 <div style="text-align: center;"> <b>Monitoring report form</b>  <b>(Version 05.1)</b> </div>		
<i>Complete this form in accordance with the Attachment "Instructions for filling out the monitoring report form" at the end of this form.</i>		
<b>MONITORING REPORT</b>		
<b>Title of the project activity</b>	Small Scale Jhansi JFM A/R CDM Project on degraded lands in Jhansi Forest Division, Uttar Pradesh, India.	
<b>UNFCCC reference number of the project activity</b>	10220	
<b>Version number of the monitoring report</b>	Version 5	
<b>Completion date of the monitoring report</b>	02/08/2017	
<b>Monitoring period number and duration of this monitoring period</b>	1 01/01/2012 to 06/06/2016 (1619 days) (both days included)	
<b>Project participant(s)</b>	M/s Divisional Forest Officer (DFO), Jhansi Forest Division,	
<b>Host Party</b>	India	
<b>Sectoral scope(s)</b>	Sectoral scope 14: Afforestation and Reforestation	
<b>Selected methodology(ies)</b>	AR-AMS0007: "Afforestation and reforestation project activities implemented on lands other than wetlands", Version 03.0	
<b>Selected standardized baseline(s)</b>	Not applicable	
<b>Estimated amount of GHG emission reductions or net GHG removals by sinks for this monitoring period in the registered PDD</b>	7236 tCO <sub>2e</sub>	
<b>Total amount of GHG emission reductions or net GHG removals by sinks achieved in this monitoring period</b>	GHG emission reductions or net GHG removals by sinks reported up to 31 December 2012	GHG emission reductions or net GHG removals by sinks reported from 1 January 2013 onwards
	0	5,464 tCO <sub>2e</sub>

## SECTION A. Description of project activity

### A.1. Purpose and general description of project activity

>> The proposed SSC A/R project activity is implemented by the local communities represented by eight Joint Forest Management Committees of Jhansi forest division in the state of Uttar Pradesh, India.

The proposed SSC A/R project sites represent eight village forests are Khadaura, Kakarwai, Saraul, Kanaura, Parechha, Baraura, Raseena and Manpur-Babina. These village forests predominantly have an agrarian economy having more than 80% of its population dependent on agriculture, livestock and forests. The parcels of project lands selected for reforestation activities are in the state of severe degradation over the past many decades. The project sites have faced significant ecological degradation, run-off of fertile soil and biodiversity loss. These sites are characterized by rocky undulating terrains, scanty water resources and low fertile top soil cover. Further, the region experiences widespread open cast extraction and mining activities resulting removal of top fertile soil and natural vegetative cover. These activities have severely affected the environment and raises health hazard issues over a period of time at local level. Therefore, to restore these degraded lands the Joint Forest Management Committees (JFMCs) along with forest department have established the proposed SSC A/R-CDM plan on these lands through a larger scheme titled "Uttar Pradesh Participatory Forest Management and Poverty Alleviation Project (UP PFMPAP)" funded by Japan International Cooperation Agency (JICA) as a loan to the Government of India.

The forest cover in the Jhansi Forest Division is far below the national threshold of 23.57% of the total geographic area of the country under the forest cover and tree cover. The forest type in the division is dry deciduous with open to medium canopy cover. The division falls under the semi-arid climatic zone and uncertain rainfall patterns. Bundelkhand region is under the grip of repeated drought, which has adversely affected the livelihood of the forest dependent communities. Most of the people within the selected village forest areas belong to the socially marginalised and economically weaker section of the society. These communities are heavily dependent on forests and agriculture for sustaining their livelihood. During the summer season, the area experiences severe drought conditions due to shortage of water in the rivers and rivulets. Illicit felling, pollarding and unsustainable harvesting practices are common during this period. Also, natural weeds such as Lantana (*Lantana camara*), Karonda (*Carissa spinarum*) and Vantulsi (*Ocimum basilicum*) adversely affect the growth of natural regeneration. Thus, restoring these forest areas is essentially required and is one of the major objectives of the forest department. Enhancement of forest canopy and rich humus on ground would certainly reduce the surface run off and improve ground water recharge. Reforestation of native tree species under this project would not only reduce the impact of drought, but also fulfil the much needed forest produce and its ecosystem services in the region.

**Purpose of the A/R CDM project activity**

The major aims of the proposed SSC A/R CDM project activity are to enhance the forest cover, improve local livelihood opportunities, and adopt sustainable forest management practices through JFM activities. Twenty one tree species were planted in the A/R CDM area for promoting Sustainable Forest Management (SFM) through involving local communities. The project activities focus on women empowerment, training and capacity building of front line forest staff, JFMC members, Forest User Groups (FUGs), and Self Help Groups (SHGs). Standard forestry techniques like sowing of seeds, dig pitting, planting, weeding and casualty planting as recommended by the state forest department were followed by all the JFMCs. These activities are carried out by engaging local human capital so as to avoid project emissions and meet the objectives of employment generation for the local communities.

The selected area under the project activity was degraded and abandoned for past many decades. The extreme low productivity deterred the forest department from taking up plantations over these lands for at least past three decades.

**Brief description of the installed technology and equipment;**

The small scale project activities were strictly adhered to promote Sustainable Forest Management (SFM) through involving local communities as per the SOP (Standard Operating Procedure). The SSC A/R CDM Project activity covers ten village forests. Total 21 native tree species were planted across eight selected village forest areas of the project. All the JFMCs carried out standard forestry techniques like sowing of seeds, dig pitting, planting, weeding and casualty planting as recommended by the State Forest Department. These activities carried out with the help of human labor to avoid project emissions and also to meet the objectives of employment generation for local communities. The project activities focus on women empowerment, training and capacity building of front line forest staff, JFMC members, Forest User Groups (FUGs), and Self Help Groups (SHGs).

**Relevant dates for the project activity (e.g. construction, commissioning, continued operation periods, etc.);**

The plantation activities of the project were completed in three different phases. The first phase of plantation covering an area of 138.22 ha was completed in the year 2012, Second phase of plantation covering an area of 7.77 ha was completed in 2013 and final phase of plantation covering an area of 122.88 ha was completed in 2014. Thus the total project area is 268.87 ha area.

Total GHG emission reductions or net GHG removals by sinks achieved in this monitoring period is **5,464 tCO<sub>2</sub>-e.**

**A.2. Location of project activity**

&gt;&gt;

**Host Party**

India

**Region/State/Province etc.**

Northern region of India

State - Uttar Pradesh

District - Jhansi

**City/Town/Community etc.**

City: Jhansi

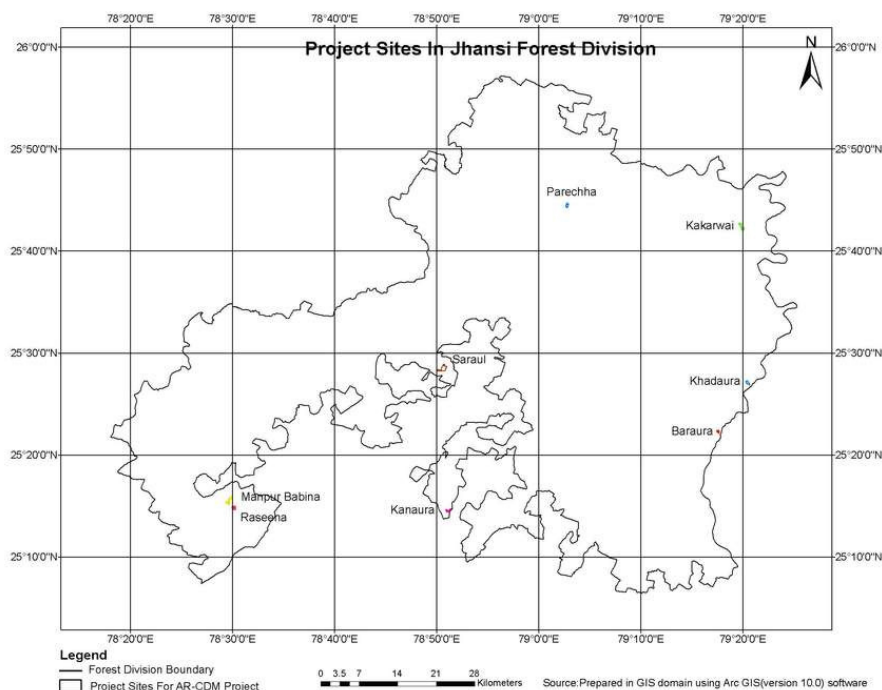
Town: Jhansi

Communities: Villages represented by the following Joint Forest Management Committees (JFMCs):

1. Saraul
2. Kakarwai
3. Khadaura
4. Manpur-Babina
5. Raseena
6. Kanaura
7. Baraura
8. Parechha

**Physical/geographical location**

Jhansi is one of the districts of Uttar Pradesh State, bordering Jalaun district of UP State from the North, Hamirpur district of UP State from the East, Tikamgarh district of Madhya Pradesh State from South and Lalitpur district of UP State from South West direction. Administratively, the district is divided into five tehsils and eight developmental blocks. The total geographical area of the district is 33422.912 hectare and is situated between Latitude 25°8' and 25°57' (North) & Longitude 78°18" and 79°25" (East) with an average elevation of 284 meters above mean sea level. The division is characterized by semiarid tract of plateau and hill region of central India. It is surrounded by Madhya Pradesh State on three of the total four sides. The river Betwa, Pahuje and Dhanas are the main tributaries of river Yamuna flowing across the division. The banks of these rivers are flanked by most of the forest of the region. According to the 2011 census data, Jhansi district have population of 1,998,603 of which male and female are 1,057,436 and 941,167 respectively with literacy rate of 75.05%.



**Figure 1: Forest division map of Jhansi**

Jhansi A/RCDM project has been formed by eight village forests of Jhansi Forest Division namely Khadaura, Kakarwai, Saraul, Kanaura, Parechha, Baraura, Raseena and Manpur-Babina. The geo-referencing of each discrete parcel of project land in these JFMCs is carried out whose details are provided in the Appendix 2. Further, unique coding system for the identification of each parcel lands is adopted as represented in table 1: Details of each discrete parcel of the land in all the selected JFMCs village forest. The code CH05101-2012 can be decoded as, the first two alphabets CH represents Forest Range i.e. Chirgaon Forest Range, the next three digits 051 indicates the unique JFMC code and the last two digits 01 indicates the discrete site code within the JFMC, while 2012 represents the year of plantation in the given patch. Thus, in general each discrete project site is coded with first two letters indicating forest range, next three digits indicate the JFMC code and the last two digits indicate the discrete site code within each JFMC.

The lands included in the project are those that belong to these JFMCs and which was non-forest (forest cover density of less than 15%) as on 31/12/1989 and also in January, 2012 (start date of the project). The land belonging to these JFMCs that do not fulfil the CDM land eligibility conditions<sup>1</sup> or where reforestation activities have been carried out before January 2012 have not been included in this AR CDM project. The project activities were implemented in the month of January, 2012. The plantation activities of the proposed project were planned in three different phases. The first phase of plantation was started in 2012, covering an area of 138.22 ha, second phase of plantation was started

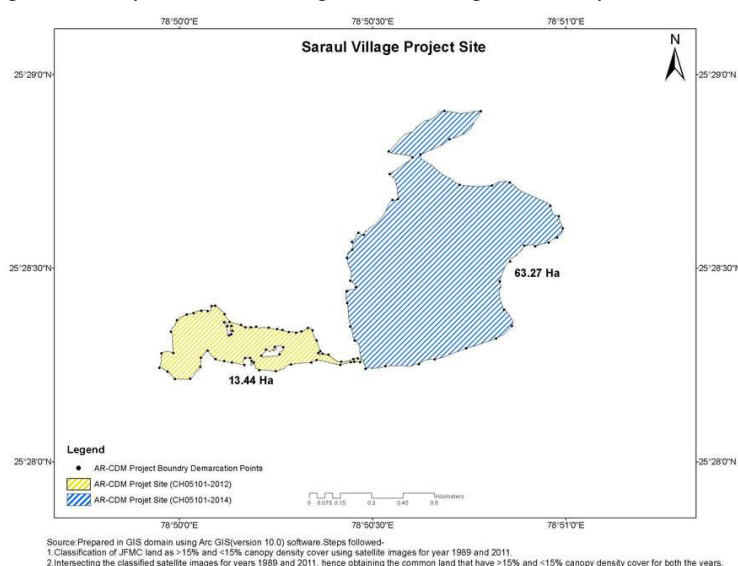
<sup>1</sup>[http://cdm.unfccc.int/Reference/Procedures/methAR\\_proc03.pdf](http://cdm.unfccc.int/Reference/Procedures/methAR_proc03.pdf)

in 2013, covering an area of 7.77 ha and the third and final phase of plantation covering an area of 122.88 ha was completed in 2014, with a total of 268.87 ha area.

