far away from signals, level crossing gates etc. to ensure that the train coasts through the neutral section at a sufficiently high speed, to obviate the possibility of its stopping and getting stuck within the neutral section⁴.



Railway Land - Location of SP near Ranchi Junction at km 419/520 - Work Commenced



Railway Land - Location of SP under near Nagjua Junction at km 467/400 - Under Construction - Railway Boundary Stone shown with a Red Colour Arrow Mark



Railway Land - Location of SP near Tori Junction at km 528/540

Erection of Sub Sectioning and Paralleling Post

12. Five Sub Sectioning and Paralleling Post (SSP) is proposed in this subproject, one at km 448/100 near Tangrabansali Junction, second at km 458/200 near Narkopi Station, third at km 478/000 near Irgaon Station, fourth at km 500/255 near Barkichampi Station and fifth at km 517/779 near Boda Station. The SSPs requires land measuring 5.62m x 17.8m and is sited at about 3.5-4.5m away from the edge of the track. The siting will be about 3.5-4.5m away from the edge of the track and the post area required is 5.67m perpendicular to the track and 17.8m parallel to the track. Similar to SPs, the location of SSP is identified by the SSEs through a walkthrough survey in the particular location after ascertaining the availability of adequate right-of-way, suitability of land with no water logging and accessible from a nearby approach road. All the five SSPs are proposed on railway right of way and are

⁴ Source: Indian Railways Manual of AC Traction Maintenance and Operation (Vol - I)

free from encumbrance. The sites were inspected in the presence of SSE and the contractor's site engineer, who took measurements and established the availability of railway land that were free from any encumbrance (see pictures below). The construction of SSP near Tangrabansali Junction and near Narkopi Station are in progress and it was ascertained through enquiry and verification that the railway land prior to construction was free from encumbrance. The site of SSP proposed near Boda Station could not be inspected as the approach to the station is by a 3-km walk through forest area and was advised by SSE that it is safer to visit this site by train, which could not be accomplished during the visit. The site will be inspected and status recorded during updation of this RP.

13. One or more SSPs are provided between each FP and adjacent SP depending upon the distance between them. In a double track section, normally three interrupters are provided at each SSP i.e. two connecting the adjacent sub-sectors of up and down tracks and one for paralleling the up and down tracks⁵.



Railway land - Location of SSP at km 448/100
near Tangrabansali Junction



Railway land - Location of SSP at km 458/200
near Narkopi Station



Railway Land - Location of SSP at km 478/000
near Irgaon Station



Railway Land - Location of SSP at km 500/255
near Barkichampi Station

Traction Substation

14. Two Traction Substations (TSS) have been proposed one at km 432/400 near Piska Junction and second at km 484/900 near Lohardaga Junction. The TSS requires land

⁵ Source: Indian Railways Manual of AC Traction Maintenance and Operation (Vol - I)

measuring 45m x 85m and is sited about 3.5m to 4.5m away from the track. Similar to SPs and SSPs, the location of TSS is identified by the SSEs through a walkthrough survey in the particular location after ascertaining the availability of adequate right-of-way, suitability of land with no water logging and accessible from a nearby approach road. Both the TSS have been proposed on railway land. The site was inspected in the presence of SSEs and the contractor's site engineer, who took measurements and established the availability of railway land.

15. 25 kV, ac, 50 Hz single phase power supply for electric traction is derived from the grid system of State Electricity Boards through traction sub-stations located along the route of the electrified sections at distances of 35 to 50 km apart. The distance between adjacent sub-stations may be even less depending on intensity of traffic and load of trains. The arrangement is that the supply authorities (JUSNL) supply power at 220/132/110/66 kV Extra High Voltage (EHV) at each traction sub-station which is owned, installed, operated and maintained by the Railway⁶.



Railway land - Location of TSS near Piska Junction at km 432/400



Railway land - Location of TSS near Lohardaga Junction at km 484/900 (Eastern side of the track)



Railway land - Location of Tower Wagon Building site near Lohardaga Junction at km 484/900 (Western side of the track)

⁶ Source: Indian Railways Manual of AC Traction Maintenance and Operation (Vol - I)

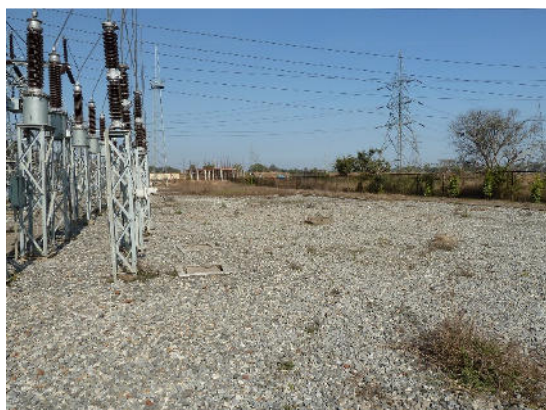
Bay at Substation

16. It has been proposed to add 2 additional bays in the 132kV Lohardaga substation to feed the Lohardaga TSS and the land for the 2-bays is available within the campus of the substation free from any encumbrance and belongs to Jharkhand Urja Sancharan Nigam Limited (JUSNL).

17. The transmission line to feed the Piska TSS is proposed to be drawn from the existing HT tower located in Miral village.

18. Both these components will be executed by JUSNL and the cost will be borne by CORE.

19. A bay of a substation is a part of a substation containing extra-high (or high) voltage switching devices and connections of a power line, a power transformer, etc., to the substation bus bar system(s) as well as protection, control, and measurement devices for the power line, the power transformer, etc.



Site for proposed additional bay - Within Lohardaga Substation Land belonging to JUSNL



HT Feeder Tower located in Miral Village - Proposed Point from where 132kV Transmission Line is to be drawn to Piska TSS

132 kV transmission line

20. The subproject will involve erection of two 132kV transmission lines, one from HT tower in Miral village to Traction substation near Piska Junction for a length of 3.8km and another from Lohardaga substation to Traction substation near Lohardaga Junction for a length of 5km.

21. While the actual distance between the HT tower at Miral village and the Piska TSS location and the Lohardaga substation and the Lohardaga TSS location are less, the length of the proposed transmission lines are longer as they take a circuitous route to avoid habitations.

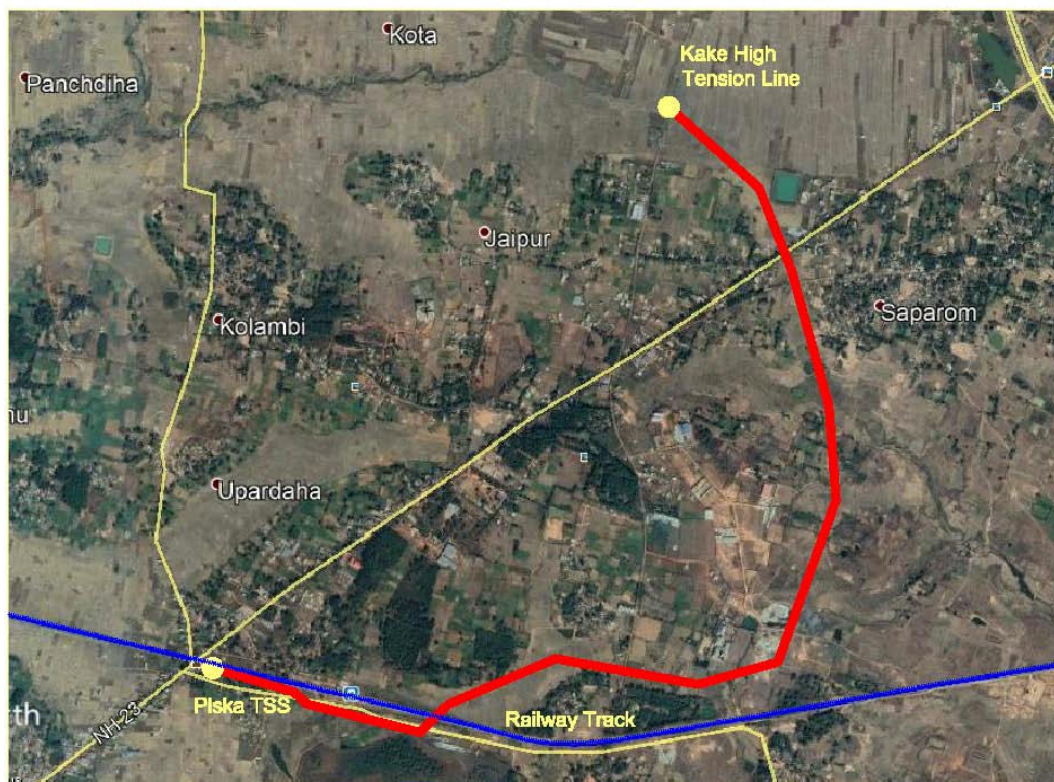
22. Based on the request of CORE, JUSNL had carried out a walkover survey or transact walk to identify the alignment that does not involve any habitation and have prepared the tentative alignment which passes through open land and the alignment would be further adjusted during execution. The cost estimate for erection of these transmission lines have been prepared by JUSNL and submitted to CORE and upon receipt of payment, tender process for the execution of the work will be initiated by JUSNL.

23. The 8.8km transmission lines will traverse through private agricultural fields and cross the highway and the 132kV transmission towers will be erected in private land.



24. A Google Earth map depicting the proposed transmission line alignment from the HT Tower in Miral village to the Piska TSS is presented below.

Fig-2: Google Earth Map Depicting the Proposed Transmission Line Alignment - Miral HT Tower to Piska TSS



25. A Google Earth map depicting the proposed transmission line alignment from the Lohardaga substation to the Lohardaga TSS is presented below.

Fig-3: Google Earth Map Depicting the Proposed Transmission Line Alignment - Lohardaga SS to Lohardaga TSS



C. Subproject Impacts

26. The subproject does not involve any land acquisition and there is no physical or economic displacement.

27. The subproject involves erections of poles, overhead lines, sectioning and paralleling posts, sub sectioning and paralleling posts, traction substation, bays in substation and laying of transmission lines. The electrification is expected to improve the services by reducing the delays and increasing the frequency of operation. The intervention will benefit the public in this region who are primarily dependant on railways for commuting as other modes of public transport are poor.

28. However, the subproject will require use of private land for erection of transmission towers and will cause damage to crop during erection of transmission lines resulting in negative impacts to some people having land along the corridor of transmission line. The summary of subproject impact is given in Table 2.