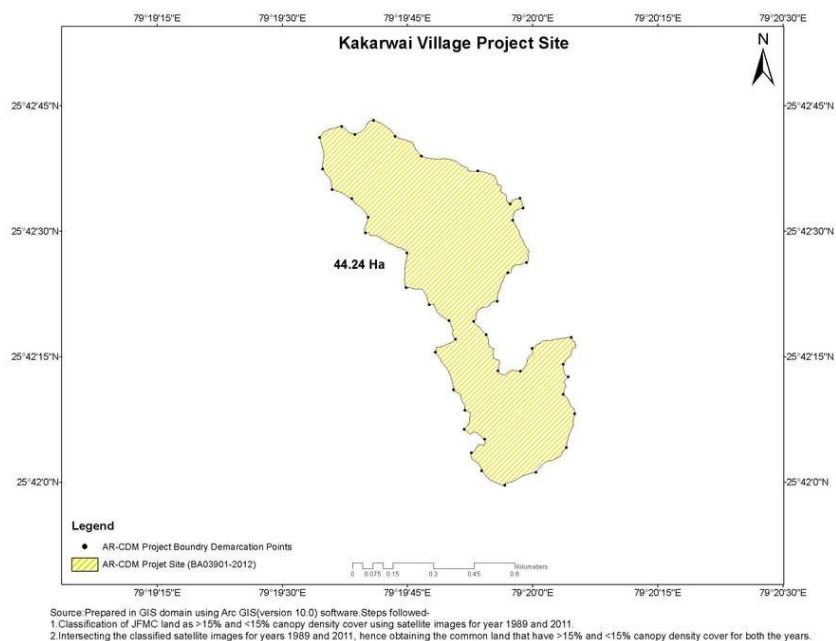
**Table 1: Details of each discrete parcel of the land in all the selected JFMCs village forest**

S. No.	JFMC Village	JFMC AR CDM Code	Recorded village forest area (ha)	Area of each discrete patch (ha)	Total AR CDM project area (ha)
1	Saraul	CH05101-2012	100.95	13.44	76.71
		CH05101-2014		63.27	
2	Kakarwai	BA03901-2012	100.00	44.24	44.24
3	Khadaura	GU04801-2012	173.59	23.01	23.01
4	Manpur Babina	BA47801-2012	73.30	19.46	49.48
		BA47802-2012		18.33	
		BA47801-2013		7.77	
		BA47801-2014		3.92	
5	Raseena	BA04201-2014	88.70	24.89	24.89
6	Kanaura	MA04301-2014	70.98	6.3	18.51
		MA04302-2014		6.39	
		MA04303-2014		5.82	
7	Baraura	MA04401-2014	122.32	12.29	12.29
8	Parechha	MA04601-2012	132.10	19.74	19.74
<b>Total</b>			<b>861.94</b>	<b>268.87</b>	<b>268.87</b>

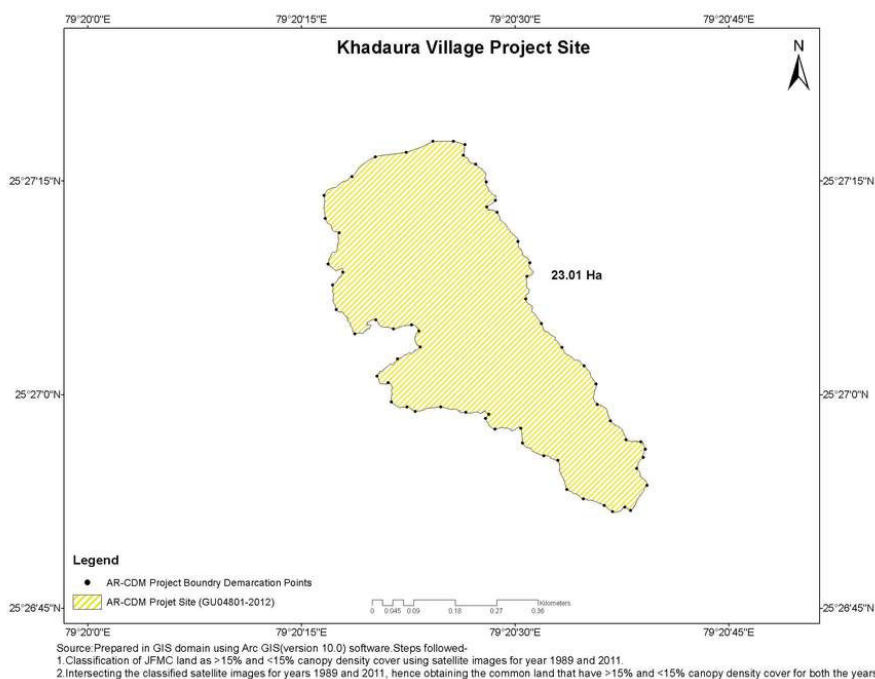
The project boundaries of all the eight JFMCs with their discrete parcel of plantation sites are indicated below in figure 2: Map of Saraul village forest to figure 9: Map of Parechha village forest.



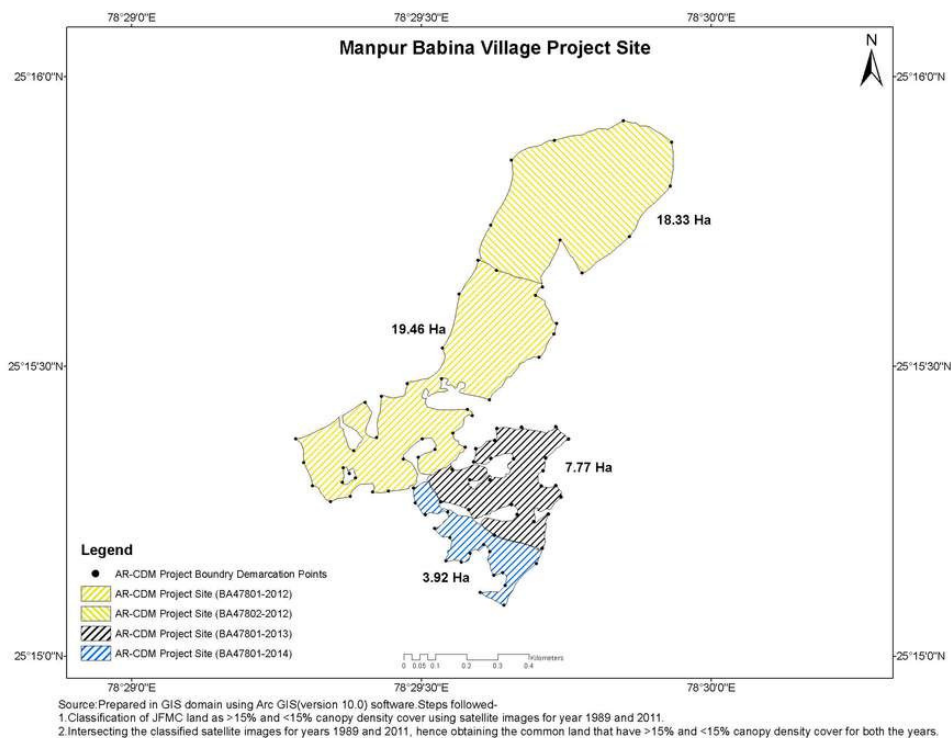
**Figure 2: Map of A/R CDM area of Saraul village forest**



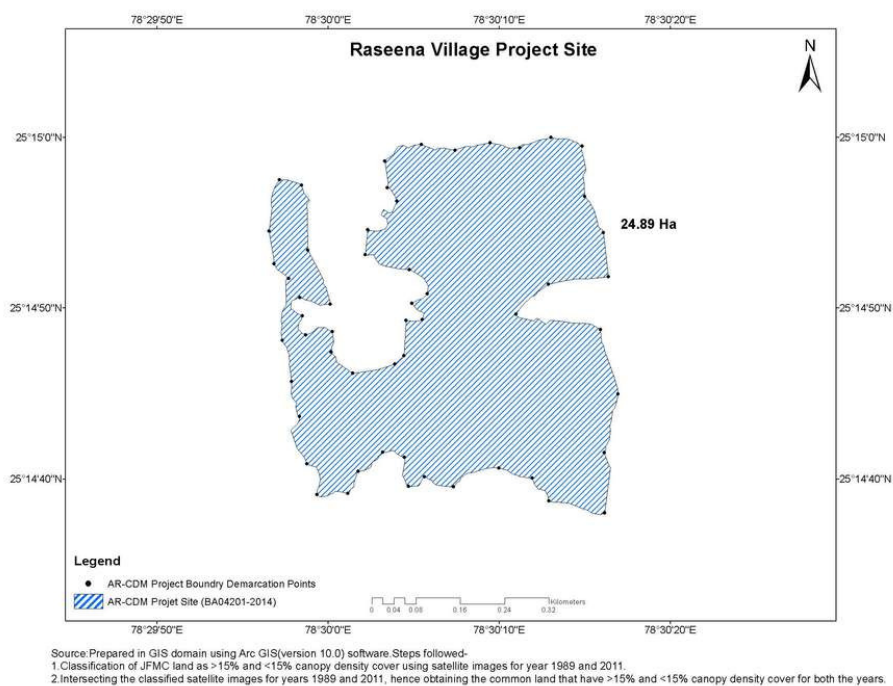
**Figure 3: Map of A/R CDM area of Kakarwai village forest**



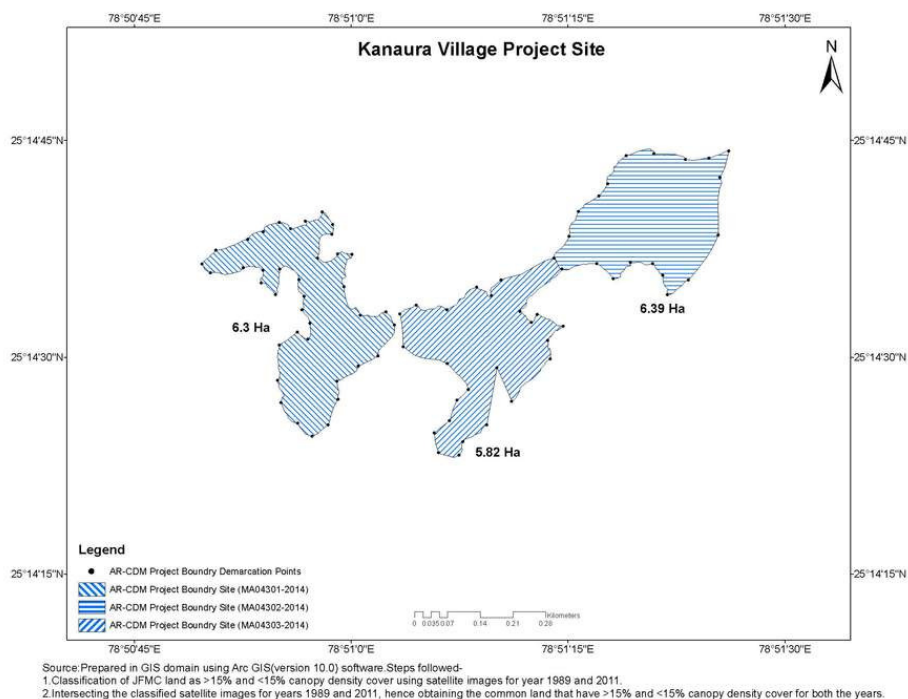
**Figure 4: Map of A/R CDM area of Khadaura village forest**



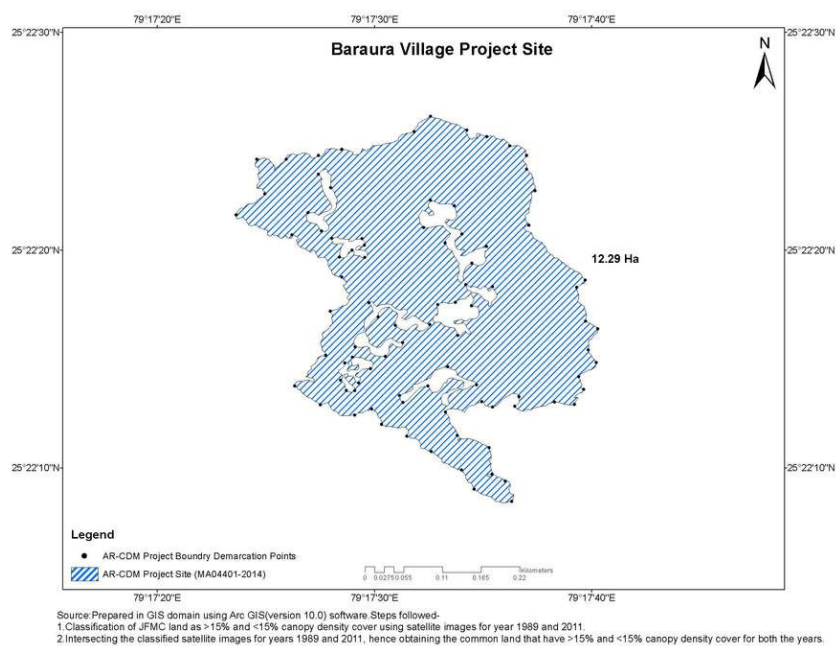
**Figure 5: Map of A/R CDM area of Manpur Babina village forest**



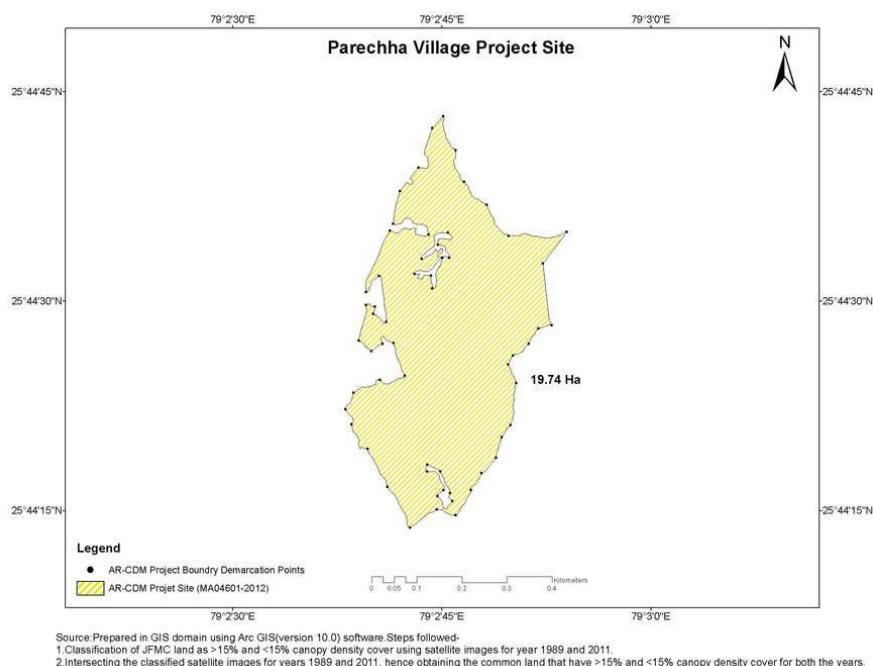
**Figure 6: Map of A/R CDM area of Raseena village forest**



**Figure 7: Map of A/R CDM area of Kanaura village forest**



**Figure 8: Map of A/R CDM area of Baraura village forest**



**Figure 9: Map of A/R CDM area of Parechha village forest**

### A.3. Parties and project participant(s)

Party involved (host) indicates a host Party)	Private and/or public entity(ies) project participants (as applicable)	Indicate whether the Party involved wishes to be considered as project participant (yes/no)
India (host)	Public entity A – M/s Divisional Forest Officer (DFO), Jhansi Forest Division	Yes

### A.4. Reference of applied methodology and standardized baseline

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AR-AMS0007 - Afforestation and reforestation project activities implemented on lands other than wetlands;<sup>2</sup>;(Version 03.0.)