Table 2: Summary of Subproject Impacts

Subproject Components	Component Description	IR Impacts
Erection of poles	About 2464 poles will be erected.	No IR impacts as the poles are to be erected within the right-of-way
Erection of overhead lines	Overhead lines will be erected	No IR impacts as the overhead

Subproject Components	Component Description	IR Impacts
	suspended from poles erected along the entire length.	lines are to be erected above the railway track and well within the right-of-way
Erection of Sectioning and Paralleling (SP) Post	The SP will be erected in an area of 5.67m x 20.8m (5.67m perpendicular and 20.8m parallel to the track) and is erected at about 3.5-4.5m away from the edge of the track	No IR impacts in erection of the SPs as the 354 sq.m of land required for the 3-SPs is within the right-of-way of the railways
Erection of Sub Sectioning and Paralleling (SSP) Post	The SSPs will be erected in an area of 5.62m x 17.8m (5.62m perpendicular and 17.8m parallel to the track) and is erected at about 3.5-4.5m away from the edge of the track.	No IR impacts as the 505 sq.m of land required for the 5-SSPs are available within the right-of-way of the railways
Erection of Traction Substation (TSS)	The TSS will be erected in an area of 45m x 85m (45m perpendicular and 85m parallel to the track) and is erected at about 3.5m to 4.5m away from the track.	No IR impacts in the TSS proposed as the 7650 sq.m of land required for the 2-TSSs are available within the right-of-way of the railways
Erection of Bays	Two additional bays will be erected.	No IR impacts, as the 2-bays are proposed within the campus of Lohardaga substation. The land belongs to JUSNL
Transmission line	132kV transmission line will be erected for a length of 8.8km	Will involve temporary damages to crop of about 62-landowners in about 2.64ha due to erection of the transmission line and potential loss of crop in about 3267 sq.m due to the erection of 62-towers

** The alignment of transmission line has been tentatively fixed avoiding settlement areas and the exact alignment would be known only during execution.*

29. The erection of 2 bays within the 132kV Lohardaga substation, and the erections of 8.8km of transmission line comprising of 3.8km transmission line from HT tower in Miral village to Piska TSS and 5km transmission line from Lohardaga SS to Lohardaga TSS will be executed by Jharkhand Urja Sancharan Nigam Limited (JUSNL) and the cost will be borne by CORE.

30. The private land used for erection of transmission towers is not acquired by the Jharkhand Urja Sancharan Nigam Limited (JUSNL) and instead the ownership of the land on which towers are erected continues to vest with the landowners. As per current State government notification, JUSNL makes payment to the land owner in line with Ministry of Power, Government of India guidelines⁷ for damages to crops during erection of the tower and associated lines. JUSNL invokes the provision of Sec 164 of the Electricity Act, 2003 read with Sec 10 to Sec 19 of the Indian Telegraph Act, 1885 to undertake such works.

31. The State has recently in December 2017 has through a notification has adopted the Ministry of Power, Government of India guidelines on payment of compensation for damages and diminution of land value. In addition to this the State will for crop compensation which is determined prior to execution of work through a joint survey and assessment of the crop damages by JUSNL, Revenue, local Panchayat and the contractor. As per the guidelines issued in October 2015 by Ministry of Power, Government of India, the landowner on whose

⁷ Guidelines for payment of compensation towards damages in regard to Right of Way for transmission lines dated 15 October 2015 and adopted by Govt of Jharkhand by notification dated 13 December 2017

land the tower is erected is entitled to 85 percent of the guideline value as per the Stamp Act towards the tower base area as compensation, and for the corridor through which the transmission line passes, at 15 percent of the guideline value as per the Stamp Act for the right-of-way corridor of the transmission line towards diminution of land value.

D. Impact to Indigenous People / Scheduled Tribe

32. The subproject transmission lines pass through villages inhabited by tribal households. Further, six of the blocks in the subproject area come under the Schedule Area⁸. Consultations were held with the schedule tribe community in villages along the route of the transmission lines and the subproject area viz. Jaipur, Narkopi and Kaimo villages.

33. The proposed subproject components are sited on railway land and as such the subproject does not involve any land acquisition and there is no physical or economic displacement. Hence, there will be no land acquisition from any Scheduled Tribe household and no Scheduled Tribe household will face physical or economic displacement.

34. However, the transmission lines will pass through private land and will cause temporary impact to crops. In addition to the crop compensation that would be paid to the land owners in whose land transmission lines are erected, the Scheduled Tribe households amongst them would be entitled for vulnerable assistance⁹.

35. It is estimated that about 27 numbers of 132kV transmission tower will be erected and the stringing and sagging will involve 150 acres¹⁰ of land through which the transmission line is expected to traverse. The average landholding holding size is 1.65ha or say 4 acres in Jharkhand State and the population of ST in the scheduled blocks of the subproject area ranges between 35 to 66 percent. The 150 acres through which the transmission line will traverse through would involve about 38 landowners (150 acres divided by 4 acres, the average landholding) and assuming that 66 percent of the landowners (the highest population of ST in any block) are ST, the subproject will have to provide vulnerable assistance to 25 Scheduled Tribe households. Necessary budgetary provisions have been made for paying vulnerable assistance.

36. Therefore, this subproject is not expected to cause physical, economical or cultural impacts on the ST households living in the subproject area and the erection of transmission tower and transmission line are not large in scale or significant in terms of impacts to affect the socio-cultural practices of STs.

⁸ The criteria followed for declaring an area as Scheduled Area are (a) preponderance of tribal population; (b) compactness and reasonable size of the area; (c) under-developed nature of the area; and (d) marked disparity in economic standard of the people. These criteria are not spelt out in the Constitution of India but have become well established. They embody principles followed in declaring 'Excluded and 'Partially-Excluded Areas under the Government of India Act 1935, Schedule 'B of recommendations of the Excluded and Partially Excluded Areas Sub Committee of Constituent Assembly and the Scheduled Areas and Scheduled Tribes Commission 1961 (Source: <http://pesadarpan.gov.in/>)

⁹ In line with the provisions contained in the EM of RSIP

¹⁰ One acre is of about 60m x 68m and in 1km length, an average of 17 acres will be covered. Hence, for 8.8km, the transmission line will cover about 149.6 acres or say 150 acres. Therefore, stringing and sagging will be involved in 150 acres. The stringing and sagging is also likely to cause damage to the crop in an area of 300 sq.m (60m length and 5m wide) in every acre of land through which the transmission line passes through. This is likely to cause damage to crop in 45000 sq.m (150 acres x 300 sqm per acre).

E. Minimizing Involuntary Resettlement Impacts

37. Measures were taken by CORE to avoid adverse involuntary resettlement impacts by identifying suitable land within the right-of-way for siting SPs, SSPs and TSS. Further, though erection of towers and drawing transmission lines is executed as a turnkey contract, JUSNL officials undertook transect walks and assessed various alignment options to minimise involuntary resettlement impacts and avoided settlement area in arriving at the tentative alignment.

F. Scope and Objective of Resettlement Plan

38. The objective of this Resettlement Plan (RP) is to assist the affected people to improve or at least restore their living standards to the pre-project level. This RP captures the involuntary resettlement impacts arising out of the proposed electrification of the Ranchi to Tori section of railway corridor. The document describes the magnitude of impact, mitigation measures proposed, method of valuation of crop damaged, eligibility criteria for availing benefits, entitlements, the institutional arrangement for delivering the entitlements and mechanism for resolving grievances and monitoring. The RP is consistent with the agreed Resettlement Framework of Railway Sector Investment Program¹¹.

II. SOCIOECONOMIC INFORMATION AND PROFILE

A. General Profile

39. The subproject traversing through Ranchi, Lohardaga and Latehar districts in the state of Jharkhand.

40. According to the census data of 2011, the total population of the Ranchi district is 2914253 of which 56.9% are in rural and 43.1% are in urban areas. Decadal growth rate of 24 per cent has been recorded in the district during 2001-2011 period. The rural population in the district have increased by 18.21 percent while the urban population growth over the decade has been as much as 32.55 percent. The sex ratio in the district and State are equal 949 in 2011. In the rural areas of the district, the sex ratio is high at 971 while it is only 921 in urban areas. The density of population is 572 persons per sq km as compared to 414 persons per sq km in the state.

41. The district of Lohardaga is one of the smallest districts of Jharkhand State. As per 2011 census the population is 461,790, comprising of 232,629 male and 229,161 female. Decadal growth rate of 26.68 percent has been recorded in the district during 2001-2011 period. The population density in the district is 307 persons per sq km. Proportion of rural and urban population are 87.6 (rural) and 12.4 (urban). Among the C.D. Blocks, Lohardaga has shown the highest increase in population over the decade with 21.91 percent.

42. The total population of the Latehar district is 7,26,978, comprising of 3,69,666 male and 3,57,312 female. The population density in the district is 169 persons per sq km. Proportion of rural and urban population is 92.87 (rural) and 7.13 (urban). Decadal growth rate of 29.61 percent has been recorded in the district during 2001-2011 period. Among the C.D. Blocks highest increase in population is observed in Latehar (34.88%) and in Chandwa (30.33%).

43. According to the census 2011, Kanke CD block of Ranchi district has the highest concentration of 103 inhabited villages and most populated with population of 2.16 lakh along the sub project section. It is observed that Kairo CD block is having the highest sex

¹¹<https://www.adb.org/sites/default/files/linked-documents/36330-013-ind-rfab.pdf>

ratio 1017 which is much higher than the state sex ratio 949. Except CD block Kanke in Ranchi District that has a lower sex ratio of 940, all other CD blocks of the sub project area are having higher sex ratio than the State sex ratio. The number of villages and rural population of the subproject blocks are given in the table below.

Table 31: Demographic profile of the blocks of the Sub Project

SNo	CD Blocks	Total number of inhabited villages	Total rural population			Sex Ratio
			Persons	Males	Females	
1	Kanke	103	2,16,930	1,11,800	1,05,130	940
2	Nagri	44	65,252	32,905	32,347	983
3	Mandar	69	1,28,585	65,134	63,451	974
4	Bero	84	1,13,090	57,311	55,779	973
5	Itki	30	50,058	25,234	24,824	984
6	Kisko	52	54,959	27,692	27,267	985
7	Kairo	26	37,867	18,773	19,094	1017
8	Lohardaga	38	68,598	34,484	34,114	989
9	Bhandra	45	57,303	28,754	28,549	993
10	Chandwa	83	89,664	45,380	44,284	976

Source: Census of India, 2011

44. According the 2011 census there are SC and ST in all the three districts. Highest concentration of SC population 21.66% is in Latehar District and lowest 3.22% in the Lohardaga District.

45. The Lohardaga district has highest concentration of ST population (61.45%) amongst the three districts. The Oraon, Lohra and Munda caste are the dominant STs in the district. The SC and ST population in the Districts through which subproject rail line passes is given in the table below.

Table 4: SC and ST population of the Subproject CD Blocks

SNo	District	Total Population	Total scheduled castes population	Total Scheduled Tribe population	Percentage of SC population to total population	Percentage of ST population to total population
1	Ranchi	16,56,918	84,270	7,89,838	5.09	47.67
2	Lohardaga	4,04,379	13,035	2,48,472	3.22	61.45
3	Latehar	6,75,120	1,46,213	3,24,023	21.66	47.99

Source: Census of India, 2011

46. The scheduled caste population is highest in Chandwa CD block (26.7%), followed by Kanke CD block (3.75%) and the lowest is in Mandar CD block (1.28%).

47. The scheduled tribe population in all the CD blocks are very high. Highest in Lohardaga CD block (66%), followed by Bhandra CD block (63.93%) and lowest is in Kanke CD block (34.73%). The SC and ST population in the CD Blocks through which sub project section passes through is given in the table below.