Tools used in the proposed SSC A/R project activity are:

1. Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities<sup>3</sup>;(Version 04.2)
2. Demonstration of eligibility of lands for A/R CDM project activities<sup>4</sup>;(Version 02)
3. Guidance on application of the definition of the project boundary to A/R CDM project activities<sup>5</sup>;(Version 01);
4. Estimation of non-CO<sub>2</sub> GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity<sup>6</sup>;(Version 04.0.0)

<sup>2</sup>[https://cdm.unfccc.int/filestorage/2/D/8/2D8GSJ95T6AHQWZCRY3L7EI0U4PNKF/eb85\\_repan22.pdf?t=SmJ8bnM4bHd4fDAbl3w7V1yVxFJbELgCxfRr](https://cdm.unfccc.int/filestorage/2/D/8/2D8GSJ95T6AHQWZCRY3L7EI0U4PNKF/eb85_repan22.pdf?t=SmJ8bnM4bHd4fDAbl3w7V1yVxFJbELgCxfRr)

<sup>3</sup><http://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-14-v3.0.0.pdf>

<sup>4</sup>[http://cdm.unfccc.int/Reference/Procedures/methAR\\_proc03.pdf](http://cdm.unfccc.int/Reference/Procedures/methAR_proc03.pdf)

<sup>5</sup>[http://cdm.unfccc.int/EB/044/eb44\\_repan16.pdf](http://cdm.unfccc.int/EB/044/eb44_repan16.pdf)

5. Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity<sup>7</sup>; (Version 02)
6. Guidelines on assessment of debundling for SSC project activities<sup>8</sup> ; (Version 04)
7. Calculation of the number of sample plots for measurements within AR CDM project activities<sup>9</sup>; (Version 02.1.0.)
8. Demonstrating appropriateness of volume equations for estimation of aboveground tree biomass in A/R CDM project activities version 01.0.1<sup>10</sup>

#### A.5. Crediting period of project activity

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Type : Renewable Crediting Period  
 Start Date : 01/01/2012  
 Length of first crediting period : 01/01/2012 to 31/12/2031

#### A.6. Contact information of responsible persons/entities

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M/s Divisional Forest Officer (DFO), Jhansi Forest Division  
 Detailed Contact information is provided in Appendix 1

### SECTION B. Implementation of project activity

#### B.1. Description of implemented registered project activity

The reforestation activities were carried out in three phases i.e. the first phase was in the year 2012, second phase was in the year 2013 and the third phase was carried out in the year 2014. The first phase of plantation activities were carried out during the month of July – August in the year 2012 and the second phase of the plantation has been carried out in the month of July 2013, third phase was carried out in month of July 2014. The replacement for the first year of plantation has been carried out in July 2013, for the second year plantation was done in July 2014 and for third year it was carried out in 2015. Around 20 to 25% of the total plants were replaced during each phase on account of mortality.

The selected area under the project activity is degraded and abandoned and the terrain consists of rocky escarpments in many JFMCs of the Jhansi Division for past many decades<sup>11</sup>.

Species planted under the project were selected based on the priority given by the local people and their suitability to the local climatic. Twenty one (21) different tree species which are planted within the project area in two different types of plantation models i.e. Plantation cum Stand Improvement model and Block plantation model only taken for emission removals calculations. It should be noted

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<sup>6</sup><http://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-08-v4.0.0.pdf>

<sup>7</sup><http://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-15-v1.pdf>

<sup>8</sup>[http://cdm.unfccc.int/Reference/Guidclarif/ssc/methSSC\\_guid17.pdf](http://cdm.unfccc.int/Reference/Guidclarif/ssc/methSSC_guid17.pdf)

<sup>9</sup><http://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-03-v2.1.0.pdf>

<sup>10</sup> <https://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-18-v1.0.1.pdf>

<sup>11</sup>From PRA report

that some of the slow growing species are not accounted for GHG removal calculations as they haven't attained the required size (10 cm girth and 2 m height), however the same will be monitored for next verification.

### **Block plantations:**

This plantation model is applied to increase the forest cover, enhance forest productivity and ensure multilayered vegetation cover to grow for soil and moisture conservation. The model focus on plantation of tree species, which will provide fuel, fodder, NTFPs and other high value forest products on maturity of the plants. The plantation model comprise of around 888 saplings planted in one hectare. Size of each pit is 0.45m\*0.45m\*0.45m and pit to pit distance is 3m\*3m. Similarly, around 100 trenches are dug in one hectare with size of 3m length x 0.6m width of each trench in this plantation model. Seeds of fodder grasses are sown and grass tufts are planted along the boundary of each trench in order to stabilize the forest floor and contribute to fodder production as well.

### **Stand up improvement plantations:**

This plantation model is developed to improve the existing vegetation by planting the preferred species such as Asna (*Terminalia tomentosa*), Harar (*Terminalia chebula*), Bahera (*Terminalia belerica*), Aonla (*Emblica officinalis*), Piyar (*Buchanania lanzan*) and Semal (*Bombax ceiba*) etc. The plantation model comprise of around 400 saplings planted in one hectare. Size of each pit is 0.45m\*0.45m\*0.45m and pit to pit distance varies from place to place. Similarly, around 100 trenches are dug in one hectare. Size of each trench is 3m length x 0.6m width. Seeds of fodder grasses are sown and tufts of various grasses are planted along the boundary of each trench to stabilize the forest floor and contribute to fodder production.

The following activities were carried out in the project:

### **Seed collection**

High quality seeds of various tree species are collected from the best plantation sources available within the Jhansi forest division for raising saplings in the nurseries. After collection, quality seeds are screened out manually and sown in the nearby forest nurseries. For some of the tree species are selected from the Candidate Plus Trees identified by the forest department.

### **Nursery Technology**

Decentralized nurseries close to the plantation areas have been established to reduce the cost of the transportation and GHGs emissions generated in the process. The seedlings germinated in the nursery beds are transferred into the poly bags and graded at suitable intervals to weed out poor performers. After 6 to 8 months, the saplings became mature and ready for plantation and were transported to the plantation site for reforestation.

### **Species selection**

The species for plantation were selected by the JFMCs members and villagers. They preferred to plant mixed flora consisting of trees which are economically important and also suited for local agro-climatic zone<sup>12</sup>. The main species selected for plantation were:

Botanical Name	Local Name	Family	Uses
<i>Acacia catechu</i>	Khair	Fabaceae	Bark decoction is used in stomachache. Also used in chronic diarrhea. The bark is used to prepare tannin and dyes
<i>Acacia nilotica</i>	Babul	Fabaceae	The exudate gum of this tree is known as gum arabic and has been collected from the pharaonic times for the manufacture of medicines, dyes and paints. The gum of <i>A. nilotica</i> is also referred to in India as Amaravati gum.
<i>Acacia leucophloea</i>	Reunja	Fabaceae	The bark extracts of <i>Vachellia leucophloea</i> are used in Pakistan traditional medicine as an astringent, a bitter, a thermogenic, a styptic, a preventive of infections, an anthelmintic, a vulnerary, a demulcent, an expectorant, an antipyretic, an antidote for snake bites and in the treatment of bronchitis, cough, vomiting, wounds, ulcers, diarrhea, dysentery, internal and external hemorrhages, dental caries, stomatitis, and intermittent fevers and skin diseases.
<i>Acacia arabica</i>	Desi babool	Fabaceae	The part of the tree finds use in diabetes, skin diseases and leucorrhoea. These are also used as an antidiarrhoeal, antidysenteric, antidiabetic. The stem bark is astringent, demulcent used in diarrhoea, dysentery, diabetes as astringent, antihelminthic, in skin disease, cough and bleeding piles, gonorrhea and as an antiasthmatic.
<i>Ailanthus excelsa</i>	Aru	Simaroubaceae	Powdered bark is used to treat intestinal tapeworm, constipation, stomach troubles and dysentery. Root bark is administered to cure epilepsy, heart troubles and asthma
<i>Albizia amara</i>	Siras	Fabaceae	The leaves and flowers are used for treatment of boils and ulcers. The leaf is also used for

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<sup>12</sup> PRA report

			treatment of erysipelas. Its wood is used for construction and furniture, and as a firewood. <i>Albizia amara</i> provides many environmental services: control of soil erosion, wind break, shade provider. It is also an ornamental tree in urban areas. Ruminants can feed its leaves
<i>Anogeissus pendula</i>	Kardhai	Combretaceae	It is used for its wood and tannins and as a fodder.
<i>Azadirachta indica</i>	Neem	Meliaceae	Neem products have medicinal properties that prove to be anthelmintic, antifungal, anti-diabetic, antibacterial, antiviral, anti-fertility and sedative. Its oil is used for preparing cosmetics, like soap, shampoo, balms, creams, etc, which prove handy for skin care, such as in treatment of acne, for keeping the elasticity of skin. The gum of neem tree is used as a bulking agent to prepare special purpose food for diabetic patients. Its twigs are commonly used for cleaning teeth. A decoction can be prepared from the roots of neem tree and ingested to relieve fever
<i>Bauhinia racemosa</i>	Mauli	Fabaceae	The leaves are used in the production of <i>beedi</i> , a thin Indian cigarette.
<i>Bolanitis aegyptica</i>	Hingota	Zygophyllaceae	Desert date fruit is mixed into porridge and eaten by nursing mothers, and the oil is consumed for headache and to improve lactation.
<i>Boswellia serrata</i>	Salaiya	Burseraceae	Extracts of <i>Boswellia serrata</i> have been clinically studied for osteoarthritis and joint function, particularly for osteoarthritis of the knee, with the research showing a slight improvement of both pain and function compared to a placebo.
<i>Butea monosperma</i>	Palas	Fabaceae	The leaves and flowers are astringent, depurative, diuretic and aphrodisiac. These are used against boils, pimples, worms and piles. Gum is used for diarrhea
<i>Capparis decidua</i>	Karil	Capparaceae	<i>Capparis decidua</i> is used as a vegetable for diabetic patients.
<i>Dalbergia sissoo</i>	Sisham	Fabaceae	Decoction of leaves useful in gonorrhea, roots astringent
<i>Holoptelea integrifolia</i>	Chilbil	Ulmaceae	The bruised leaves are applied to boils. Juice of boiled bark is applied to rheumatic swellings

<i>Nyctanthese arbotristis</i>	Harsingar	Oleaceae	Extracts of the seeds, flowers and leaves possesses immunostimulant, hepatoprotective, antileishmanial, antiviral and antifungal activities in vitro.
<i>Pongamia pinnata</i>	Kanji	Fabaceae	Juice is used to treat diarrhea, cough, dyspepsia, leprosy and gonorrhea. The oil from seeds is used in making soap.
<i>Prosopis juliflora</i>	Prosopis	Fabaceae	Its uses include forage, wood and environmental management. The plant possesses an unusual amount of the flavanol (-)-mesquitol in its heartwood
<i>Tectona grandis</i>	Sagwan	Verbenaceae	Wood is acrid, cooling, laxative, sedative to gravid uterus and useful in treatment of piles, leucoderma and dysentery. Flowers are acrid, bitter and dry and useful in bronchitis, biliousness, urinary discharges etc. Roots are useful in treatment of urinary system related troubles
<i>Ziziphus xylopyrus</i>	Aashadh	Rhamnaceae	It is a medicinal tree and its fruits are used in treatment of diseases of skin, urinary disorders, diseases occurring due to vitiation of blood, obesity, diabetes, snake bite, fever, diarrhea, insomnia and digestive disorders.
<i>Ziziphus mauritiana</i>	Ber	Rhamnaceae	Fruits are edible. Decoction of roots is used in fever and powder applied to old wounds and ulcers. Bark is used in diarrhea

Apart from the above main species the following (rest of other species)

*Acacia auriculiformis*, *Aegle marmelos*, *Albizia lebbeck*, *Annona squamosa*, *Cassia siamea* *Embilica officinalis*, *Madhuca indica*, *Moringa oleifera*, *Tamarindus indica*, *Terminalia arjuna*, *Terminalia bellerica* were also planted in the project area.

However the following 21 species (*Acacia catechu*, *Acacia leucophloea*, *Acacia nilotica*, *Albizia amara*, *Azadirachta indica*, *Butea monosperma*, *Dalbergia sissoo*, *Prosopis juliflora*, *Tectona grandis*, *Holoptelea integrifolia*, *Nyctanthese arbortristis*, *Pongamia pinnata*, *Ziziphus mauritiana*, *Zizyphus xylopyrus*, *Acacia arabica*, *Ailanthus excels*, *Anogeissus pendula*, *Bauhinia racemosa*, *Bolanitis aegyptica*, *Boswellia serrate* and *Capparis decidua*) were included in the CER sheets for calculation in this monitoring period, as other species are not upto the measurable growth (that is less 2m height and 10 cm GBH). During the next verification those trees will be accounted once it is taller than 2 m height and 10 cm GBH.

## Site preparation

The land was prepared for planting by removing rootstocks, bushes etc. and ploughed with mould board plough. The site preparation under the project activity was done mainly through bullock ploughing hence the soil damage was less and it ensured that there will be no long term emissions from soil carbon. Ploughing was done one month before plantation.

### **Weeding**

Weeding around the planted saplings was carried out manually to reduce competition. Manual weeding was done once in a year during the month of September. Cultural operations were avoided as they may disturb the top soil.

### **Silviculture operation**

Silvicultural operations like weeding especially nearby the trees in the initial years, hoeing, pruning etc were carried out using standard forestry techniques recommended by the state forest department. These activities were carried out with the help of human labour so as to avoid project emissions and also to meet the objectives of employment generation for local communities.

## **B.2. Post-registration changes**

### **B.2.1. Temporary deviations from registered monitoring plan, applied methodology or applied standardized baseline**

The tree height is not measured using ravi altimeter because most of the trees are around 5m in height (anticipated growth not present). So for this monitoring period the tree heights are measured using graduated poles. Also the project participants plan to use the graduated poles for the trees upto 7m height even for the next verifications. The trees with more than 7m height will be measured using ravi altimeter or any other sophisticated accurate measuring instrument as per the best forest practices available at the time of monitoring.

The Conservative value of the tree height is used for example if the tree height is 4.8 m, it is rounded down to 4.5 m and if it is 4.4 or 4.1 it is rounded to 4m (nearest 0.5 m) for the usage in volume equations.

### **B.2.2. Corrections**

Not Applicable

### **B.2.3. Changes to start date of crediting period**

Not Applicable

### **B.2.4. Inclusion of a monitoring plan to the registered PDD that was not included at registration**

Detailed Monitoring plan has been described in the registered PDD.

**B.2.5. Permanent changes from registered monitoring plan, applied methodology or applied standardized baseline**

Not Applicable

**B.2.6. Changes to project design of registered project activity**

Not Applicable

**B.2.7. Types of changes specific to afforestation or reforestation project activity**

The Volume equations of the following species in the below table are changed from the one in the registered PDD as the volume is not proportional to the GBH Even though the equations in the registered PDD were taken from the Indian State of Forest Report, 2011 and Forest Survey of India-Volume Equations for forests of India, Nepal and Bhutan (1996), (National Forestry Inventory).. Those equations considered in the registered PDD are applicable for trees with more DBH. When applying the volume equations as per the registered PDD it is not showing any linear correlation for volume and diameter, so the change was required.

S.No	Species name	Old Formula	New Formula
1	<i>Tectona grandis</i>	$0.08847 - 1.46936 * D^2 + 11.98979 * D^2 + 1.970560 * D^3$	$0.006 + 2.661999 * D^2 + 0.280538 * D^2 * H$
2	<i>Butea monosperma</i>	$(2.95525 * D - 0.24276)^2$	$0.00855 + 0.4432 * D^2 + 0.28813 * D^2 * H$
3	<i>Acacia catechu</i>	$0.02384 - 0.72161 * D^2 + 7.46888 * D^2$	$(0.00817 / D^2 * H + 0.29886) * D^2 * H$
4	<i>Acacia leucophloea</i>	$(-0.00142 + 2.61911 * D - 0.54703 * D^{1/2})^2$	$0.00855 + 0.4432 * D^2 + 0.28813 * D^2 * H$

Also for the rest of species, equation is used for other species which are planted in the project but not exclusively mentioned in the registered PDD. The Equations for those species were also taken from Indian State of Forest Report, (2011) and Forest Survey of India-Volume Equations for forests of India, Nepal and Bhutan (1996).

As per the methodology for ex post estimation, the volume table or volume equation used must be demonstrated to be appropriate for the purpose of estimation of tree biomass by applying the tool “Demonstrating appropriateness of volume equations for estimation of aboveground tree biomass in A/R CDM project activities” as per the tool “Demonstrating appropriateness of volume equations for estimation of aboveground tree biomass in A/R CDM project activities” (Version 01.0.1).

A species-specific or group-of-species-specific volume table or volume equation derived from trees growing in edapho-climatic conditions similar to those in the project area is considered appropriate, and hence can be used for ex post estimation of tree stem volume, if at least one of the following conditions is satisfied:

- a) The equation is used in the national forest inventory, or the national GHG inventory, of the host Party;
- b) The equation has been used in commercial forestry sector of the host Party for 10 years or more;
- c) The equation was derived from a data set of at least 30 sample trees, and the value of coefficient of determination ( $R^2$ ) was not less than 0.85.

Volumetric equations for all the tree species have been considered from Indian State of Forest Report, (2011) and Forest Survey of India-Volume Equations for forests of India, Nepal and Bhutan (1996), (National Forestry Inventory). It satisfies the above condition (a). Hence it is appropriate.

## SECTION C. Description of monitoring system

The AR-CDM project is managed by the A/R CDM Management Committee of the Jhansi forest Division with the DFO as the chairperson and another officer not below the rank of Range Forest Officer (RFO), as member secretary. The A/R CDM Management Committee headed by the DFO is monitoring and coordinating with the participating JFMCs. The A/R CDM committee at the divisional level will ensure that the benefits accrue through this project will directly go to the communities through the DFO. The methodology applied in the project considers the monitoring of following activities related to the implementation of the project, which includes:

Monitoring of the activities	Observations
Monitoring of the project boundaries.	No changes/deviations were observed during the first monitoring of the project period
Monitoring of the planting of the plantations	
Monitoring plantation management	

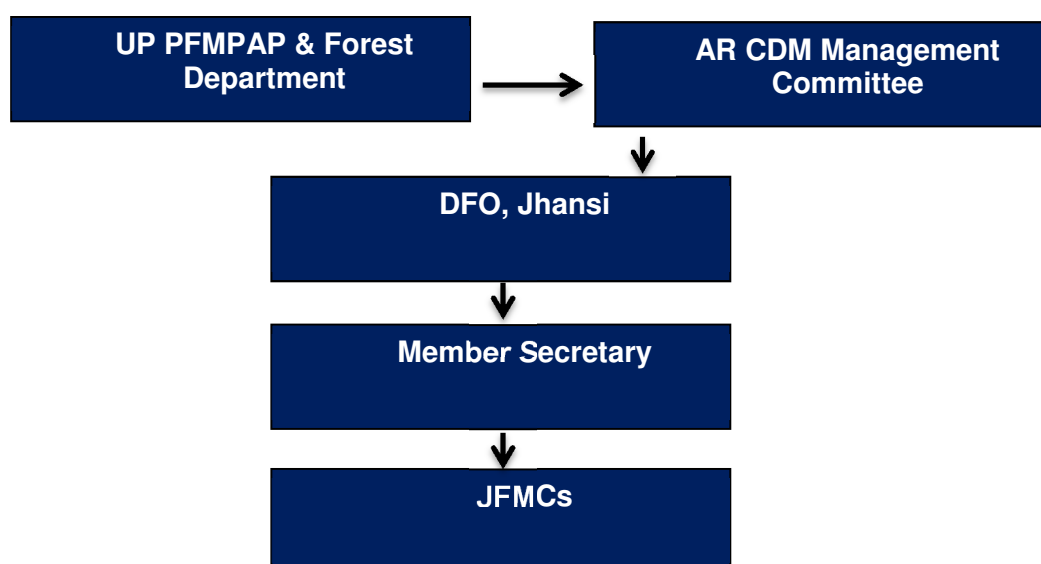


Figure 10: Management Structure

### QA/QC Training and mobilization of field members

Persons involved in the field measurement work were trained on the procedures to be followed for field data collection and data analysis. Standard Operating Procedures (SOPs) for each step of the field measurements as per the operational manual were followed during the data collection.

- Field staff members are fully aware of all procedures and the importance of collecting data as accurately as possible.
- All field staffs are aware of the plots in the field and measure all pertinent components using the standard operating procedures.
- Staff is adequately trained.

## Data Maintaining and archiving

Because of the long-term nature of the A/R CDM project activity, data is archived and maintained safely. Data archived in electronic and paper forms and the copies of all data shall be kept for 2 years beyond the crediting period.

	A	B	C	D	E	F	AI	AJ	AK	AL	AM	AN	AO	AP	
	Sr.No	Sample Plot Number	Local Name	Species name	Height (M)	GBH (Cm)									
1															
2	1	Sample Plot 1	Neem	<i>Azadirachta indica</i>	3.5	16									
3	2		Neem	<i>Azadirachta indica</i>	3.5	16									
4	3		Neem	<i>Azadirachta indica</i>	3.5	18									
5	4		Neem	<i>Azadirachta indica</i>	4.5	19									
6	5		Neem	<i>Azadirachta indica</i>	3.5	18									
7	6		Neem	<i>Azadirachta indica</i>	4.5	19									
8	7		Neem	<i>Azadirachta indica</i>	2	10									
9	8		Sagwan	<i>Tectona grandis</i>	3.5	20									
10	9		Sagwan	<i>Tectona grandis</i>	4	18.7									
11	10		Sagwan	<i>Tectona grandis</i>	3	19.2									
12	11		Sagwan	<i>Tectona grandis</i>	4	22									
13	12		Sagwan	<i>Tectona grandis</i>	3	18									
14	13		Sagwan	<i>Tectona grandis</i>	4	20									
15	14		Shisam	<i>Dalbergia sisso</i>	4	12									
16	15		Shisam	<i>Dalbergia sisso</i>	4.5	13									
17	16		Shisam	<i>Dalbergia sisso</i>	4	15									
18	17		Shisam	<i>Dalbergia sisso</i>	2	13									
19	18		Shisam	<i>Dalbergia sisso</i>	3	14									
20	19		Shisam	<i>Dalbergia sisso</i>	3	12									
21	20		Shisam	<i>Dalbergia sisso</i>	5	13.5									
22	21		Shisam	<i>Dalbergia sisso</i>	2.5	12									
23	22		Shisam	<i>Dalbergia sisso</i>	3.5	13									
24	23		Shisam	<i>Dalbergia sisso</i>	2	14									
Parameter GPS details Manpur Babeena Raseena Kakarwai Saraul Khadaura Parechha Baraura Kanaura															

Figure 11: Inventory Database

## Monitoring of the project boundaries

As per the registered PDD project boundary during the verification period is monitored using GPS. There have been no changes in the project boundary. GPS coordinates have been provided in APPENDIX 2

## Monitoring of leakages:

During the monitoring, JFMC members from the project sites have affirmed that they were no displacement of pre project activities from project sites.

## Measures for Quality Assurance (QA) and Quality Control (QC):

A rigid monitoring plan is developed to ensure completeness and correctness of monitoring data for project emission reduction and leakage analysis. QA and QC methods involving Standard Operating Procedures (SOPs) related to

- (i) Reliability of field measurements was ensured by randomly checking some plots and by ocular measurement
- (ii) Authentication of the methods used to collect field data, -
- (iii) Verification of data entry, data maintenance and analysis techniques shall be followed as discussed below.

Moreover, QA/QC protocol in effect at the project sites was also provisioned to get reviewed internally and externally every five year that is reviewing of the data will happen once the verification is complete. Internal verification has been done. Based on the comments during verification, the comments will be added during the next verification since it is a five years cycle to ensure appropriateness of SOPs with any technological changes (if any).

The people who were responsible for the carbon measurement work were fully trained in all aspects of the field data collection and its analysis. The SOPs described in detail covering all steps of field measurements and documentation for verification purposes in a consistent fashion. It was ensured that:

- a) All the field staffs were aware of all the procedures and understand the importance of collecting data as accurately as possible;
- b) Field team installed test plots in the field and measured all pertinent components using the SOPs to estimate measurement errors;
- c) New staff members were adequately trained.

After field measurement a comparison was made with the original data and discrepancies were re-verified. Field data collected at this stage was compared to the original data.

#### **QA/QC for data entry**

To produce reliable carbon estimates through monitoring sample plots, the entry of data into the data analysis excel sheets were used.

#### **QA/QC for data archiving**

Data storage and maintenance is very important due to the long-term nature of project activities. Therefore, SOPs for data archiving includes storage of original copies of all data, including field measurements, GIS products, and copies of measuring and monitoring reports, in a secure offsite location and provision of these copies of data to all the project participants. All data was archived in paper and electronically in a separate location. Electronic data was copied and stored by authorized persons in charge. All the staffs were trained in monitoring method to improve accuracy of collecting data. Data was archived in safe place. Copies of all data was also stored on paper in a separate remote location. Procedures also included updating storage onto new data storage technologies, both hardware and software.

**SECTION D. Data and parameters****D.1. Data and parameters fixed ex ante or at renewal of crediting period**

Data/Parameter	$BEF_{2,j}$
Unit	Dimensionless
Description	Biomass expansion factor for conversion of stem biomass to above ground tree biomass for tree species $j$
Source of data	Values from IPCC Good Practice Guidance for LULUCF (2003) Table 3A.1.10 <sup>13</sup> . Default values of biomass expansion factors (BEFs).
Value(s) applied	3.4
Choice of data or Measurement methods and procedures	<p><math>BEF_{2,j}</math> overbark default value for tropical climatic zone and broad leaf forest type has been chosen.</p> <p>Biomass of tree species in sample plots is calculated through the formulae mentioned in methodological tool i.e.</p> $B_{TREE,j,p,l,t} = V_{TREE,j,p,l,t} * D_j * BEF_{2,j} * (1 + R_j)$
Purpose of data	Calculation of carbon stocks and changes in carbon stock in the proposed small scale project activity.
Additional comment	None

Data / Parameter	$CF_{Tree}$
Unit	tC (tdry matter) <sup>-1</sup>
Description	Carbon fraction of dry matter for species of type $j$
Source of data	Methodological tool: "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities (Version 04.2)". Referred in equation number 13.
Value(s) applied	0.47
Choice of data or Measurement methods and procedures	A default value of 0.47 is used following the A/R CDM methodological tool.
Purpose of data	Calculation of carbon stocks and changes in carbon stock
Additional comment	None

<sup>13</sup>[http://www.ipcc-nggip.iges.or.jp/public/gpoglulucf/gpoglulucf\\_files/Chp3/Anx\\_3A\\_1\\_Data\\_Tables.pdf](http://www.ipcc-nggip.iges.or.jp/public/gpoglulucf/gpoglulucf_files/Chp3/Anx_3A_1_Data_Tables.pdf)

Data / Parameter	D <sub>j</sub>	
Unit	t d.m. m <sup>-3</sup>	
Description	Density Overbark of tree stem for tree species <i>j</i> .	
Source of data	Published literature of Reyes et al. (1992). Wood Densities of Tropical Tree Species. USDA, FAO Data <sup>14</sup> and Global wood density database <sup>15</sup>	
Value(s) applied	<b>Species</b>	<b>Wood Density</b>
	<i>Acacia catechu</i>	0.88
	<i>Acacia leucoploea</i>	0.67
	<i>Acacia nilotica</i>	0.67
	<i>Albizia amara</i>	0.67
	<i>Azadirachta indica</i>	0.69
	<i>Butea monosperma</i>	0.67
	<i>Dalbergia sissoo</i>	0.68
	<i>Prosopis juliflora</i>	0.67
	<i>Tectona grandis</i>	0.67
	<i>Acacia arabica</i>	0.67
	<i>Ailanthus excelsa</i>	0.67
	<i>Anogeissus pendula</i>	0.69
	<i>Bauhinia racemosa</i>	0.67
	<i>Bolanitis aegyptica</i>	0.67
	<i>Boswellia serrata</i>	0.67
	<i>Capparis decidua</i>	0.67
	<i>Holoptelea integrifolia</i>	0.67
	<i>Nyctanthese arbortristis</i>	0.67
	<i>Pongamia pinnata</i>	0.67
	<i>Ziziphus mauritiana</i>	0.67
<i>Zizyphus xylopyrus</i>	0.67	
Choice of data or Measurement	For species where wood density values are not available, 0.67 is taken as default value from Good Practices IPCC Guidelines, 1996.	