Table 5: SC and ST population of the Subproject CD Blocks

SNo	Name of CD Block	Total Population	Total scheduled castes population	Percentage of SC population to total population	Total Scheduled Tribe population	Percentage of ST population to total population
1	Kanke	2,16,930	8140	3.75	75,343	34.73
2	Nagri	65,252	1477	2.26	35,321	54.13
3	Mandar	1,28,585	1649	1.28	77,143	59.99
4	Bero	1,13,090	2226	1.97	69,959	61.86
5	Itki	50,058	680	1.36	24,241	48.43
6	Kisko	54,959	1663	3.03	33,559	61.06
7	Kairo	37,867	726	1.92	23,585	62.28
8	Lohardaga	68,598	1764	2.57	45,277	66.00
9	Bhandra	57,303	979	1.71	36,633	63.93
10	Chandwa	89,664	23,937	26.7	40,895	45.61

Source: Census of India, 2011

B. Scheduled Tribe in the Subproject Area

48. The interest of the scheduled tribes in India, with regard to land and other social issues, are protected through various provisions enshrined in the Fifth Schedule and the Sixth Schedule of the Constitution. The scheduled tribes who live the Scheduled Area of the State of Jharkhand, more defined in the Fifth Schedule under Article 244(1) of Constitution read with The Scheduled Areas (States of Chhattisgarh, Jharkhand and Madhya Pradesh) Order, 2003 are to be protected against exploitation and assisted in promoting and protecting their social, educational, economic and cultural interests.

49. The Indigenous Peoples Planning Framework of the Railway Sector Investment Program seeks to ensure that indigenous people and tribal communities are informed, consulted, and mobilized to participate in the subproject preparation. The Framework is intended to guide selection and preparation of additional subprojects under the Project where impacts on tribal people are identified to ensure better distribution of the Project benefits and promote development of the indigenous peoples in the Project areas and is in compliance with ADB's *Safeguard Policy Statement*, 2009 (SPS).

50. Six of the blocks in the subproject area come under the Schedule Area and they are Kanke and Mandar Blocks of Ranchi District, Kisko, Lohardaga and Bhandra Blocks of Lohardaga District and Chandwa Block of Latehar District. The population distribution of scheduled tribe in Jharkhand and the PTGs amongst them is given in Appendix-II.

51. The six scheduled blocks account for 6.4 percent of the scheduled tribe population in the state. The literacy rate amongst the ST in the State is 47 percent and except Chandwa block (45%), all other blocks have higher literacy rate. The literacy rate in Kanke block (68%) is the highest among the six scheduled blocks.

Table 6: Literacy of ST Population in Sub Project Area

State / District / Sub Project Block	Population ST			Literate		
	Total	Male	Female	Total	Male	Female
Jharkhand State	8,645,042	4,315,407	4,329,635	4,101,010	2,435,530	1,665,480
Ranchi District	1,042,016	520,582	521,434	606,377	344,777	261,600
Kanke	298,304	147,957	150,347	203,143	109,405	93,738
Mandar	77,143	38,531	38,612	43,543	24,564	18,979
Lohardaga District	262,734	130,814	131,920	137,111	79,181	57,930
Kisko	33,559	16,851	16,708	17,209	10,118	7,091
Lohardaga	59,539	29,534	30,005	35,195	19,402	15,793
Bhandra	36,633	18,198	18,435	18,295	10,521	7,774
Latehar District	331,096	166,427	164,669	153,168	91,040	62,128
Chandwa	44,223	22,191	22,032	19,827	11,730	8,097

Source: Census of India, 2011

52. The worker participation rate amongst STs in Jharkhand is 47 percent and main workers account for 46 percent and marginal workers account for 54 percent. Of the six scheduled blocks, the worker participation is lower than the State average in 3-blocks, viz. Kanke (35.4%), Lohardaga (43.9%) and Chandwa (45.6%) and is higher in the other 3-blocks.

Table 7: Worker Categories of ST Population in Sub Project Area

State / District / Sub Project Block	Worker		Main Worker		Marginal Worker	
	Population	Percentage	Population	Percentage	Population	Percentage
Jharkhand State	4,058,020	46.9	1,874,577	46.2	2,183,443	53.8
Ranchi District	463,569	44.5	273,836	59.1	189,733	40.9
Kanke	105,679	35.4	76,058	72.0	29,621	28.0
Mandar	37,919	49.2	19,696	51.9	18,223	48.1
Lohardaga District	134,056	51.0	59,830	44.6	74,226	55.4
Kisko	18,094	53.9	5,986	33.1	12,108	66.9
Lohardaga	26,164	43.9	13,003	49.7	13,161	50.3
Bhandra	20,644	56.4	9,649	46.7	10,995	53.3
Latehar District	150,031	45.3	52,544	35.0	97,487	65.0
Chandwa	20,182	45.6	7,416	36.7	12,766	63.3

Source: Census of India, 2011

53. The dominant PTGs in the project area are Munda tribe and Oraon tribe. The Oraon tribe in the project area account for 52.4 percent of the total Oraon tribe in the State and similarly the Munda tribe account for 26.7 percent of the total Munda tribe in the State.

Table 8: Project Area ST Population by Caste

State / District	Munda Tribe Population			Oraon Tribe Population		
	Total	Male	Female	Total	Male	Female
Jharkhand State	1,229,221	614,199	615,022	1,716,618	855,210	861,408
Ranchi District	300,210	150,220	149,990	530,287	263,458	266,829
Lohardaga District	9,824	4,894	4,930	208,967	103,691	105,276
Latehar District	18,826	9,442	9,384	159,408	79,635	79,773

Source: Census of India, 2011

54. The literacy level in Jharkhand State is 55.6 percent and amongst the STs in the State is 47.4 percent. However, the dominant tribe in the subproject area have a higher literacy level than their counterpart in the State and in particular Oraon tribe with a literacy rate of 56.4 percent fares better than the State average. Interestingly the worker participation rate amongst the tribal is higher than the State average and so is that of the 2-dominant tribe in the subproject area. The Munda with 61.9 percent cultivators amongst the main workers and Oraon tribe with 57.0 percent cultivators amongst main workers, are significantly higher than the cultivators amongst main workers in the State (29.4%).

Table 9 State Population vs ST population & Caste Population

Characteristics	Jharkhand State		Jharkhand State ST		Munda Tribe		Oraon Tribe	
	Population	%	Population	%	Population	%	Population	%
Literate	18,328,069	55.6	4,101,010	47.4	644,976	52.5	968,132	56.4
Worker	13,098,274	39.7	4,058,020	46.9	589,735	48.0	779,699	45.4
Main Worker	6,818,595	52.1	1,874,577	46.2	313,817	53.2	415,263	53.3
Cultivator	2,001,362	29.4	921,334	49.1	194,112	61.9	236,754	57.0
Agricultural Labourer	1,238,774	18.2	422,286	22.5	49,475	15.8	65,572	15.8
Marginal Worker	6,279,679	47.9	2,183,443	53.8	275,918	46.8	364,436	46.7
Total	32,988,134		8,645,042	26.2	1,229,221	14.2	1,716,618	19.9

Source: Census of India, 2011

III. SCOPE OF LAND ACQUISITION AND RESETTLEMENT

A. Land acquisition and involuntary resettlement

55. The proposed subproject involves erection of poles along the railway track to support overhead line suspended from poles, erection of overhead lines, erection of 3 numbers of Sectioning and Paralleling Post (SP), erection of 5 numbers of Sub Sectioning and Paralleling Post (SSP), erection of two Traction Substation (TSS), erection of 2 bays at Lohardaga substation exclusively for this subproject, erection of 132kV transmission line from HT Tower in Miral village to Traction substation near Piska Junction and erection of 132kV transmission line from Lohardaga substation to Traction substation near Lohardaga Junction.

56. The subproject does not involve any land acquisition and there is no physical or economic displacement.

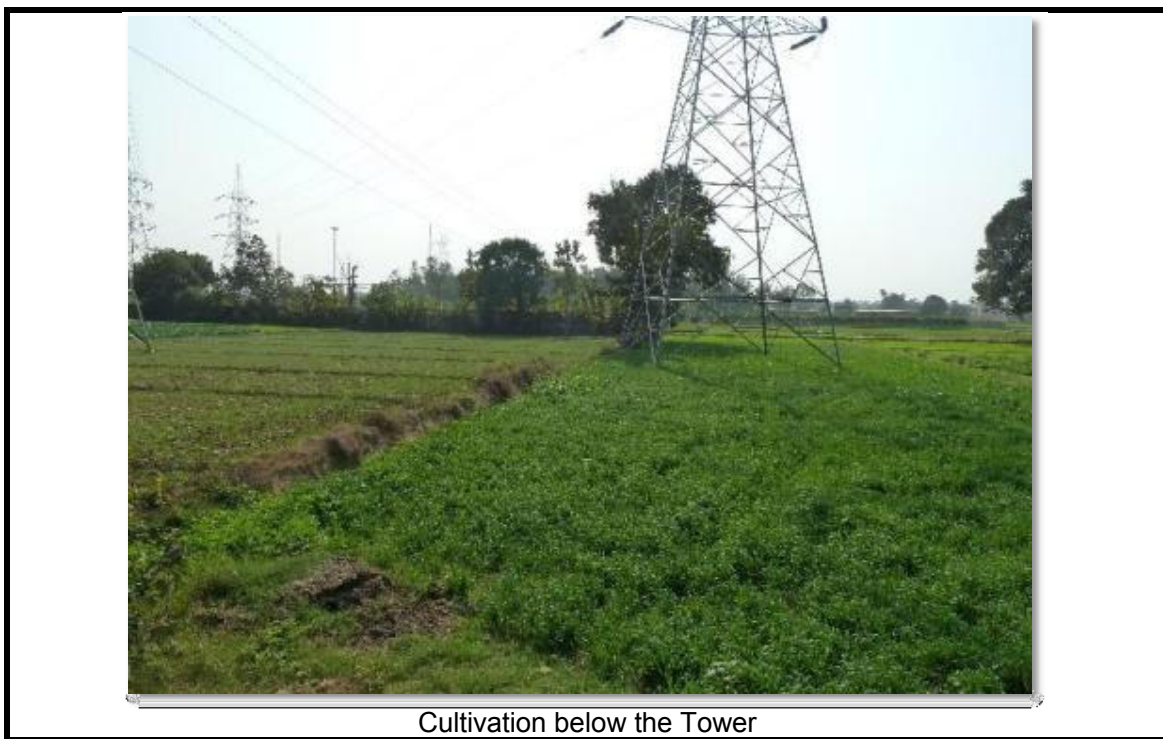
57. The erection of subproject's poles, overhead lines, sectioning and paralleling post, sub sectioning and paralleling post and traction substations will not involve any land acquisition; all these components have been proposed in railway land. The substation bays will also not involve any land acquisition and has been proposed in government land. All the subproject component sites were inspected as part of the social screening undertaken in December 2017 to ascertain the status of land and it was found that all sites were free from encumbrance. There were no informal users, squatters or encroachers in any of the sites.

58. JUSNL defines the alignment of transmission line and location of towers on the basis of a transect walk¹². The local community and a representative of the local body is present during the transect walk. Impacts to crops during erection of the transmission towers and lines are assessed and mitigated through compensation paid for loss of crop, as determined by the revenue authority, in consultation with the land owner. Further, in addition to crop compensation, JUSNL will pay compensation for damages for the tower base area and diminution of land value for the right-of-way corridor of transmission line in accordance with the MoP, GoI guidelines, which has been notified by the State in December 2017. JUSNL has made budgetary provision for potential crop damage during construction, and related compensation.

59. The subproject involves laying of two separate transmission lines, one for a length of 3.8km and another for 5km and these being 132 kV lines, the area required for each transmission tower will be between 36sq.m to 121sq.m depending on the type of tower¹³. The span of transmission towers is about 350m, which varies according to the angle. In the 8.8km length of transmission lines proposed, it is estimated that about 27 towers will be required to be erected, with an area of about 36 sq.m to 121 sq.m each; and assuming that all towers erected are D-type, the total land required is 3267 sq.m or say 0.33ha. However, the actual area of land to be used by the 4 footings of a tower would be about 4 to 5 sq.m (1sq.m is required to set up a foundation of one footing). The land owners would be able to cultivate the land under the tower after the construction of the tower is completed. A sample photograph taken of a 132kV tower footing in another subproject area is given below to show that cultivation is possible.

¹²Walk over survey- The walk over survey or transect walk is conducted by JUSNL for alternate alignments. The walk over survey is done while defining the alignment for transmission line. In the process of walk over survey a team of people comprising JUSNL engineers, surveyors, panchayat representative, and villagers/residents undertake a transect walk along with the topographical sheet and define the alignment avoiding village settlements, structures, CPRs, forest area etc. This participatory alignment defining process helps avoid and minimize involuntary resettlement to the extent possible. This also helps minimize resistance, as the alignment is defined in a participatory basis involving concerned stakeholders.

¹³For a normal tower of 28m height, the tower base of A-type tower will be 6mx6m, B-type tower will be 8mx8m, C-type tower will be 9mx9m and D-type tower will be 11mx11m.



60. The status of these lands will be known only when the civil works are awarded as the erection of towers and drawing of transmission lines is awarded as a turnkey contract and the exact alignment will be known only at the time of implementation of civil works. As per current State government notification, JUSNL will make payment to the land owner in line with Ministry of Power, Government of India guidelines¹⁴ for damages to crops during erection of the tower and associated lines. JUSNL invokes the provision of Sec 164 of the Electricity Act, 2003 read with Sec 10 to Sec 19 of the Indian Telegraph Act, 1885 to undertake such works.

B. Damages to Crop

61. The subproject involves laying of two separate transmission lines, one for a length of 3.8km and another for 5km and these being 132kV lines, the area required for each transmission tower will be between 36sq.m to 121sq.m depending on the type of tower¹⁵. The span of transmission towers is about 350m, which varies according to the angle. In the 8.8km length of transmission lines proposed, it is estimated that about 27 towers will be required to be erected, with an area of about 36 sq.m to 121 sq.m each; and assuming that all towers erected are D-type, the total land required is 3267 sq.m or say 0.33ha. However, the actual area of land to be used by the 4 footings of a tower would be about 4 to 5 sq.m (1sq.m is required to set up a foundation of one footing). The land owners would be able to cultivate the land under the tower after the construction of the tower is completed.

62. The erection of tower will result in damage to crop, for a maximum area of 121 sq.m and towards this JUSNL will pay compensation for damages at 85 percent of the circle rate/guideline value for the tower base area and will also be paying crop compensation for crop damaged due to erection of each tower. Further, diminution of land value at 15 percent

¹⁴ Guidelines for payment of compensation towards damages in regard to Right of Way for transmission lines dated 15 October 2015 and adopted by Govt of Jharkhand by notification dated 13 December 2017

¹⁵For a normal tower of 28m height, the tower base of A-type tower will be 6mx6m, B-type tower will be 8mx8m, C-type tower will be 9mx9m and D-type tower will be 11mx11m.

of the right-of-way corridor will be paid for the width of the right-of way corridor of the transmission line and will also be paying compensation for crop compensation for crop damaged in stringing and sagging.

63. The yield of paddy per acre of land is 1203kg¹⁶ and minimum support price for paddy in Jharkhand is Rs.1590 per quintal. Therefore, in an acre, the landowner will get Rs.19,128 as sale price for the yield. The damage to crop caused by a tower in 121 sq.m will result in loss of 36kg of paddy and the corresponding monetary loss will be Rs.572. In addition to this the landowner will get compensation for damages at 85 percent of the circle rate/guideline value for the tower base area.

64. The stringing and sagging is also likely to cause damage to the crop in an area of 300 sq.m (60m length and 5m wide) in every acre of land through which the transmission line passes through. Each kilometre of transmission line will pass through 17acres of land and therefore the 8.8km of transmission line will pass through 150 acres of land. This is likely to cause damage to crop in 45000 sq.m and the crop compensation would be about Rs.2,13,060. In addition, the landowner through whose land the transmission line passes through will be entitled for 15 percent of the circle rate/guideline value for diminution of land value for the right-of-way of 27m width for the 132kV transmission line.

65. The proposed compensation complies with ADB SPS (2009) SR 2 as JUSNL provides compensation for damages and diminution of land value over and above the crop compensation. The land owners would be able to cultivate the land under the tower after the construction of the tower is completed. More consultation will be conducted during the project implementation to minimize the impacts and social resistance.

C. Impact to Structures

66. The subproject does not cause any impact to structures

IV. CONSULTATION, PARTICIPATION AND DISCLOSURE

A. Public Consultation

67. In order to engage with the community and enhance public understanding about the subproject and understand the views of the people pertaining to laying of transmission towers and lines, focus group discussions (FGD) were undertaken amongst the people living enroute and near the transmission line. The opinions of the stakeholders and their perceptions were obtained during these consultations. The consultations with the stakeholders will continue throughout the RP implementation period. The dates of consultations and stakeholders consulted are summarized below.

Table 10: Stakeholder Consulted and Dates of consultations

SNo	Stakeholders Consulted	Dates of Consultations
1	CORE officials at Ranchi	26- 30 December 2017
2	Jharkhand Urja Sanchar Nigam Ltd.	26 and 28 December 2017
3	Principal Chief Conservator of Forest, Jharkhand	29 December 2017
4	Residents of Jajpur Village (near CH 433)	27 December 2017
5	Residents of Narkopi Town (near CH 459+000)	27 December 2017

¹⁶ Source: State Agricultural Management & Extension Training Institute Sameti, Jharkhand (2016-17)

SNo	Stakeholders Consulted	Dates of Consultations
5	Jajpur villagers (Transmission line route) near Piska TSS transmission line Route	28 December 2017
6	Kaimo Village (Near 132 kV substation Lohardaga and CH 488+000)	28 December 2017
7	Principal Chief Conservator of Forest, Jharkhand	29 December 2017
8	National Commission for Schedule Tribe	29 December 2017
9	Tribal Welfare Commission, Government of Jharkhand	29 December 2017

CORE = Central Organization for Rail Electrification, JUSNL= Jharkhand Urja Sanchar Nigam Ltd. TSS= Traction substation

B. Outcome of the Consultations

68. Consultations were held along the alignment of the proposed transmission line with the tribal households living in Jaipur village, Narkopi village and Kaimo village. The consultation photographs are given in Appendix-III.

69. Consultations were held with officials of CORE and Jharkhand Urja Sanchar Nigam Limited (JUSNL) to understand the subproject component siting, process of identifying sites and the process of assessing and paying crop compensation. Consultations were also held with residents along the transmission alignment, residents and traders along the railway corridor. The people were informed about the proposed subproject and the benefits of electrification of the Ranchi to Tori railway corridor. The people were also informed about the mitigation measures proposed while laying the transmission line such as: (i) how the proposed tentative alignment will be finalised in consultation with the villagers, elected local body representatives and revenue officials; (ii) how the alignment will avoid settlements and minimise use of private land and efforts taken to take the transmission line as far as possible in government waste land; and (iii) how compensation for crop will be paid. The salient points are summarised in the following table and the consultation photographs are given in Appendix-3.

Table 11: Summary of Consultation Outcome

Concerns and Issues	Response
Meeting at Jaipur Village on 28.12.2017- Participants 15	
The participants informed that no land or crop is damaged till date	They were told about the procedure that would be adopted in compensation for crop damage, if any
The participants wanted preference in employment to locals	The participants were asked to contact the SSE and through him they could explore employment opportunities with the contractor
Participants suggested that transmission line should not impact trees and works may be taken up during summer when there are no crops in the fields.	The CORE official with the consultants informed them that the works will be taken up mostly only after harvest
The participants enquired about compensation payment for crop damage	The social expert replied that payment for crop damage will be as per prevailing policies of Government of Jharkhand
Participant wanted to know the start date for erecting the transmission line	JSUNL official replied that tenders are to be invited and work will commence in 4-months time
Meeting at Narkopi Village 27.12.2017- Participants 21	
The participants wanted increase in the service	The consultants replied that after electrification works, frequency may be increased.
The female participants complained of large crowd in train and is difficult to travel	The consultants replied that after electrification works, frequency may be increased.
Meeting at Kaimo Village 28.12.2017- Participants 13	

Concerns and Issues	Response
The participants enquired about route of transmission substation from 132 kV substation at Lohardaga to TSS location near Lohardaga railway station	The consultants replied that route is being finalized by the JUSNL, but length of the alignment is about 5 km
The participants enquired when electrification work will start	The consultants replied that work has already been awarded and the work is in progress in Ranchi- Lohardaga section; and in Lohardaga-Tori section it will start shortly
The participants asked about the location of various components	Were informed that all land required are railway land

70. Consultations were held with the Assistant Director of the National Commission for Scheduled Tribe. The subproject activities were explained and the likelihood of land belonging to tribal household being used for erecting transmission towers and resultant damage to crop and trees due to erection of transmission towers and transmission lines was discussed. The proposed measures to assess and pay compensation to crop damage by JUSNL was also discussed in detail. The Assistant Director explained that there are no specific guidelines pertaining to use of tribal land for such activity. However, advised to submit the complete list of landowners in whose land transmission towers will be erected and the list of landowners for whom compensation for crop is proposed to be paid for damages to crop caused by transmission towers and transmission line. The entire list of affected persons would help the commission in assessing if they belong to tribal household or not and also ensure that if there any compliant from tribal household of non-payment or under payment, the commission would be in a better position to deal with such issues.

71. Discussions were held with the official of Tribal Welfare Commission, Government of Jharkhand. The subproject activities were explained and the likelihood of land belonging to tribal household being used for erecting transmission towers and resultant damage to crop and trees due to erection of transmission towers and transmission lines was discussed. The officials explained that they were not aware of specific guidelines on this issue.

C. Plan for Continued Consultation

72. JUSNL will hold extensive consultations once the alignment is finalised and in particular with regard to transmission lines and associated tower construction. Village level meetings will be held as part of walk-over survey to explain to the people about the various provisions of assistance available to them. Further, schedule of work in any given stretch should be informed to the villagers to plan their cultivation activity and regular update about the progress of civil work should be also communicated. Locations where the towers are to be placed and the names of land owners eligible for the assistance should be made available at the respective panchayat. Information about payment should be communicated to the land owners through village level meetings.

73. A provisional sum for public consultations is included in the Resettlement Plan costs; public consultation and awareness generation will be key to smooth execution of the project. A record of key issues discussed and outcomes of meetings and consultations will be maintained by JUSNL and closely monitored by the Safeguards Officer in CPDs office, who will play a significant role in consensus building and grievance redressal.