<sup>14</sup><http://www.fao.org/docrep/w4095e/w4095e0c.htm>

<sup>15</sup>Citation for the database: Zanne, A.E., Lopez-Gonzalez, G.\*, Coomes, D.A., Ilic, J., Jansen, S., Lewis, S.L., Miller, R.B., Swenson, N.G., Wiemann, M.C., and Chave, J. 2009. Global wood density database.Dryad. Identifier: <http://hdl.handle.net/10255/dryad.235>.

<b>methods and procedures</b>	
<b>Purpose of data</b>	Calculation of carbon stocks and changes in carbon stock
<b>Additional comment</b>	None

<b>Data / Parameter</b>	$V_{TREE,j,p,i,t}$																																										
<b>Unit</b>	m <sup>3</sup>																																										
<b>Description</b>	Stem volume of trees of species <i>j</i> in sample plot <i>p</i> of stratum <i>i</i> at time <i>t</i> calculated using a volume table or volume equation.																																										
<b>Source of data</b>	Volume equations of each species were taken from Indian State of Forest Report, 2011 <sup>16</sup> and Forest Survey of India-Volume Equations for forests of India, Nepal and Bhutan (1996) <sup>17</sup> .																																										
<b>Value(s) applied</b>	<table border="1"> <tbody> <tr><td><i>Acacia catechu</i></td><td><math>(0.00817/D^2 \cdot H + 0.29886) \cdot D^2 \cdot H</math></td></tr> <tr><td><i>Acacia leucophloea</i></td><td><math>0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H</math></td></tr> <tr><td><i>Acacia nilotica</i></td><td><math>0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H</math></td></tr> <tr><td><i>Albizia amara</i></td><td><math>0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H</math></td></tr> <tr><td><i>Azadirachta indica</i></td><td><math>0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H</math></td></tr> <tr><td><i>Butea monosperma</i></td><td><math>0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H</math></td></tr> <tr><td><i>Dalbergia sissoo</i></td><td><math>(0.00331/D^2 + 0.000636) \cdot D^2</math></td></tr> <tr><td><i>Prosopis juliflora</i></td><td><math>0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H</math></td></tr> <tr><td><i>Tectona grandis</i></td><td><math>0.006 + 2.661999 \cdot D^2 + 0.280538 \cdot D^2 \cdot H</math></td></tr> <tr><td><i>Acacia arabica</i></td><td><math>0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H</math></td></tr> <tr><td><i>Ailanthus excelsa</i></td><td><math>0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H</math></td></tr> <tr><td><i>Anogeissus pendula</i></td><td><math>0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H</math></td></tr> <tr><td><i>Bauhinia racemosa</i></td><td><math>0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H</math></td></tr> <tr><td><i>Bolanitis aegyptica</i></td><td><math>0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H</math></td></tr> <tr><td><i>Boswellia serrata</i></td><td><math>0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H</math></td></tr> <tr><td><i>Capparis decidua</i></td><td><math>0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H</math></td></tr> <tr><td><i>Holoptelea integrifolia</i></td><td><math>0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H</math></td></tr> <tr><td><i>Nyctanthes arbortristis</i></td><td><math>0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H</math></td></tr> <tr><td><i>Pongamia pinnata</i></td><td><math>0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H</math></td></tr> <tr><td><i>Ziziphus mauritiana</i></td><td><math>0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H</math></td></tr> <tr><td><i>Zizyphus xylopyrus</i></td><td><math>0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H</math></td></tr> </tbody> </table>	<i>Acacia catechu</i>	$(0.00817/D^2 \cdot H + 0.29886) \cdot D^2 \cdot H$	<i>Acacia leucophloea</i>	$0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H$	<i>Acacia nilotica</i>	$0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H$	<i>Albizia amara</i>	$0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H$	<i>Azadirachta indica</i>	$0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H$	<i>Butea monosperma</i>	$0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H$	<i>Dalbergia sissoo</i>	$(0.00331/D^2 + 0.000636) \cdot D^2$	<i>Prosopis juliflora</i>	$0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H$	<i>Tectona grandis</i>	$0.006 + 2.661999 \cdot D^2 + 0.280538 \cdot D^2 \cdot H$	<i>Acacia arabica</i>	$0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H$	<i>Ailanthus excelsa</i>	$0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H$	<i>Anogeissus pendula</i>	$0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H$	<i>Bauhinia racemosa</i>	$0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H$	<i>Bolanitis aegyptica</i>	$0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H$	<i>Boswellia serrata</i>	$0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H$	<i>Capparis decidua</i>	$0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H$	<i>Holoptelea integrifolia</i>	$0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H$	<i>Nyctanthes arbortristis</i>	$0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H$	<i>Pongamia pinnata</i>	$0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H$	<i>Ziziphus mauritiana</i>	$0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H$	<i>Zizyphus xylopyrus</i>	$0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H$
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<b>Choice of data or Measurement methods and procedures</b>	<p>For most of the tree species, FSI regional volume equations were applied for the volume estimations. For other tree species, common volume equation from the neighbouring forest region is considered for calculating stem volume. The common equation used under rest of species category is as follows:  <math>0.00855 + 0.4432 \cdot D^2 + 0.28813 \cdot D^2 \cdot H</math><sup>18</sup></p> <p>Volumetric equations of few species were not following the principle that is for the increase in dia the volume is not increases therefore conservative equations are used instead</p>																																										
<b>Purpose of data</b>	Calculation of carbon stocks and changes in carbon stock																																										
<b>Additional comment</b>	The change in volume equations for some of the species for which the volume is not directly proportional to increase in GBH is changed. The same is mentioned in section B.1 of this MR.																																										

<sup>16</sup>[http://www.fsi.org.in/cover\\_2011/chapter8.pdf](http://www.fsi.org.in/cover_2011/chapter8.pdf)

<sup>17</sup>Volume Equations For Forests of India, Nepal & Bhutan, Forest Survey of India Ministry of Environment & Forests, Govt. of India, 1996.

<sup>18</sup>FSI. (1996) Volume Equations For Forest of India, Nepal and Bhutan, Page No. 202

<b>Data / Parameter</b>	$R_j$
<b>Unit</b>	Dimensionless
<b>Description</b>	Root-shoot ratio appropriate for biomass stock, for species $j$
<b>Source of data</b>	Values from IPCC Good Practice Guidance for LULUCF (2003) Table 3A.1.8 <sup>19</sup> “Average belowground to aboveground biomass ratio (root-shoot ratio, $r$ ) in natural regeneration by broad category (tons dry matter/ton dry matter)”.
<b>Value(s) applied</b>	A default value of 0.27 has been applied.
<b>Choice of data or Measurement methods and procedures</b>	As indicated in the methodology applied.
<b>Purpose of data</b>	Calculation of carbon stocks and changes in carbon stock
<b>Additional comment</b>	None

<b>Data / Parameter</b>	$BDR_{SF}$
<b>Unit</b>	Dimensionless
<b>Description</b>	Ratio of shrub biomass per hectare in land having a shrub crown cover of 1.0 and default above-ground biomass content per hectare in forest in the region/country
<b>Source of data</b>	Methodological tool “ <i>Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities; Version 04.2</i> ”.
<b>Value(s) applied</b>	A default value of 0.1 has been applied.
<b>Choice of data or Measurement methods and procedures</b>	As indicated in the methodology applied.
<b>Purpose of data</b>	Calculation of baseline carbon stocks and changes in carbon stock
<b>Additional comment</b>	None

<sup>19</sup>[http://www.ipcc-nggip.iges.or.jp/public/gpplulucf/gpplulucf\\_files/Chp3/Anx\\_3A\\_1\\_Data\\_Tables.pdf](http://www.ipcc-nggip.iges.or.jp/public/gpplulucf/gpplulucf_files/Chp3/Anx_3A_1_Data_Tables.pdf) , page 3.168

<b>Data / Parameter</b>	$b_{FOREST}$
<b>Unit</b>	t d.m. ha-1
<b>Description</b>	Default above-ground biomass content in forest in the region/country where the A/R CDM project is located;
<b>Source of data</b>	Report on “Carbon Stock in India’s Forests” published by FSI, 2013.
<b>Value(s) applied</b>	A default value of 12.82 ton/ ha has been applied <sup>20</sup> .
<b>Choice of data or Measurement methods and procedures</b>	As indicated in the methodology applied.
<b>Purpose of data</b>	Calculation of baseline carbon stocks and changes in carbon stock
<b>Additional comment</b>	None

<b>Data / Parameter</b>	$R_{shrub}$
<b>Unit</b>	Dimensionless
<b>Description</b>	Root-shoot ratio appropriate for biomass stock, for shrub species
<b>Source of data</b>	Methodological tool “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities, Version 04.1.0”
<b>Value(s) applied</b>	A default value of 0.4 has been applied.
<b>Choice of data or Measurement methods and procedures</b>	As indicated in the methodology applied.
<b>Purpose of data</b>	Calculation of baseline carbon stocks and changes in carbon stock
<b>Additional comment</b>	None

<b>Data / Parameter</b>	$t_{val}$
<b>Unit</b>	Dimensionless
<b>Description</b>	Two-sided Student’s t-value, at infinite degrees of freedom in the first iteration and at degrees of freedom equal to (n-1) in subsequent iterations, for the required confidence level
<b>Source of data</b>	Student’s t-distribution table
<b>Value(s) applied</b>	1.645
<b>Choice of data or Measurement methods and procedures</b>	This is at the 90% confidence level in line with the CDM methodology
<b>Purpose of data</b>	Calculation of actual net GHG removals by sinks
<b>Additional comment</b>	None

<sup>20</sup>Carbon Stock in India’s Forest Report, 2013, page 34, Table 4.6

<b>Data / Parameter</b>	E
<b>Unit</b>	t d.m.(or t d.m.ha <sup>-1</sup> )
<b>Description</b>	Acceptable margin of error
<b>Source of data</b>	Default data from the tool: "Estimation of non-CO <sub>2</sub> GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity"
<b>Value(s) applied</b>	10%
<b>Choice of data or Measurement methods and procedures</b>	CDM methodology
<b>Purpose of data</b>	Calculation of actual net GHG removals by sinks
<b>Additional comment</b>	None

<b>Data / Parameter</b>	CFs
<b>Unit</b>	tC (tdry matter) -1
<b>Description</b>	Carbon fraction of shrub biomass
<b>Source of data</b>	Methodological tool: "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities (Version 04.2)". Referred in equation number 13.
<b>Value(s) applied</b>	0.47
<b>Choice of data or Measurement methods and procedures</b>	A default value of 0.47 is used following the A/R CDM methodological tool.
<b>Purpose of data</b>	Calculation of carbon stocks and changes in carbon stock
<b>Additional comment</b>	None

## D.2. Data and parameters monitored

<b>Data/parameter:</b>	<b><math>A_i</math></b>
<b>Unit</b>	Ha
<b>Description</b>	Area of stratum <i>i</i>
<b>Measured/calculated/default</b>	Measured
<b>Source of data</b>	Field survey

Value(s) of monitored parameter	<p>Area of stratum has been detailed in the Emission Reduction worksheets attached with this MR<sup>21</sup></p> <table border="1"> <thead> <tr> <th>Stratum i</th><th>Ai (Ha)</th></tr> </thead> <tbody> <tr> <td>Manpur babeena</td><td>49.48</td></tr> <tr> <td>Raseena</td><td>24.89</td></tr> <tr> <td>Kakarwai</td><td>44.24</td></tr> <tr> <td>Saraul</td><td>76.71</td></tr> <tr> <td>Khadaura</td><td>23.01</td></tr> <tr> <td>Parechha</td><td>19.74</td></tr> <tr> <td>Baraura</td><td>12.29</td></tr> <tr> <td>Kanaura</td><td>18.51</td></tr> <tr> <td><b>Total</b></td><td><b>268.87</b></td></tr> </tbody> </table>	Stratum i	Ai (Ha)	Manpur babeena	49.48	Raseena	24.89	Kakarwai	44.24	Saraul	76.71	Khadaura	23.01	Parechha	19.74	Baraura	12.29	Kanaura	18.51	<b>Total</b>	<b>268.87</b>
Stratum i	Ai (Ha)																				
Manpur babeena	49.48																				
Raseena	24.89																				
Kakarwai	44.24																				
Saraul	76.71																				
Khadaura	23.01																				
Parechha	19.74																				
Baraura	12.29																				
Kanaura	18.51																				
<b>Total</b>	<b>268.87</b>																				
Monitoring equipment	<p>The area is determined based on the GPS measurements. Two Different GPS machines are used</p> <ol style="list-style-type: none"> <li>1. GRAMIN Make eTrex</li> <li>2. GRAMIN Make GPSMAP 76CSx</li> </ol>																				
Measuring/reading/recording frequency:	At the start of project and every five years i.e. 2012, 2017, 2022, 2027, and 2032.																				
Calculation method (if applicable):	This involves measurement of area of each discrete parcel of land. GPS measurements (i.e. position and co-ordinates) of all the plots were taken. GPS coordinates were measured with GPS machine. Measured Coordinates has been initially recorded in to field Survey Sheets by survey team which is later entered in to Excel sheets at the project office. Random field checking was carried out.																				
QA/QC procedures:	<p>Random cross-checking of boundary measurements was carried out. In addition the measurements will also be cross checked by comparing it with the validated figures, to see if the values are comparable.</p> <p>GPS machines used for the measurement are self calibrated with magnetic calibration system. The devices will be calibrated automatically once it is switched off and switch it on. Manual calibrated procedure is clearly mentioned in the Manual to calibrate the machine manually whenever it is required. Field team was well trained on the same.</p> <p>Measurements and recording was done by trained personnel.</p>																				
Purpose of data:	Calculation of the actual net GHG removal by sinks. The same was in equation 13 and 14 of the applied AR Tool 14.																				
Additional comments:	Trainings to the field staff with regards to collection, compilation and uses of instruments is ensured before proceeding to data collection activity.																				