D. Disclosure

74. Information will be disseminated to DPs at various stages. Information including details of compensation for crop damage, grievance procedures, timing of payments and civil work schedule will be disclosed by the SSE in-charge of the subproject to the DPs. The Resettlement Planning document will be disclosed in ADB website.

V. POLICY AND LEGAL FRAMEWORK

A. Background

75. Recognising the social issues that can arise in infrastructure subprojects proposed under the Railway Sector Investment Program, Ministry of Railways, Government of India has prepared a Resettlement Framework (RF) and Indigenous Peoples Planning Framework (IPPF) in line with National and State Laws and Policies, and ADB Safeguards Policy Statement. The resettlement framework and indigenous peoples planning framework describe the principles and approach in avoiding, minimizing and mitigating adverse social impacts/indigenous peoples impacts as applicable, that may arise in implementing subprojects proposed under Railway Sector Investment Program and the same principles and policy framework will be applicable to Railway Electrification Project.

B. National Legislations, Policies and ADB Policy

76. The policy framework and entitlements for the program are based on: The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013, The Indian Telegraph Act, 1885, The Indian Electricity Act, 2003, State laws and regulations and ADB's Safeguard Policy Statement (SPS), 2009.

1. Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act (RFCTLARR), 2013

77. The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (RFCTLARR) Act, 2013, provides for a transparent process and just and fair compensation to the affected families whose land is acquired or proposed to be acquired or are affected by such acquisition and provides for rehabilitation and resettlement of the affected families. The basic principle of the RFCTLARR Act is to ensure that the cumulative outcome of compulsory land acquisition should be such that, the affected persons become partners in development, leading to an improvement in the standard of living after acquisition. This act came into effect on January 01, 2014 and the Land Acquisition Act, 1894 stands repealed. The salient provisions of RFCTLARR Act is discussed below.

78. The RFCTLARR Act applies to acquisition of land for a public purpose, as defined in the act. The act provides for consultation with and involvement of local self government in undertaking a Social Impact Assessment (SIA). The SIA is reviewed by an Expert Group to assess if the potential benefits of the project outweigh the social cost and adverse social impacts. The expert group can recommend either for or against proceeding with the project. The appropriate government is not bound by the decision of the expert group and can decide otherwise.

79. The act prohibits acquisition of multi crop land for any project, however on exceptional cases allows acquisition of multi crop land, wherein the State specific threshold of acquiring such land is not exceeded and equivalent waste land is developed for agricultural purpose.

80. The competent authority while determining the market value of the land has to consider the higher value of the land arrived at by 3-methods of valuation viz: (i) market value as per Indian Stamp Act, 1899 for the registration of sale deed or agreements to sell, in the area where land is situated; or (ii) average sale price for similar type of land, situated in the nearest village or nearest vicinity area, ascertained from the highest 50% of sale deeds of the preceding 3 years; or (iii) consented amount paid for PPPs or private companies. In case of rural areas, the market value of land so determined is multiplied by a factor, to be decided by the appropriate government. A solatium of 100% is payable on the

market value of land multiplied by the factor and all immovable properties or assets, trees and plants.

81. A Resettlement and Rehabilitation award detailing the entitlements to be provided as per the Second Schedule of Act is passed by the competent authority. Possession of land can be taken only after payment of compensation and rehabilitation and resettlement entitlements as detailed in Second Schedule and Third Schedule. The detail of amenities to be provided in a resettlement site is detailed in the Third Schedule.

82. In the context of railway electrification projects, the RFCTLARR Act is applicable in cases where land acquisition leading to transfer of ownership from private owner to government/PPP projects is involved. It is applicable if a land parcel (e.g. for a substation or power plant) needs to be acquired from a private party. In case no acquisition/transfer of ownership is involved (e.g. for construction of transmission towers/lines), state government policy related to compensation payment for land on which transmission towers are proposed, holds good.

2. Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (Removal of Difficulties) Order, 2015

83. In order to expedite land acquisition for infrastructure projects, the government promulgated an ordinance in December 2014, amending certain provisions in the RFCTLARR Act, 2013. Since the ordinance was to lapse, the second ordinance was promulgated in May 2015, wherein infrastructure projects were exempted from (i) the provisions of SIA; and (ii) the bar on acquisition of multi crop land. Further, through the ordinance, the determination of compensation as per the First Schedule, rehabilitation and resettlement provisions contained in the Second Schedule and infrastructure amenities to be provided in resettlement sites as per the Third Schedule, became applicable to the exempted acts in the Fourth Schedule with effect from January 01, 2015. Since this second ordinance also was to lapse and the replacement bill relating to the RFCTLARR (Amendment) Ordinance has been referred to the Joint Committee of the Houses (Parliament) for examination, this order dated August 28, 2015 has been passed wherein the provisions of the RFCTLARR Act, relating to the determination of compensation in accordance with the First Schedule, rehabilitation and resettlement in accordance with the Second Schedule and infrastructure amenities in accordance with the Third Schedule shall apply to all cases of land acquisition under the enactments specified in the Fourth Schedule to the said Act with effect from September 01, 2015. Further, the exemption of SIA and acquisition of multi crop land for infrastructure projects has been done away with.

3. The Indian Telegraph Act, 1885 (Central Act 13 of 1885)

84. The act provides for erection of transmission towers and draw transmission lines in or upon any immovable property and the maintenance of the same.

- (i) Sec 10 of the act defines powers of the telegraph authority¹⁷ to erect and maintain telegraph lines and posts.
- (ii) Sec 10 (b) vests the telegraph authority no right on the land other than that of user only in the property under, over, along, across in or upon which the telegraph authority places any telegraph line or post on the land in which telegraph lines and posts are laid.
- (iii) Sec 10 (c) bars use property vested in or under the control or management of any local authority, without the permission of the local authority.
- (iv) Sec 10 (d) provides for efforts to be taken to minimise damage to the property and payment of full compensation to all persons interested for any damage sustained

¹⁷To be read along with Section 164 of India Electricity Act, 2003

while erecting and maintaining telegraph lines and posts. This provision does not apply to property belonging to local body and it is governed by Sec 12 of the act.

- (v) Sec 16 (1) provides for intervention by District Collector / Magistrate empowering the telegraph authority to exercise his right to erect and maintain telegraph lines and posts when there is resistance from the property owner.
- (vi) Sec 16 (3) empowers the District Judge to determine the compensation paid for damages if any dispute arises on the same.
- (vii) Sec 16 (4) provides for remitting the compensation for damages in the Court of District Judge, when there is a dispute on person entitled to receive the compensation and / or apportionment.

4. The Indian Electricity Act, 2003 (Central Act 36 of 2003)

85. The act consolidates the laws relating to generation, transmission, distribution, trading and use of electricity and for matters connected therewith or incidental thereto.

- (i) Sec 164 empowers the appropriate Government to confer on any Authority or person engaged in the business of supplying electricity under the Act, any of the powers which the Telegraph Authority possesses under the Telegraph Act with respect to the placing of telephonic lines or posts for the purpose of a telephone established or maintained by the Government or to be so established or maintained

5. Guidelines for payment of compensation towards damages in regard to Right of Way for transmission lines, 2015

86. Ministry of Power, Government of India issued a circular to all States on the approach to be adopted in determining compensation for diminution of land value due to erection of transmission towers and associated lines and this circular was more of an advisory to the States. The Government of Jharkhand has given effect to the guideline through a notification dated 13 December 2017.

87. As per the circular, the landowner on whose land the tower is erected is entitled for 85 percent of the guideline value as per the Stamp Act towards the tower base area as compensation and for the corridor through which the transmission line passes through, a 15 percent of the guideline value as per the Stamp Act towards the width of the right-of-way corridor of the transmission line as diminution of land value.

6. ADB's Safeguard Policy Statement (SPS), 2009

88. ADBs Safeguard Policy Statement (SPS) 2009 describes the policy objective, its scope and triggers and principles of (i) environmental safeguards; (ii) involuntary resettlement safeguards; and (iii) indigenous people's safeguards. The objectives of involuntary resettlement safeguards are: (i) avoid involuntary resettlement where possible; (ii) if avoidance is not possible, minimize involuntary resettlement by exploring project and design alternatives; (iii) enhance, or at least restore, the livelihoods of all displaced persons in real terms relative to pre-project levels; and (iv) improve the standards of living of the displaced poor and other vulnerable groups.

89. The involuntary resettlement safeguards policy covers physical displacement (relocation, loss of residential land, or loss of shelter) and economic displacement (loss of land, assets, access to assets, income sources, or means of livelihoods) as a result of; (i) involuntary acquisition of land, or (ii) involuntary restrictions on land use or on access to legally designated parks and protected areas. It covers them whether such losses and involuntary restrictions are full or partial, permanent or temporary.

90. The three important elements of involuntary resettlement safeguards are: (i) compensation at replacement cost for lost assets, livelihood, and income prior to

displacement; (ii) assistance for relocation, including provision of relocation sites with appropriate facilities and services; and (iii) assistance for rehabilitation to enhance, or at least restore, the livelihoods of all displaced persons relative to pre-project levels and to improve the standard of living of displaced poor and other vulnerable groups.

C. Comparison of Government and ADB Policies

91. The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 recognises titleholders and non-titleholders affected by land acquisition.

92. The key difference between the Government and ADB's involuntary resettlement safeguards policy is with regard to the cut-off date for determining the eligibility for compensation and R&R assistance to all those who are affected by the project irrespective of the ownership title to the land. As per the provisions of RFCTLARR Act, the cut-off-date for title holders is the date of SIA notification [Sec 4(2)] and for non-titleholders affected by the acquisition of such land, they should have been living/working three years or more prior to the acquisition of the land. Hence, to bring the RF of the Railway Sector Investment Program in line with ADB's requirements, the RF mandates that in the case of land acquisition, the date of issue of notification will be treated as the cut-off date for title holders, and for non-titleholders such as squatters and encroachers, whom the act does not recognise, the cut-off date will be the start date of the subproject DMS. In case of all affected non-title holders, suitable compensation for loss of assets and R&R assistance is proposed in the entitlement matrix.

93. A significant development in Government statute is the notification of 'The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013', which has repealed the Land Acquisition Act of 1894 (as amended in 1984). This Act would both complement the revision of the NRRP (2007) and decrease significantly the gaps between the LA Act 1894 and ADB's SPS. In particular, the Act would require social impact assessments for projects involving land acquisition. The Act also expands compensation coverage to include the value of structure, trees, plants, or standing crops damaged; and provides for solatium at 100 percent of all amounts inclusive. Furthermore, the Act meets ADB's requirement of all compensation to be paid prior to project taking possession of any land and provision of R&R support including subsistence grant and transportation cost.

VI. ENTITLEMENTS, ASSISTANCE AND BENEFITS

A. Introduction

94. According to ADB SPS 2009 in the context of involuntary resettlement, affected persons (APs) are those who are physically relocated i.e., loss of residential land, or shelter and/or economically displaced (loss of productive land, structures, assets, access to assets, income sources, or means of livelihood). The absence of formal and legal title to the land does not bar the affected person from receipt of compensation and resettlement assistance from the project.

95. Detailed Measurement Surveys (DMS) and Inventory of Loss Surveys will be conducted for transmission line alignment, once the detailed design is finalized and the exact alignment is known. The anticipated types of losses due to the proposed sub-project components comprises of loss of trees and crops to landowners along the proposed 8.8 km long transmission alignment due to erection of tower and transmission line. Once the alignment is finalized, DMS and Census Surveys will help quantify each type of loss and affected person category.