<b>Data/parameter:</b>	DBH
Unit	cm
Description	Diameter at breast height of tree
Measured/calculated/default	Measured & calculated
Source of data	Field measurements within the sample plots
Value(s) of monitored parameter	Refer ER calculation excel sheet

<sup>21</sup>Emission Reduction Worksheet has been provided to DOE

Monitoring equipment	GBH is measured in measuring tape
Measuring/reading/recording frequency:	At the start of the project activity and every five years
Calculation method (if applicable):	Measured all tree species that are equal or more than 10 cm girth within the sample plot. Girth of the tree is measured at 1.37 m height. DBH is measured with measurement tape. Measured data is initially recorded in the survey sheets which is later entered in to Excel format for CER calculation. From the Girth at breast height (GBH), DBH is calculated using the formula $DBH = GBH / (\pi)$
QA/QC procedures:	Standard operating procedures are made to ensure the correct and validating data collection for each of the monitoring parameters.
Purpose of data:	To calculate the stem volume of trees within the sample plot this is then used for estimating carbon sink. The same was in allometric equations to calculate the biomass/volume of the trees.
Additional comments:	None

<b>Data/parameter:</b>	<b>H</b>
Unit	cm / mts
Description	Height of the tree
Measured/calculated/default	Measured & calculated
Source of data	<i>Ex-post</i> estimation shall be based on actual measurements and recorded field data entry sheets and subsequently data entry spread sheets.
Value(s) of monitored parameter	Refer ER calculation excel sheet
Monitoring equipment	Measurement Tape
Measuring/reading/recording frequency:	At the start of the project activity and every five years since the initial verification and certification of an A/R project activity under the CDM
Calculation method (if applicable):	Measured height of all tree within the sample plot with the help of graduated poles with a help of the measuring tape. Measured data was initially recorded in the survey sheets which was later entered in to Excel format for CER calculation.
QA/QC procedures:	Standard operating procedures were made to ensure the correct and validating data collection for each of the monitoring parameters. Validation was done by randomly checking the sample plots and also using oculatory measurements.
Purpose of data:	To measure the height of the tree existing within the sample plot. To be used to calculate volume (and subsequently the biomass) of trees during verification. Instead of volume equations algometric equations may also be used.
Additional comments:	The Ravi altimeter was planned for use to measure the height of the trees. But the anticipated growth of trees were not there, the Project proponent used graduated poles to measue the tree height. The PP is planned to use the bamboo sticks for the height measurement in future for trees upto the height of 7m. The trees with more than 7m height will be measured using ravi altimeter or any other sophisticated accurate measuring instrument as per the best forest practices available at the time of monitoring. For having a conservative and correct estimate. As per SOP Ravi altimetre is used for trees with more than 5 metres height. Pole method is used and on conservative basis the height is rounded down to the multiple of 0.5 i.e., if the height is 4.7 m it has been taken to be 4.5 m and if the height is 4.4 m it will be taken as 4 m. Also for next verification the same approach will be used for smaller trees

<b>Data/parameter:</b>	<b><math>B_{Trees}</math></b>
Unit	Number/dimensionless
Description	Number of Baseline Trees
Measured/calculated/default	Measured
Source of data	Field monitoring within the sample plots
Value(s) of monitored parameter	Refer ER calculation excel sheet
Monitoring equipment	No equipment is involved.
Measuring/reading/recording frequency:	At the start of the project activity and every five years since the initial verification and certification of an A/R project activity under the CDM
Calculation method (if applicable):	NA
QA/QC procedures:	Standard operating procedures are made to ensure the correct and validating data collection for each of the monitoring parameters.
Purpose of data:	To monitor the baseline tree
Additional comments:	None

<b>Data/parameter:</b>	<b>N</b>
Unit	Number/dimensionless
Description	Total number of possible sample plots within the project boundary
Measured/calculated/default	Calculated
Source of data	PDD
Value(s) of monitored parameter	5377.40 (~5378)
Monitoring equipment	NA
Measuring/reading/recording frequency:	Measured at each verification events
Calculation method (if applicable):	N is equal to project area divided by the size of the sample plots Total area = 268.87 ha Sample plot area = 0.05 ha N = 5377.40
QA/QC procedures:	NA
Purpose of data:	Calculation of actual net GHG removals by sinks
Additional comments:	None

<b>Data/parameter:</b>	<b><math>w_i</math></b>																		
Unit	Number/dimensionless																		
Description	Relative weight of the area of stratum i																		
Measured/calculated/default	Calculated																		
Source of data	Calculated value (Refer calculation in PDD)																		
Value(s) of monitored parameter	<table border="1"> <thead> <tr> <th>Stratum i</th><th><math>w_i</math></th></tr> </thead> <tbody> <tr> <td>Sukath</td><td>0.134</td></tr> <tr> <td>Mudpela</td><td>0.140</td></tr> <tr> <td>Kharka Dabar</td><td>0.133</td></tr> <tr> <td>Gaderiya</td><td>0.051</td></tr> <tr> <td>Baddiha</td><td>0.149</td></tr> <tr> <td>Dari</td><td>0.073</td></tr> <tr> <td>Sikikala</td><td>0.060</td></tr> <tr> <td>Gauraiya Kala</td><td>0.078</td></tr> </tbody> </table>	Stratum i	$w_i$	Sukath	0.134	Mudpela	0.140	Kharka Dabar	0.133	Gaderiya	0.051	Baddiha	0.149	Dari	0.073	Sikikala	0.060	Gauraiya Kala	0.078
Stratum i	$w_i$																		
Sukath	0.134																		
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Gaderiya	0.051																		
Baddiha	0.149																		
Dari	0.073																		
Sikikala	0.060																		
Gauraiya Kala	0.078																		

	Unchdiha	0.063	
	Madanpur	0.103	
	Lakhnauti	0.018	
Monitoring equipment	NA		
Measuring/reading/recording frequency:	Measured at each verification event		
Calculation method (if applicable):	The relative weight of the area of a stratum i is equal to the area of the stratum i divided by the project area		
QA/QC procedures:	NA		
Purpose of data:	Calculation of actual net GHG removals by sinks		
Additional comments:	None		

<b>Data/parameter:</b>	si <sup>2</sup>	
<b>Unit</b>	(t d.m.ha <sup>-1</sup> ) <sup>2</sup>	
<b>Description</b>	Variance of tree biomass per ha in stratum i	
<b>Measured/calculated/default</b>	Calculated	
<b>Source of data</b>	Data obtained from the plantation or from similar plantations	
<b>Value(s) of monitored parameter</b>	<b>Stratum name</b>	<b>Si<sup>2</sup></b>
	Manpur babeena	97.57
	Raseena	7.93
	Kakarwai	7.94
	Saraul	5.21
	Khadaura	1.49
	Parechha	15.77
	Baraura	35.41
	Kanaura	22.96
<b>Monitoring equipment</b>	NA	
<b>Measuring/reading/recording frequency:</b>	Measured at each verification event	
<b>Calculation method (if applicable):</b>	NA	
<b>QA/QC procedures:</b>	Approximate value of the variance of tree biomass in each stratum is either known from existing data related to the project area or estimated from existing preliminary samples.	
<b>Purpose of data:</b>	Calculation of actual net GHG removals by sinks. The same shall be used in the equation 1 of the tool "Calculation of the number of sample plots for measurements within A/R CDM Project Activities"	
<b>Additional comments:</b>	NA	

### D.3. Implementation of sampling plan

>>

As per the registered PDD Sample plots determined during the project validation were used for the first monitoring period. Stratified Random sampling was adopted based on the  $w_i$  value to lay the sample plots. Grains of rice were spread randomly on the map of the plot and wherever the grains fell, that area was taken as sample plot. For example, in case of Manpur Babeena the number of plots to be laid were seven. For year

2012 the number of sample plots were 4, therefore, four rice grains were randomly spread over the map of parcel of Manpur Babeena (for first phase) and wherever those rice grains fell, there the sample plot centre point was taken and the sample plot was laid. For the year 2013, number of sample plots to be laid were 2 and two rice grains were spread over the map of the parcel land and similarly for the year 2014, one rice grain was spread over that map of the third phase parcel land. Like wise for all JFMCs the sample plot was laid. The plots were rectangular and of the size 25m x 20m, if the grains fall outside the map, the exercise will be repeated. The point of grain will be centre point taken for rectangular sample plot. Also care is taken that the sample plot will be atleast 7.5 meters away from the boundary of the JFMC as per the SOP. The post-stratification map was to be created with the help of GIS after the first monitoring to concentrate on the possible changes of the project boundary and planting timing with respect to the project design, and to respond any differences in growth conditions in comparison with the expected values in Project Design Document. The following factors were considered in the post stratification:

- Catastrophic disturbances such as fire, pest, or disease outbreaks were taken into account
- The grassland vegetation influence on stand development
- Silvicultural and management activities will be implemented at different intervals and locations than those proposed at the beginning of the project

However no stratification is required as the above factors were not there during the monitoring period.

The first project monitoring started from 2016 while subsequent monitoring of project sites will be scheduled after every five year till the project duration. Stratified random sampling design in each of the project stratum has been adopted for laying out sample plots for measuring field data i.e. measurement of GBH, Height etc. Monitoring plan for the project is developed for systematic and scientific monitoring of the project data comprising various parameters.

### **Sampling design:**

The sampling design for monitoring the changes in carbon stocks of above ground biomass is adopted from the *“Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities; (Version 4.1.0)”* and further referred with *“Calculation of the number of sample plots for measurements within AR CDM project activities; (Version 02.1.0.)”*<sup>22</sup>

The sampling design and the calculation of sample plots for the verification is based on the approach described in the registered PDD.

### **Sampling Frame:**

To measure and monitor the changes in carbon stocks of above ground biomass,, permanent sampling plots was laid out. The sample plots were laid out with the help of the geo coordinates taken through the GPS. All the plots were duly numbered and geo-referenced within the project area. Number of sample plots as estimated through tool *“Calculation of the number of sample plots for measurements within AR CDM project activities; (Version 02.1.0.)”* is 40 for monitoring the continuous changes in carbon stocks over a period of time.

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<sup>22</sup><http://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-03-v2.1.0.pdf>

**Sample Size:**

The number of plots to be established depends upon the number of species, number of strata identified, monitoring precision and confidence interval with the appropriate associated cost-effectiveness criteria. The sample size (n) is estimated with fixed levels of precision (10% of mean biomass of a specific strata), and value at 90% of the confidence interval with the assumption of no cost differences exist between strata and sub-strata, as described by the tool “*Calculation of the number of sample plots for measurements within A/R CDM project activities*” in methodology used for calculating sample size. With the fundamentals from the project and the biomass stock estimates, the calculation is made using equation 1 from the tool.

$$n = \frac{N * t_{VAL}^2 * \left( \sum_i w_i * s_i \right)^2}{N * E^2 + t_{VAL}^2 * \sum_i w_i * s_i^2}$$

- $n$  = Number of sample plots required for estimation of biomass stocks within the project boundary; dimensionless
- $N$  = Total number of possible sample plots within the project boundary (i.e. the sampling space or the population); dimensionless
- $t_{VAL}$  = Two-sided Student's t-value, at infinite degrees of freedom, for the required confidence level; dimensionless
- $w_i$  = Relative weight of the area of stratum i (i.e. the area of the stratum i divided by the project area); dimensionless
- $s$  = Estimated standard deviation of biomass or volume (t d.m. ha<sup>-1</sup>) in stratum i (when it is not available, instead 50% of the estimated volume, biomass, etc. Good Practice Guidance, 2003).
- $i$  = 1, 2, 3, Biomass stock estimation for strata i within the project boundary.

Total area	=	268.87 ha
Sample plot area	=	0.05 ha
N	=	5377.40
tval $\infty$	=	1.645

The required sample plots for each JFMC is taken from registered PDD for the first verification is shown from the below table.

Stratum	Stratum Area (Ha)	Wi	Si	ni
Khadaura	23.01	0.08558	0.336999	3
Kakarwai	44.24	0.16454	0.32479	3
Saraul	76.71	0.285305	0.705439	4
Kanaura	18.51	0.068844	1.384602	4
Parechha	19.74	0.073418	1.420092	3
Baraura	12.29	0.04571	5.92002	5
Raseena	24.89	0.092573	8.473829	4
Manpur-Babina	49.48	0.184029	7.183328	6
	<b>268.87</b>			<b>32</b>

Hence,

$$N \times t_{val}^2 \times (\sum w_i \times s)^2 = 5377.4 \times [1.645]^2 \times 2.50026$$

$$= 36382.33$$

$$N \times E^2 + t_{val}^2 \times \sum w_i^2 = 5377.4 \times [0.45728]^2 + [1.645]^2 \times 18.1943$$

$$= 1173.68$$

$$N = 32$$

Number of Sample Plot Required at first verification = **32**

However the sample size are increased to accommodate more samples to proportionately take the sample plots as per the year of plantation. The sample plots are given in the excel sheets.