96. Cut-off Date: Eligibility for compensation will be the date of start of the DMS prior to commencement of erection of transmission line. The date of DMS survey will serve as the cut-off date for eligibility for assistance.

B. Entitlements

97. The entitlement matrix (Table 6) summarizes the types of possible losses and corresponding entitlements in accordance with ADB and government policies, based on the principle of replacement cost. In addition to the estimated impacts, the entitlement matrix safeguards unforeseen impacts.

98. In accordance with the IR principles adopted for Railway Sector Investment Program (RSIP), the affected landowners will be entitled for compensation for the loss of land, crops/trees at their replacement cost

99. The Entitlement Matrix of RSIP, that summarizes the types of losses and the corresponding nature and scope of entitlements; is in compliance with National/State Laws and ADB SPS and the same is adopted for this subproject. The following entitlement matrix presents the entitlements corresponding to the tenure status of the DPs in this subproject.

Table 12: Entitlement Matrix

SNo	Type of Loss	Application	Definition of DPs	Entitlements	Details
LOSS OF TREES AND CROPS					
1	Loss of trees, crops, perennials	Standing crops, trees on the corridor of impact	Owners and Beneficiaries of land	▪ Compensation at market value	(a) Compensation to be paid by DC at the rate estimated by (i) the Forest Department for timber trees; (ii) State Agriculture Extension Department for crops; and (iii) Horticulture Department for perennial trees (b) Cash compensation at market value determined as per (a) above to titleholder and non-title households including informal settlers/squatters for loss of trees, crops and perennial (c) 60 days advance notice to DPs to harvest fruits, standing crops, and remove trees
2	Any loss to vulnerable groups	Vulnerable households affected on the corridor of impact	Vulnerable households including households headed by women, BPL, SC, ST, landless and disabled and elderly	▪ Additional Assistance to Vulnerable groups	Assistance in the form of grant will be paid to those below the poverty line and the vulnerable including households headed by women, landless, disabled and the elderly at the rate of Rs.10,000 per eligible households.

C. Compensation Mechanism

100. The principle for determining valuation and compensation for assets, incomes, and livelihoods is replacing the loss of affected assets and restoring the loss of income experienced by the displaced persons. Titleholders and non-titleholders are both entitled to compensation at replacement cost as per the agreed RF of RSIP.

101. Crop compensation will be paid to the entitled DPs prior to commencement of civil works. The length of the transmission line being only 8.8km, it is expected that the civil works would be completed in 1-agricultural season. However, in the event of the civil works getting extended beyond 1-season, crop compensation would be assessed and paid accordingly.

VII. INCOME RESTORATION AND RELOCATION

102. The subproject will not result in any permanent displacement, either physical or economic displacement. However, the subproject involves loss of crop and trees in private land due to erection of transmission towers and related transmission lines. Temporary impacts on crops and trees are foreseen for which provisions for adequate compensation is made in the entitlement matrix which will be as per the current market rate for loss of crop. All the compensation will be disbursed prior to the start of the civil works. Further, whenever there is maintenance work required in the transmission line or tower, JUSNL will pay compensation for crop damage.

VIII. RESETTLEMENT BUDGET AND FINANCING PLAN

A. Introduction

103. The resettlement cost estimate for this subproject includes compensation for crop and trees. The total resettlement cost for the subproject is INR 6.97 million. The major heads of budget items are listed below.

B. Compensation

Use of Private Land, Without Transfer of Title

104. The ownership of the land used for erecting towers will continue to vest with the land owner and land owner can continue to use the area below the tower, excluding the 4-tower footing. As per the recent notification of the Government of Jharkhand, compensation for damages to land will be paid at 85 percent of circle/guideline rate for the tower base area and for stringing and sagging, 15 percent of circle/guideline rate for the width of the right-of-way corridor as diminution of land value and the width for a 132kV transmission line has been defined as 27m.

105. Further, compensation for damage to trees and crops during erection of transmission towers and transmission line will be paid, as explained below. JUSNL will pay compensation for damages and crop compensation for each transmission tower erected on private land. Compensation towards diminution of land value in the width of right-of-way corridor due to laying of transmission line and related crop compensation will also be paid. All the compensation will be disbursed prior to the start of the civil works. Further, whenever there is maintenance work required in the transmission line or tower, JUSNL will pay compensation to the land owner for crop damage.

Compensation for Trees and Crops

106. Loss of timber trees will be compensated at their replacement cost assessed by Forest department, fruit bearing trees in consultation with the Agriculture or Horticulture Department as the case may be. Compensation for crops will be assessed jointly with the revenue officials and paid. The compensation will be paid fully and DPs will have the opportunity to harvest crops/trees within 1-month from the date of payment of compensation. Trees standing on the land owned by the government will be disposed of through prevailing practice by the concerned Revenue Department/ Forest Department.

Disbursement of Compensation and Assurances

107. In order to ensure that: (i) the DP need not make frequent visits to his/her bank for depositing the physical paper instruments; (ii) s/he need not apprehend loss of instrument and fraudulent encashment; and (iii) the delay in realisation of proceeds after receipt of paper instrument is obviated, all disbursement of compensation for crop and trees shall be done only through Electronic Clearing Service (ECS) mechanism and charges for ECS, if any, will be borne by the project. If the DPs destination branch does not have the facility to receive ECS (Credit), then the disbursement shall be done through respective lead banks' IFSC (Indian Financial System Code). Payment through account payee cheques will be made wherever required and no cash payment will be made.

C. Source of Funding and Fund Flow

108. CORE will provide adequate budget for compensation for damages, compensation for diminution of land value and crop compensation from the counterpart funding. The funds as estimated in the budget for the subproject and additional fund required based on revised estimates, shall be available at the disposal of JUSNL.

D. Budget Estimates

109. The resettlement cost estimate for this subproject includes compensation for damages, compensation for diminution of land value and compensation for crop and trees, cost of RP updation, consultation, awareness generation and grievance redress costs, and a provisional sum for additional assistance, if required. The total resettlement cost for the subproject is INR 6.97 million.

Table 13: Resettlement Cost Estimate

Item No	Item	Input Unit	Quantity	Rate	Amount
1	Compensation for damages for tower base area	Sq.m	3,267	102	3,33,234
2	Diminution of land value for width of right-of-way corridor for 8.8km	Sq.m	2,37,600	18	42,76,800
3	Compensation for crop damage payable to transmission tower	Number of Towers	27	572	15,444
4	Compensation for crop damage due to stringing and sagging	Quintal	134	1590	2,13,060
5	Consultation, awareness generation, grievance redress	LS			6,00,000
6	RP updation (DMS, Inventory of Loss and Socio-economic Survey)	LS			4,00,000
7	Additional assistance to vulnerable households	LS	25	10,000	2,50,000
8	Provisional sum	LS			5,00,000
Sub Total					65,88,538

Item No	Item	Input Unit	Quantity	Rate	Amount
				Contingency @ 10%	6,58,854
				Total	72,47,392
				Total in Million INR	7.25

Notes and Assumptions to Costing

110. The span between the transmission towers is 350m and in 1km there will be about 3-towers. Hence, for a length of 8.8km transmission line, 27 towers (3 towers per km x 8.8km) will be required. The rate for tower base area has been computed as 85 percent of the circle/guideline (85% of Rs.120 per sq.m) value multiplied by 121sqm being the tower base area for a D-type 132kV tower (D-Type tower = 121 sq.m x 27 towers in 8.8km = 3267 sqm).

111. The transmission line is for 8.8km and for 132kV transmission line, the guideline stipulates a 27m width to be considered for computing diminution of land value. Therefore, for 8.8km, the land area for which diminution of land value payable is 2,37,600 sq.m (8.8km x 1000m x 27m). The rate for diminution of land value has been computed as 15 percent of the circle/guideline value (15% of Rs.120 per sqm).

112. The yield of paddy per acre of land is 1203kg¹⁸ and minimum support price for paddy in Jharkhand is Rs.1590 per quintal. Therefore, in an acre, the landowner will get Rs.19,128 as sale price for the yield. The damage to crop caused by a tower in 121 sq.m will result in loss of 36kg of paddy and the corresponding monetary loss will be Rs.572.

113. One acre is of about 60m x 68m and in 1km length, an average of 17 acres will be covered. Hence, for 8.8km, the transmission line will cover about 149.6 acres or say 150 acres. Therefore, stringing and sagging will be involved in 150 acres. The stringing and sagging is also likely to cause damage to the crop in an area of 300 sq.m (60m length and 5m wide) in every acre of land through which the transmission line passes through. This is likely to cause damage to crop in 45000 sq.m (150 acres x 300 sqm per acre) and the crop compensation would be about Rs.2,13,060 (yield in 45000 sqm = 13379.88 kg or say 134 quintal). Crop compensation has been computed for 1-season as the length of the transmission line is less and in the event of the civil works spilling over beyond 1-season, then adequate compensation to be paid accordingly.

114. Additional vulnerable assistance is provided to 25 ST households. The average landholding holding size is 1.65ha or say 4 acres in Jharkhand State and the population of ST in the scheduled blocks of the subproject area ranges between 35 to 66 percent. The 150 acres through which the transmission line will traverse through would involve about 38 landowners (150 acres divided by 4 acres, the average landholding) and assuming that 66 percent of the landowners (the highest population of ST in any block) are ST, the subproject will have to provide vulnerable assistance to 25 Scheduled Tribe households.

IX. GRIEVANCE REDRESSAL MECHANISM

A. Common Grievance Redress Mechanism

115. Project grievance redress mechanism will be established to evaluate, and facilitate the resolution of APs' concerns, complaints, and grievances related to social and environmental issues of the project. The GRM will aim to provide a time-bound and

¹⁸ Source: State Agricultural Management & Extension Training Institute Sameti, Jharkhand (2016-17)

transparent mechanism to voice and resolve social and environmental concerns linked to the project.

116. The affected person(s) / aggrieved party can raise their grievance verbally or in writing to the local site office of the sub-project. Grievances of affected person will first be brought to the attention of the site in charge, who can resolve the issue at the site level. If the matter is not resolved within 7 days period by the site in charge, it will be brought to the Grievance Redress Committee (GRC) constituted for the purpose in Deputy Chief Engineer's (DCEE) office. This GRC shall discuss the issue in its monthly meeting and resolve the issue within one month of receiving the grievance.

117. GRC at DCEE office shall discuss the issue and try to resolve it and inform the site office accordingly. If the matter is not resolved by the GRC at DCEE level within one month, the matter will be referred to the Chief Project Director (CPD), who will resolve the complaint within one month. Record of all grievances received including contact details of complainant, date of receiving the complaint, nature of grievance, agreed corrective actions and the date of resolution and outcome will be maintained at site office and office of the DCEE. The grievance redress process is shown in Figure-3 below. The cost for functioning of Grievance Redress Mechanism will be accounted for in project cost as part of DCEE functioning.