S.No	Name of the JFMC	No. of Sample Plots
1	Manpur babeena	7
2	Raseena	4
3	Kakarwai	6
4	Saraul	10
5	Khadaura	4
6	Parechha	3
7	Baraura	2
8	Kanaura	3
	Total	<b>39</b>

## SECTION E. Calculation of emission reductions or GHG removals by sinks

### E.1. Calculation of baseline emissions or baseline net GHG removals by sinks

>>

In accordance with the latest version 03 of the methodology AR-AMS0007, the baseline net GHG removals by sinks is estimated using equation 1 of the methodology as follows:

$$\Delta C_{BSL,t} = \Delta C_{TREE-BSL,t} + \Delta C_{SHRUB-BSL,T} + \Delta C_{DW-BSL,t} + \Delta C_{LI-BSL,T}$$

However with reference to paragraph 11 of the methodological tool “*Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities*” baseline carbon stocks of SSC A/R CDM project can be considered to be zero conservatively. As per this, the tool lays three conditions so that carbon stock in baseline trees can be considered as zero. The justification is provided in the table below.

As per Paragraph 11 of AR-TOOL 14	Justification
The pre-project trees are neither harvested, nor cleared, nor removed throughout the crediting period of the project activity;	The pre project trees were not harvested or removed during the monitoring period. They will not be removed during the whole of the crediting period of the project activity.
The pre-project trees do not suffer mortality because of competition from trees planted in the project, or damage because of implementation of the project	Plantation activities were done in such a way that these pre-project trees do not suffer mortality due to competition. All existing trees are left as it is, and a

activity, at any time during the crediting period of the project activity	clear spacing is left to ensure there is no competition to the pre-project trees from the project trees.
The pre-project trees are not inventoried along with the project trees in monitoring of carbon stocks but their continued existence, consistent with the baseline scenario, is monitored throughout the crediting period of the project activity	The pre-project trees not inventoried along with the project trees. In fact to ensure conservative value, the carbon content of all the pre-project trees are subtracted in year 1 itself. These were not part of the measurement and reporting of the SSC A/R CDM project activity.

Hence the carbon stock change in pre-project trees is estimated as zero.

$$\Delta C_{BSL,t} = 0$$

However to be conservative project proponent is deducting the total carbon stock in the preproject scenario from the first year actual net GHG removals by sinks.

Verification Period	Baseline Emissions
01/01/2012 to 06/06/2016	1811 tCO <sub>2</sub> -e

## E.2. Calculation of project emissions or actual net GHG removals by sinks

>>

As per §19 of the methodology, the actual net GHG removals by sinks is calculated as follows:

$$\Delta C_{ACTUAL,t} = \Delta C_{P,t} - GHG_{E,t}$$

Where:

$\Delta C_{ACTUAL,t}$	Actual net GHG removals by sinks, in year $t$ ; tCO <sub>2</sub> -e
$\Delta C_{P,t}$	Change in the carbon stocks in project, occurring in the selected carbon pools, in year $t$ ; tCO <sub>2</sub> -e
$GHG_{E,t}$	Increase in non-CO <sub>2</sub> GHG emissions within the project boundary as a result of the implementation of the A/R CDM project activity, in year $t$ , as calculated in the tool “Estimation of non-CO <sub>2</sub> GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity”; tCO <sub>2</sub> -e

As per §9 of the applied methodology, increase in non-CO<sub>2</sub> GHG emissions within the project boundary as a result of the implementation of the project activity is calculated as per the tool “*Estimation of non-CO<sub>2</sub> GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity*” (version 4.0.0). The pre and post project activities does not involve in the burning of biomass or forest fires, or usage of fire for

site preparation or usage of fire to clear land of harvest residue prior to replanting of land. The area affected by fire is estimated to be 0% or extremely negligible.

Hence  $GHG_{E,t} = 0$

As per the equation 3 of the methodology:

$$\Delta C_{p,t} = \Delta C_{TREE_{PROJ},t} + \Delta C_{SHRUB_{PROJ},t} + \Delta C_{DW_{PROJ},t} + \Delta C_{LI_{PROJ},t} + \Delta SOC_{AL,t}$$

Where

$\Delta C_{p,t}$  Change in the carbon stocks in project, occurring in the selected carbon pools, in year t; t CO2-e

$\Delta C_{TREE_{PROJ},t}$  Change in carbon stock in tree biomass in project in year t, as estimated in the tool “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities”; t CO2-e

$\Delta C_{SHRUB_{PROJ},t}$  Change in carbon stock in shrub biomass in project in year t, as estimated in the tool “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities”; t CO2-e

$\Delta C_{DW_{PROJ},t}$  Change in carbon stock in dead wood in project in year t, as estimated in the tool “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities”; t CO2-e

$\Delta C_{LI_{PROJ},t}$  Change in carbon stock in litter biomass in project in year t, as estimated in the tool “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities”; t CO2-e

$\Delta SOC_{AL,t}$  Change in carbon stock in SOC in project, in year t, as estimated in the tool “Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities”; tCO2-e

As per methodology, the changes in carbon stock in the project are equal to the changes in carbon stock in all the carbon pools.

Only changes in the carbon stock in trees are accounted for in the project scenario. This is also conservative. Carbon content of the pre-project scenario is deducted for reasons of conservativeness.

Hence,

$$\Delta C_{p,t} = \Delta C_{TREE_{PROJ},t}$$

Where:

$\Delta C_{p,t}$  Change in the carbon stocks in project, occurring in the selected carbon pools, in year t; t CO2-e

$\Delta C_{TREE_{PROJ},t}$  Change in carbon stock in tree biomass in project in year t, as estimated in the tool “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in

A/R CDM project activities"; t CO2-e

$\Delta C_{TREE\_PROJ,t}$  is calculated as per equation 12, §35 of the AR-TOOL 14

$$C_{TREE\_PROJ,t} = \frac{44}{12} \times CF_{TREE\_PROJ,t} \times B_{TREE\_PROJ,t}$$

$CF_{TREE\_PROJ,t}$  Carbon to carbon dioxide conversion factor

$B_{TREE\_PROJ,t}$  Tree biomass in the tree biomass estimation strata; t d.m; given in the ER calculation spread sheet

In the project scenario, the stratification is based on the species. Even though the harvesting cycle is of more than 25 years, the management practice depends on the species planted. The carbon change in each of the strata (as per the species) shall be quantified.

As per equation 13 and 14 of §35 of the AR-TOOL 14:

$$B_{TREE} = A \times b_{TREE}$$

$$b_{TREE} = \sum_{i=1}^M w_i \times b_{TREE,i}$$

Where:

$B_{TREE}$  Tree biomass in the tree biomass estimation strata; t d.m.

$w_i$  Ratio of the area of the stratum I to the sum of areas of tree biomass estimation strata (i.e.  $w_i = A_i/A$ ); dimensionless

$b_{TREE,i}$  Mean tree biomass per hectare in stratum I; t d.m. ha<sup>-1</sup>

A Sum of areas of the tree biomass estimation strata; ha

Mean tree biomass per hectare has been calculated from mean tree volume per hectare. From the mean tree biomass per hectare, total tree biomass per stratum per species ( $B_{TREE\_PROJ,t}$ ) has been calculated.

For E.g

For calculating the B Tree value, the height (H) and Girth at breast height (GBH) of the trees were measured. GBH was then converted into DBH by using the formula

$$DBH = GBH / (22/7) \text{ (All the values were in metre)}$$

The appropriate volume equations were used to calculate the stem volume of each tree using the height and DBH of the trees. The stem volume equations were derived from Indian State of Forest Report, 2011 and Forest Survey of India-Volume Equations for forests of India, Nepal and Bhutan (1996). Using the stem volume of each tree the  $B_{(TREE,i)}$  value for each tree was calculated using the formula:

$B_{(TREE,i)} = \text{Stem volume} \times \text{Density} \times \text{BEF} \times \{1 + \text{Root shoot ratio}\}$  (Both Above ground Biomass & Below ground Biomass accounted)

Further, the  $B_{(TREE,i)}$  value of each tree in a sample plot was added and divided by the sample plot area (0.05 Ha) to calculate the  $b_{TREE,p,i}$  value. Similarly the  $b_{TREE,p,i}$  value were calculated for all the sample

plots of the particular JFMC and were summed up to calculate the biomass value of the total area which was then added to the shrub biomass. The detailed calculations are presented in the CER calculation sheets.

The summary of  $\Delta C_{TREEPROJ,t}$  calculation for the monitoring period is given below:

S. No	Stratum i	Ai (Ha)	wi	bTREE,i (t d.m./ha)	wi * bTREEi	bTREE (t d.m./ha)	BTREE (t d.m.)	CFTREE (tC t d/m <sup>3</sup> )	CTREE (t CO2e)
1	Manpur babeena	49.48	0.18	21.76	4.00	14.74	3962.51	0.47	6828.73
2	Raseena	24.89	0.09	16.64	1.54				
3	Kakarwai	44.24	0.16	13.46	2.21				
4	Saraul	76.71	0.29	9.46	2.70				
5	Khadaura	23.01	0.09	12.83	1.10				
6	Parechha	19.74	0.07	20.17	1.48				
7	Baraura	12.29	0.05	17.34	0.79				
8	Kanaura	18.51	0.07	13.20	0.91				
	Total (A)	268.87		124.84					

The Shrub biomass calculation is presented below, as per the equation 26 and 27 of the AR tool 14.

The equation 26 is

$$C_{SHRUB,t} = 44/12 \times CF_s \times (1+R_s) \times \sum (A_{SHRUB,i} \times b_{SHRUB,i})$$

$$b_{SHRUB,i} = BDR_{SF} \times b_{FOREST} \times CC_{SHRUB,i}$$

where

$C_{SHRUB,t}$  = Carbon stock in shrubs within the project boundary at a given point of time in year  $t$ ; t CO<sub>2</sub>-e

$CF_s$  = Carbon fraction of shrub biomass; t C (t.d.m.)<sup>-1</sup>

A default value of 0.47 is used unless transparent and verifiable information can be provided to justify a different value.

$R_s$  = Root-shoot ratio for shrubs; dimensionless.

The default value of 0.40 is used unless transparent and verifiable information can be provided to justify a different value.

$A_{SHRUB,i}$  = Area of shrub biomass estimation stratum  $i$ ; ha

$b_{SHRUB,i}$  = Shrub biomass per hectare in shrub biomass estimation stratum  $i$ ; t d.m. ha<sup>-1</sup>

$BDR_{SF}$  = Ratio of shrub biomass per hectare in land having a shrub crown cover of 1.0 (i.e. 100 per cent) and the default above-ground biomass content per hectare in forest in the region/country where the A/R CDM project activity is located; dimensionless.

A default value of 0.10 should be used unless transparent and verifiable information can be provided to justify a different value.

$b_{FOREST}$  = Above-ground biomass content in forest in the region/country where the A/R CDM project activity is located; t d.m. ha<sup>-1</sup>. Above Ground Biomass of the stratum is used.

$CC_{SHRUB, i}$  = Crown cover of shrubs in shrub biomass estimation stratum  $i$  at the time of estimation, expressed as a fraction (e.g. 10 per cent crown cover implies  $CC_{SHRUB, i} = 0.10$ ); dimensionless

Stratum $i$	BDRsf	$b_{FOREST}$	$CC_{shrub, i}$	$b_{shrub, i}$	CFs	Rs	Ai (Ha)	Cshrub, $i$
Manpur babeena	0.1	119.92	0.1	1.199171	0.47	0.4	49.48	143.1555
Raseena	0.1	52.40	0.1	0.523966	0.47	0.4	24.89	31.46484
Kakarwai	0.1	63.59	0.1	0.635935	0.47	0.4	44.24	67.87744
Saraul	0.1	74.50	0.1	0.74503	0.47	0.4	76.71	137.887
Khadaura	0.1	40.40	0.1	0.40402	0.47	0.4	23.01	22.42938
Parechha	0.1	47.64	0.1	0.476402	0.47	0.4	19.74	22.68916
Baraura	0.1	27.30	0.1	0.273003	0.47	0.4	12.29	8.095005
Kanaura	0.1	31.18	0.1	0.311753	0.47	0.4	18.51	13.92239
								<b>447.5207</b>

Thus

$$\Delta C_{ACTUAL, t} = \Delta C_{TREE_{PROJ}, t} + \Delta C_{SHRUB_{PROJ}, t}$$

$$= 6828 + 447 = 7275$$

Also the Uncertainty is calculated is as per AR tool 14 and it is 9.23% refer to the CER calculation sheets . "uncertainty and shrub biomass" sheet. Hence discount factors are not applied.

### E.3. Calculation of leakage

As per §21 of the methodology, leakage emission is calculated as follows:

$$LK_t = LK_{AGRIC, t}$$

Where:

$LK_t$  GHG emissions due to leakage, in year  $t$ ; tCO<sub>2</sub>-e

$LK_{AGRIC, t}$  Leakage due to the displacement of agricultural activities in year  $t$ , as calculated in the tool "Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity"; tCO<sub>2</sub>-e

Shifting of grazing activities was the only applicable leakage for the project. According to the PDD, it was considered to be zero. Hence, the leakage for the project is zero.

$$LK_t = LK_{AGRIC,t} = 0$$

#### E.4. Summary of calculation of emission reductions or net GHG removals by sinks

As per §22 of the methodology, the net anthropogenic GHG removals by the sinks is calculated as follows:

$$\Delta C_{AR-CDM,t} = \Delta C_{ACTUAL,t} - \Delta C_{BSL,t} - LK_t$$

Where:

$\Delta C_{AR-CDM,t}$	Net anthropogenic GHG removals by sinks, in year $t$ ; tCO <sub>2</sub> -e
$\Delta C_{ACTUAL,t}$	Actual net GHG removals by sinks, in year $t$ ; tCO <sub>2</sub> -e
$\Delta C_{BSL,t}$	Baseline net GHG removals by sinks, in year $t$ ; tCO <sub>2</sub> -e
$LK_t$	GHG emissions due to leakage, in year $t$ ; tCO <sub>2</sub> -e

Item	Baseline emissions or baseline net GHG removals by sinks (tCO <sub>2</sub> e)	Project emissions or actual net GHG removals by sinks (tCO <sub>2</sub> e)	Leakage (tCO <sub>2</sub> e)	GHG emission reductions or net GHG removals by sinks (tCO <sub>2</sub> e) achieved in the monitoring period		
				Up to 31/12/2012	From 01/01/2013	Total amount (tCO <sub>2</sub> e)
Total	1811	7275	0	-	-	5,464

#### E.5. Comparison of actual emission reductions or net GHG removals by sinks with estimates in registered PDD

Item	Values estimated in ex ante calculation of registered PDD	Actual values achieved during this monitoring period
Emission reductions or GHG removals by sinks (t CO <sub>2</sub> e)	7,236 (tCO <sub>2</sub> e)	5,464 (tCO <sub>2</sub> e)

#### E.6. Remarks on difference from estimated value in registered PDD

The actual GHG removal by sink is less than the estimated GHG removal by sink. Hence, no more justification is required.