118. Since the transmission lines for both the TSS will be implemented by the JUSNL for CORE, any person (s) / aggrieved party can approach to the respective site offices of JUSNL (for both the transmission lines). The site in charge will resolve the complaint within a week. If the complaint is not resolved within a week, it will be sent to the SDO offices at Ranchi (for Miral Village to Piska TSS transmission line) and Lohardaga (for Lohardaga Substation to Lohardaga TSS Transmission line). The jurisdictional SDO offices will resolve the issue within a month. If the complainant is not satisfied, s/he may approach GRC at DCEE office and procedure as explained above will be followed to address the complaint.

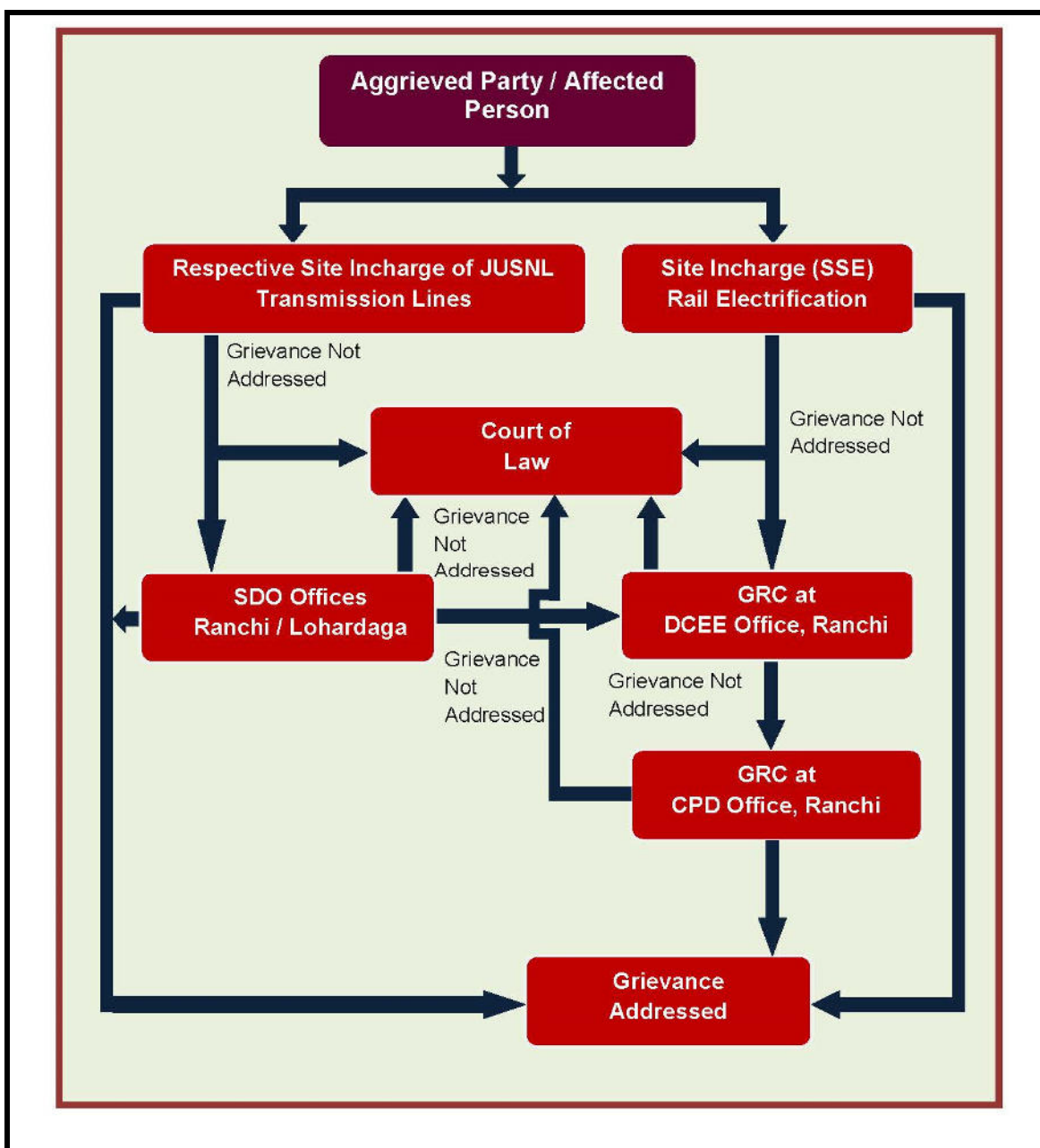
119. In addition to the subproject level grievance redressal mechanism, all stakeholders will have access to ADB's Accountability Mechanism.

B. DCEE Level Grievance Redress Committee (GRC- DCEE)

120. This committee will comprise of DCEE, SSE and one officer from contractor team. The GRC- DCEE will be headed by DCEE. It will meet at least once a month. The agenda of the meeting will be circulated to all the members and the affected persons/aggrieved party along with venue, date and time at least a week prior to the meeting.

121. This GRC at CPD office will be headed by the CPD, JUSNL Executive Engineer (Ranchi), and senior representative of the contractor. This committee will also meet once in a month. The aggrieved party / person(s) can approach the court of law any time with or without filing complaints at SSE or JUSNL site office and / or CPD office.

Figure 4: Grievance Redress Mechanism



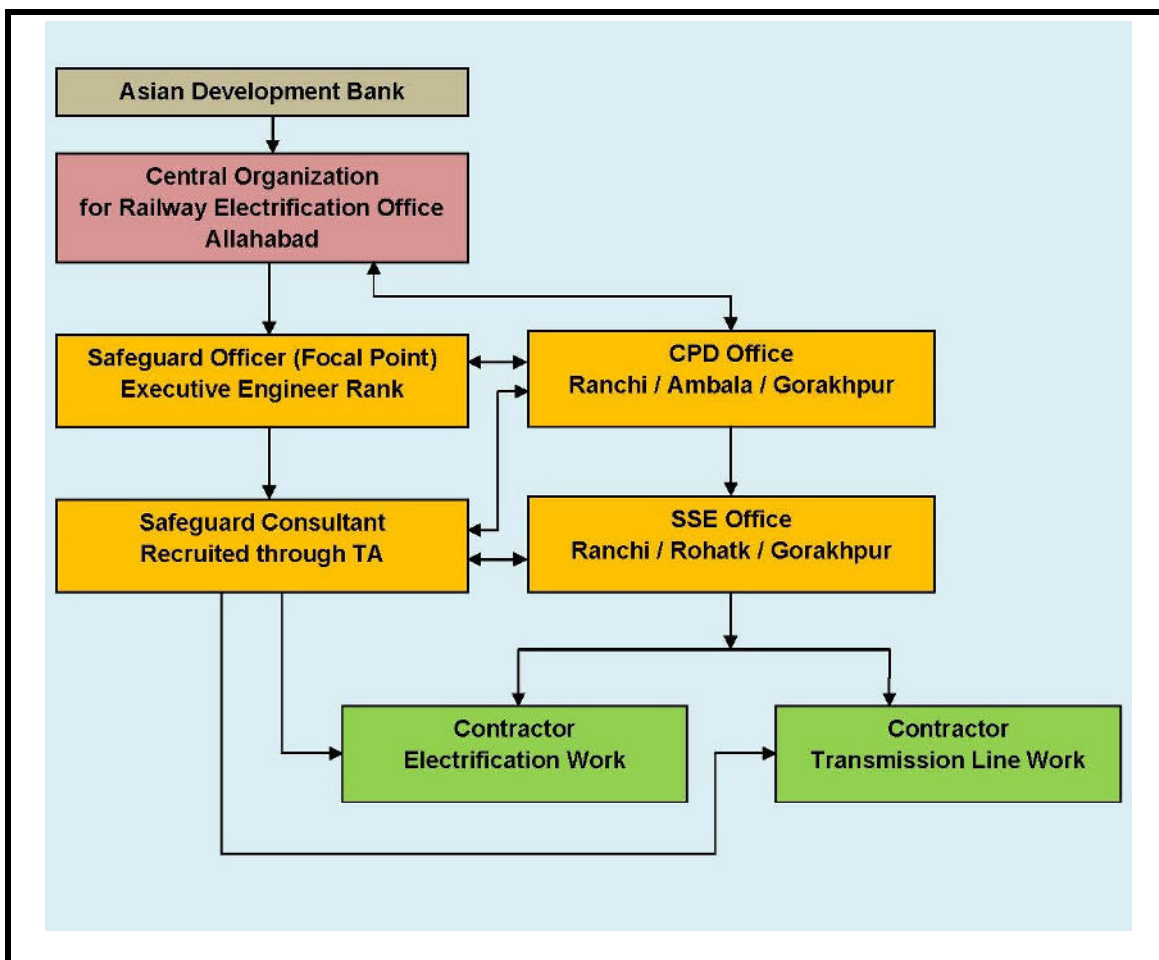
DCEE = Deputy Chief Engineer Electrical, CPD = Chief Project Director, GRC= Grievance Redress Committee, JUSNL = Jharkhand Urja Sancharan Nigam Limited, SDO = Sub-Divisional Officer

X. INSTITUTIONAL ARRANGEMENT AND IMPLEMENTATION

122. The project is to be implemented by the Chief Project Director (CPD) office at Kolkata. The CPD is being assisted by the Deputy Chief Engineer Electrical (DCEE) and Assistant Executive Engineer Electrical (AEE). The Senior Section Engineer (SSE) will be responsible for the day to day implementation of electrification related works and Sub Divisional Officers (SDO) of JUSNL at Ranchi for transmission line related works from Miral village Adda to Piska TSS and SDO of Lohardaga Division for transmission line related works from Lohardaga substation to Lohardaga TSS. The site in charges will be assisted by the officers of their departments in the project implementation. The SSE reports to AEE for

any clarification and guidance for the project related works. For effective implementation of safeguard related components in the project, the CPD's office will designate an officer as safeguards officer.

Figure-5: Project implementation arrangement for safeguard compliances



123. The Safeguards Officer in the CPDs office with assistance from JUSNL Officer will
- update resettlement plan in accordance with RSIP RF, ADB's Safeguards Policy Statement (SPS, 2009) based on final detailed designs and submit to ADB for review, final approval, and disclosure;
 - monitor payment of compensation for damages, diminution of land value, crop and tree compensation to all affected landowners prior to erection of the transmission towers and related transmission lines;
 - conduct internal monitoring and assist the external monitor in external monitoring of the resettlement process to ensure smooth implementation;
 - prepare monthly and semi-annual monitoring reports;
 - address escalated grievances through the GRM in a timely manner, and taking quick corrective actions where necessary to facilitate the redressal of grievances; and
 - engage in ongoing meaningful consultations with stakeholders and affected persons;

XI. IMPLEMENTATION SCHEDULE

A. Introduction

124. Implementation of RP mainly consists of compensation for damages, diminution of land value and compensation to be paid for crop and tree damage for use of private land for erecting transmission towers and transmission lines. Public consultation and grievance redressal will be an ongoing process throughout the RP implementation period.

B. Schedule for Project Implementation

125. The proposed RP implementation activities are divided into three broad phases viz. project preparation phase, RP implementation phase, and monitoring and reporting phase, and the activities envisaged in each phase is discussed below.

126. Project Preparation Phase: The activities to be performed in this phase include: (i) designating an officer as safeguards officer; (ii) submission of RP to ADB for approval; and (iii) establishment of GRC. The information dissemination and stakeholder consultations will commence once the turnkey contractor is selected and continue through the implementation.

127. RP Implementation Phase: In this phase, key activities will be carried out including: (i) walkover survey; (ii) valuation of crops/trees; (iii) preparation of list of landowners and amount payable as compensation for damages, diminution of land value and for crop compensation; (iv) approval for funds; (v) payment to landowners; and (v) issuing site clearance certificate to enable commencement of civil works.

128. Monitoring and Reporting Phase: Internal monitoring will commence as soon as RP implementation begins and continue till end of RP implementation.

C. RP Implementation Schedule

129. An implementation schedule for payment of compensation for damages, diminution of land value, crop and tree compensation including various sub tasks and time line matching with civil work schedule is provided in the work plan.

Table 14: RP Implementation - Time Frame

Tasks	Feb 2018	Mar 2018	Apr 2018	May 2018	Jun 2018	Jul 2018	Aug 2018	Sep 2018
Approval of RP and Disclosure								
GRC formation								
Award of Turkey Contract								
Walkover Survey								
Valuation for crop and tree damage								
Disclosure of list of landowners eligible, compensation for damages, diminution of land value, crop and tree compensation								
Disbursement of compensation								
Certification of full payment and completion of all R&R activities								

XII. MONITORING AND REPORTING

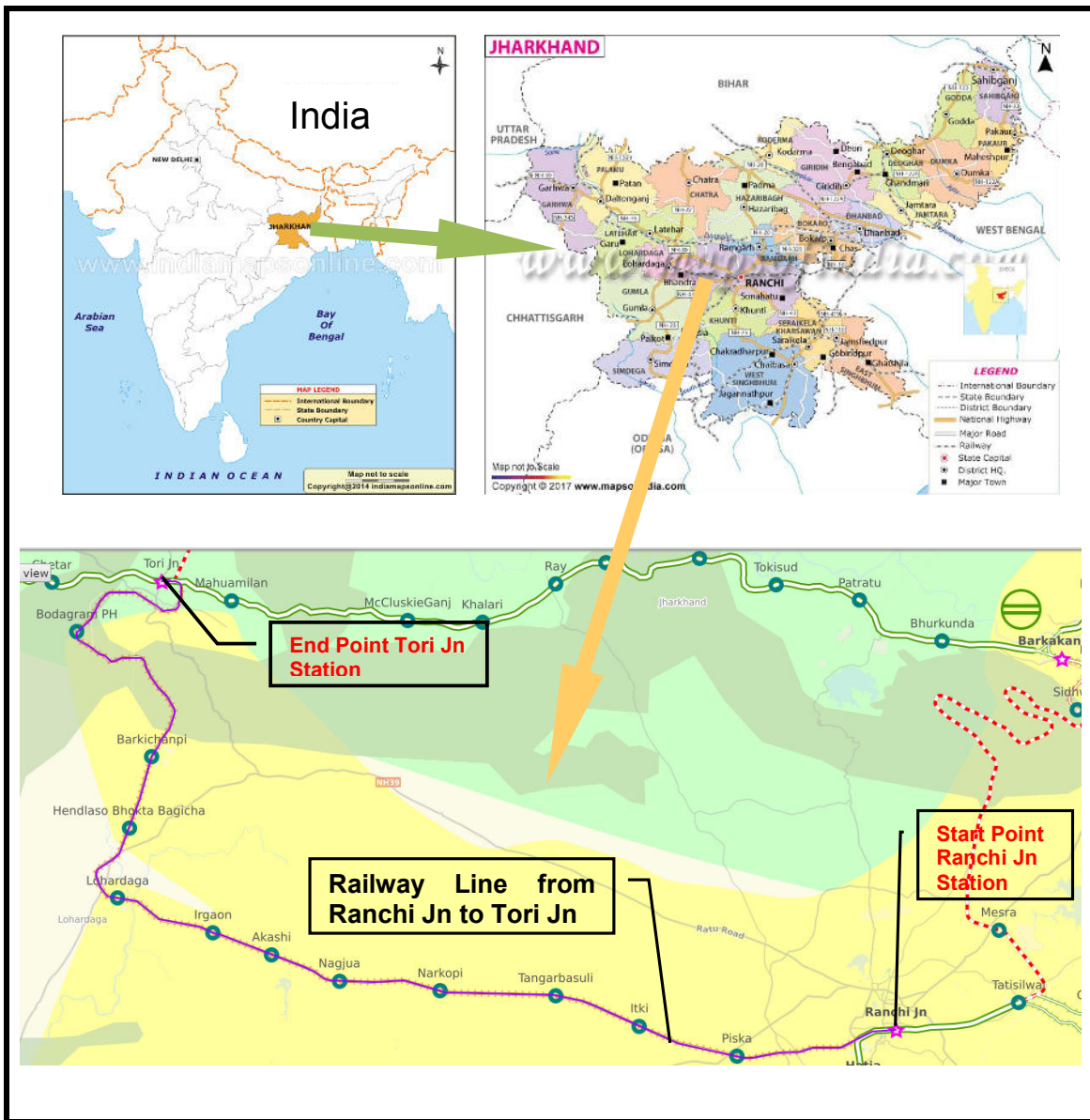
A. Introduction

130. The objective of monitoring is to provide the CPD with an effective tool for assessing progress in RP implementation, identifying potential difficulties and problems areas and provide an early warning system for areas that need correction. Continuous supervision and periodic monitoring are an integral part of successful implementation. Monitoring is a warning system for project managers and a channel for the DPs to express their needs and reactions to the programme.

B. Internal Monitoring

131. The Office of CPD will carry out concurrent monitoring of RP implementation through the Social Safeguard Officer and prepare monthly and semi-annual progress report in terms of physical and financial progress. In addition, the monitoring process will also look into: the communication and feedback of DPs; use of grievance procedures; information dissemination to DPs on benefits; and implementation time table. The monthly internal monitoring reports based on the outcome of consultations and feedback with displaced people who have received compensation for damages, diminution of land value, crop and tree compensation including complains/concerns/issues raised by the DPs, will be submitted to CPD by the end of 1st week of the subsequent calendar month. The progress report will be reviewed by the CPD and corrective actions if any, will be communicated to SSE/JUSNL for immediate action.

APPENDIX-I: LOCATION MAP



Source: Maps of India and Indian Railways

APPENDIX-II: POPULATION DISTRIBUTION OF SCHEDULED TRIBES IN JHARKHAND

SNo	Scheduled Tribe	Total	Male	Female
1	Asur (PTG)	22,459	11,473	10,986
2	Baiga	3,582	1,829	1,753
3	Banjara	487	242	245
4	Bathudi	3,464	1,754	1,710
5	Bedia	1,00,161	50,207	49,954
6	Binjhia	1,404	7,320	7,084
7	Birhor (PTG)	10,726	5,472	5,254
8	Birjia (PTG)	6,276	3,174	3,102
9	Chero	95,575	48,860	46,715
10	Chick-Baraik	54,163	27,126	27,037
11	Gond	53,676	26,925	26,751
12	Gorait	4,973	2,527	2,446
13	Ho	9,28,289	4,59,209	4,69,080
14	Karmali	64,154	33,203	30,951
15	Kharia	1,96,135	97,139	98,996
16	Kharwar	1,48,974	1,26,263	1,22,211
17	Khond	221	114	107
18	Kisan	37,265	18,880	18,385
19	Kora	32,786	16,487	16,299
20	Korwa (PTG)	35,606	18,000	17,606
21	Lohra	2,16,226	1,09,383	1,06,843
22	Mahli	1,52,663	76,631	76,032
23	Mal Paharia (PTG)	1,35,797	67,791	68,006
24	Munda	12,29,221	6,14,199	6,15,022
25	Oraon	17,16,618	8,55,210	8,61,408
26	Parhaiya (PTG)	25,585	13,070	12,515
27	Santhal	27,54,723	13,71,168	13,83,555
28	Sauria Paharia (PTG)	46,222	22,970	23,252
29	Savar (PTG)	9,688	4,864	4,824
30	Bhumij	2,09,448	1,04,910	1,04,538
31	Kawar	8,145	4,082	4,063
32	Kol	53,584	27,037	26,547
33	Generic Tribe	1,73,746	87,388	86,358
Total		86,45,042	43,15,407	43,29,635

Source: Census of India, 2011

APPENDIX-III: CONSULTATION PHOTOGRAPHS



Discussion with Construction workers at
Construction camp at Piska



Consultations with Locals near Transmission
Route alignment at Jajpur village



Focus Group Discussion with stakeholders at
Narkopi near km 459/000



Discussion with villagers at Kaimo village near
km 488/000

APPENDIX- IV: TERMS OF REFERENCE (TOR) OF ADB TECHNICAL ASSISTANCE (TA) SOCIAL SAFEGUARDS SPECIALIST IN THE TEAM

(a) Preamble

Asian Development Bank through Private Sector Operations Department (PSOD) will implement a Technical Assistance Program to CORE for enhancing the environmental, and social safeguard capacity in electrification projects being implemented. For this one team will be formed at Corporate level and 4 teams at regional level. These 4 teams will be deployed at regional offices to cover all corridors selected for electrification under ADB non-sovereign funding. The responsibilities of the Social Safeguards Specialist at corporate and regional levels is given below:

Social Safeguard Specialist at Corporate Level

Social Safeguard Specialist will be responsible for overall management of resettlement plans in the rail track electrification project. Broad responsibilities will be as follows:

- To liaise with the CORE management to ensure that disbursement for compensation is as per schedule and as per RP documents;
- To participate in capacity development training programs and provide training and assistance to contractor and CORE staff;
- To prepare land procurement and compensation manual for easy comprehension of technical staff of CORE, CPD offices staff and Staff of Transmission line contractors;
- To coordinate with Social Safeguards Specialist at regional level to ensure screening of subprojects for involuntary resettlement, preparation of resettlement plan, wherever required, in the implementation of the RP and disbursement of compensations and R&R assistance to the displaced persons;
- To collect information/ data for submission of semi annual monitoring reports to ADB;
- To help CORE in Grievance Redressal of displaced persons;
- To closely work with the Safeguards Officer at CPD's office for effective implementation of Resettlement Plans and in preparing the monthly and semi-annual progress reports and
- To review and finalise Resettlement Plans of subprojects prepared by regional social safeguards specialist.

Social Safeguard Specialist at Regional Offices of CORE

Social Safeguards Specialist will be responsible for ensuring screening subprojects for involuntary resettlement, preparation of resettlement plans and in implementation of resettlement plans in all corridors in the region of his / her deployment. Broad responsibilities will be as follows:

- Screen subprojects for involuntary resettlement,
- Carry out necessary surveys and consultations and prepare resettlement plans, wherever required,
- To monitor disbursement of compensation and other assistance to project affected families;
- To visit the corridors regularly in consultation with designated safeguard officers to see recommended mitigations in resettlement plan documents are being complied with;
- To help CPD offices and contractors in resolving safeguard related grievances of displaced persons and other stakeholders;
- To collect information / data for preparation of monthly and semi annual monitoring reports and send this to Social Safeguards Specialist at corporate level for compilation;

- To organize capacity building training programs (with the support of designated safeguard officers at CPD offices) as per requirements indicated in Resettlement plan documents and overall project policy;
- To report any unforeseen impacts and or events related to social impacts; and
- To interact and support other team members of TA team for effective implementation of social safeguards.