## Appendix 1.

## Contact information of project participants and responsible persons/entities

<b>Project participant and/or responsible person/ entity</b>	<input checked="" type="checkbox"/> Project participant <input checked="" type="checkbox"/> Responsible person/ entity for application of the selected methodology (ies) and, where applicable, the selected standardized baselines to the project activity
<b>Organization name</b>	M/s Divisional Forest Officer (DFO), Jhansi Forest Division
<b>Street/P.O. Box</b>	121, Civil Lines, M/s Divisional Forest Office, near Allahabad Bank Crossing
<b>Building</b>	Forest Department Building
<b>City</b>	Jhansi
<b>State/Region</b>	Uttar Pradesh
<b>Postcode</b>	284001
<b>Country</b>	India
<b>Telephone</b>	91-95329988245
<b>Fax</b>	0510-2370037
<b>E-mail</b>	<a href="mailto:dmujhansi@gmail.com">dmujhansi@gmail.com</a> , <a href="mailto:dfojhansi@gmail.com">dfojhansi@gmail.com</a>
<b>Website</b>	<a href="http://www.uppfmpap.org">www.uppfmpap.org</a>
<b>Contact person</b>	Mr. Atul Jindal
<b>Title</b>	Project Director (M & E), Conservation of Forests
<b>Salutation</b>	Mr.
<b>Last name</b>	Jindal
<b>Middle name</b>	Kumar
<b>First name</b>	Atul
<b>Department</b>	Uttar Pradesh Forest Department
<b>Mobile</b>	91-9453008238
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<b>Project participant and/or responsible person/ entity</b>	<input checked="" type="checkbox"/> Responsible person/ entity for application of the selected methodology (ies) and, where applicable, the selected standardized baselines to the project activity <input type="checkbox"/> Project participant
<b>Organization name</b>	The Energy and Resources Institute
<b>Street/P.O. Box</b>	Lodhi Road
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<b>State/Region</b>	New Delhi
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**Appendix 2: Geographoical delineation of Project Boundary.****Table 1: Saraul JFMC of Chirgaon Forest Range, Plantation in 2012**

<b>JFMC</b>	<b>Longitude</b>	<b>Latitude</b>	<b>Project Area (ha)</b>	<b>Year</b>	<b>Removed patches</b>
Saraul	78.83592	25.47257	13.44	2012	
Saraul	78.83599	25.47257			
Saraul	78.83603	25.47252			
Saraul	78.83604	25.47252			
Saraul	78.83605	25.47251			
Saraul	78.83618	25.47246			
Saraul	78.83636	25.47244			
Saraul	78.83641	25.47246			
Saraul	78.83656	25.47245			
Saraul	78.83664	25.47249			
Saraul	78.83678	25.47243			
Saraul	78.83680	25.47244			
Saraul	78.83692	25.47247			
Saraul	78.83711	25.47243			
Saraul	78.83718	25.47245			
Saraul	78.83738	25.47239			
Saraul	78.83745	25.47237			
Saraul	78.83755	25.47238			
Saraul	78.83767	25.47234			
Saraul	78.83777	25.47235			
Saraul	78.83805	25.47226			
Saraul	78.83817	25.47228			
Saraul	78.83836	25.47222			
Saraul	78.83860	25.47228			
Saraul	78.83887	25.47243			
Saraul	78.83896	25.47243			
Saraul	78.83907	25.47233			

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Saraul	78.83925	25.47190			
Saraul	78.83937	25.47153			
Saraul	78.83939	25.47151			
Saraul	78.83940	25.47143			
Saraul	78.83936	25.47141			
Saraul	78.83936	25.47139			
Saraul	78.83937	25.47139			
Saraul	78.83937	25.47137			
Saraul	78.83931	25.47135			
Saraul	78.83935	25.47129			
Saraul	78.83938	25.47129			
Saraul	78.83940	25.47130			
Saraul	78.83942	25.47132			
Saraul	78.83951	25.47133			
Saraul	78.83957	25.47129			
Saraul	78.83959	25.47130			
Saraul	78.83960	25.47129			
Saraul	78.83969	25.47130			
Saraul	78.83972	25.47128			
Saraul	78.83975	25.47128			
Saraul	78.83978	25.47126			
Saraul	78.83981	25.47125			
Saraul	78.83983	25.47120			
Saraul	78.84012	25.47100			
Saraul	78.84031	25.47098			
Saraul	78.84037	25.47099			
Saraul	78.84042	25.47098			
Saraul	78.84050	25.47100			
Saraul	78.84061	25.47101			

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Saraul	78.84062	25.47103			
Saraul	78.84083	25.47110			
Saraul	78.84098	25.47111			
Saraul	78.84103	25.47113			
Saraul	78.84120	25.47108			
Saraul	78.84113	25.47099			
Saraul	78.84116	25.47100			
Saraul	78.84112	25.47096			
Saraul	78.84101	25.47096			
Saraul	78.84096	25.47098			
Saraul	78.84088	25.47098			
Saraul	78.84084	25.47096			
Saraul	78.84071	25.47096			
Saraul	78.84026	25.47084			
Saraul	78.83924	25.47105			
Saraul	78.83902	25.47095			
Saraul	78.83830	25.47090			
Saraul	78.83828	25.47088			
Saraul	78.83814	25.47086			
Saraul	78.83790	25.47078			
Saraul	78.83780	25.47067			
Saraul	78.83768	25.47066			
Saraul	78.83768	25.47065			
Saraul	78.83756	25.47059			
Saraul	78.83749	25.47059			
Saraul	78.83748	25.47058			
Saraul	78.83732	25.47059			
Saraul	78.83731	25.47058			
Saraul	78.83720	25.47062			

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Saraul	78.83714	25.47061			
Saraul	78.83681	25.47063			
Saraul	78.83681	25.47061			
Saraul	78.83677	25.47062			
Saraul	78.83669	25.47069			
Saraul	78.83660	25.47070			
Saraul	78.83660	25.47075			
Saraul	78.83656	25.47081			
Saraul	78.83657	25.47088			
Saraul	78.83647	25.47088			
Saraul	78.83643	25.47083			
Saraul	78.83639	25.47084			
Saraul	78.83638	25.47087			
Saraul	78.83641	25.47091			
Saraul	78.83650	25.47091			
Saraul	78.83653	25.47095			
Saraul	78.83652	25.47101			
Saraul	78.83643	25.47101			
Saraul	78.83643	25.47108			
Saraul	78.83638	25.47114			
Saraul	78.83628	25.47117			
Saraul	78.83616	25.47114			
Saraul	78.83607	25.47105			
Saraul	78.83607	25.47095			
Saraul	78.83614	25.47083			
Saraul	78.83600	25.47086			
Saraul	78.83561	25.47096			
Saraul	78.83560	25.47095			
Saraul	78.83539	25.47096			

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Saraul	78.83531	25.47102			
Saraul	78.83527	25.47101			
Saraul	78.83488	25.47109			
Saraul	78.83455	25.47146			
Saraul	78.83426	25.47115			
Saraul	78.83423	25.47077			
Saraul	78.83380	25.47025			
Saraul	78.83314	25.47024			
Saraul	78.83281	25.47056			
Saraul	78.83247	25.47072			
Saraul	78.83255	25.47134			
Saraul	78.83276	25.47143			
Saraul	78.83307	25.47135			
Saraul	78.83304	25.47213			
Saraul	78.83297	25.47227			
Saraul	78.83304	25.47247			
Saraul	78.83322	25.47276			
Saraul	78.83329	25.47280			
Saraul	78.83333	25.47289			
Saraul	78.83338	25.47291			
Saraul	78.83347	25.47293			
Saraul	78.83351	25.47297			
Saraul	78.83354	25.47298			
Saraul	78.83361	25.47298			
Saraul	78.83364	25.47302			
Saraul	78.83393	25.47307			
Saraul	78.83404	25.47314			
Saraul	78.83423	25.47319			
Saraul	78.83427	25.47318			

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Saraul	78.83432	25.47320			
Saraul	78.83449	25.47321			
Saraul	78.83455	25.47316			
Saraul	78.83464	25.47317			
Saraul	78.83469	25.47323			
Saraul	78.83473	25.47337			
Saraul	78.83483	25.47336			
Saraul	78.83487	25.47339			
Saraul	78.83527	25.47303			
Saraul	78.83550	25.47269			
Saraul	78.83587	25.47260			
Saraul	78.83535	25.47267			
Saraul	78.83532	25.47271			
Saraul	78.83748	25.47165			
Saraul	78.83745	25.47162			
Saraul	78.83746	25.47157			
Saraul	78.83752	25.47153			
Saraul	78.83745	25.47146			
Saraul	78.83743	25.47147			
Saraul	78.83742	25.47153			
Saraul	78.83740	25.47155			
Saraul	78.83736	25.47151			
Saraul	78.83738	25.47144			
Saraul	78.83736	25.47146			
Saraul	78.83735	25.47150			
Saraul	78.83723	25.47144			
Saraul	78.83722	25.47141			
Saraul	78.83719	25.47140			
Saraul	78.83713	25.47151			

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Saraul	78.83706	25.47150			
Saraul	78.83702	25.47146			
Saraul	78.83700	25.47140			
Saraul	78.83692	25.47133			
Saraul	78.83693	25.47130			
Saraul	78.83691	25.47127			
Saraul	78.83686	25.47124			
Saraul	78.83691	25.47119			
Saraul	78.83704	25.47119			
Saraul	78.83711	25.47118			
Saraul	78.83712	25.47122			
Saraul	78.83713	25.47123			
Saraul	78.83721	25.47119			
Saraul	78.83730	25.47123			
Saraul	78.83742	25.47121			
Saraul	78.83756	25.47124			
Saraul	78.83765	25.47130			
Saraul	78.83764	25.47138			
Saraul	78.83765	25.47141			
Saraul	78.83776	25.47145			
Saraul	78.83781	25.47155			
Saraul	78.83781	25.47160			
Saraul	78.83778	25.47164			
Saraul	78.83774	25.47164			
Saraul	78.83768	25.47167			
Saraul	78.83526	25.47269			Patch - 1
Saraul	78.83526	25.47262			Patch - 1
Saraul	78.83533	25.47254			Patch - 1
Saraul	78.83540	25.47229			Patch - 1

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Saraul	78.83539	25.47220			Patch - 1
Saraul	78.83541	25.47214			Patch - 1
Saraul	78.83546	25.47212			Patch - 1
Saraul	78.83549	25.47216			Patch - 1
Saraul	78.83556	25.47216			Patch - 1
Saraul	78.83567	25.47225			Patch - 1
Saraul	78.83566	25.47229			Patch - 1
Saraul	78.83561	25.47232			Patch - 1
Saraul	78.83557	25.47229			Patch - 1
Saraul	78.83555	25.47224			Patch - 1
Saraul	78.83553	25.47223			Patch - 1
Saraul	78.83550	25.47225			Patch - 1
Saraul	78.83550	25.47240			Patch - 1
Saraul	78.83552	25.47243			Patch - 1
Saraul	78.83549	25.47247			Patch - 1
Saraul	78.83556	25.47248			Patch - 1
Saraul	78.83558	25.47252			Patch - 1
Saraul	78.83545	25.47254			Patch - 1
Saraul	78.83543	25.47251			Patch - 1
Saraul	78.83540	25.47251			Patch - 1
Saraul	78.83542	25.47257			Patch - 1
Saraul	78.83539	25.47262			Patch - 1
Saraul	78.83534	25.47262			Patch - 1
Saraul	78.83535	25.47267			Patch - 1

Table 2: Saraul JFMC of Chirgaon Forest Range, Plantation in 2014

JFMC	Longitude	Latitude	Project Area (ha)	Year
Saraul	78.84118	25.47108	63.27	2014
Saraul	78.84111	25.47156		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Saraul	78.84104	25.47175		
Saraul	78.84088	25.47190		
Saraul	78.84070	25.47250		
Saraul	78.84057	25.47351		
Saraul	78.84049	25.47377		
Saraul	78.84053	25.47402		
Saraul	78.84078	25.47411		
Saraul	78.84088	25.47410		
Saraul	78.84094	25.47420		
Saraul	78.84070	25.47447		
Saraul	78.84073	25.47490		
Saraul	78.84064	25.47504		
Saraul	78.84056	25.47546		
Saraul	78.84063	25.47572		
Saraul	78.84079	25.47581		
Saraul	78.84082	25.47604		
Saraul	78.84078	25.47614		
Saraul	78.84094	25.47634		
Saraul	78.84106	25.47654		
Saraul	78.84128	25.47645		
Saraul	78.84134	25.47662		
Saraul	78.84142	25.47661		
Saraul	78.84152	25.47675		
Saraul	78.84164	25.47678		
Saraul	78.84213	25.47727		
Saraul	78.84235	25.47777		
Saraul	78.84252	25.47795		
Saraul	78.84276	25.47798		
Saraul	78.84272	25.47824		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Saraul	78.84273	25.47839		
Saraul	78.84264	25.47884		
Saraul	78.84240	25.47906		
Saraul	78.84334	25.47968		
Saraul	78.84338	25.47978		
Saraul	78.84240	25.47998		
Saraul	78.84235	25.48004		
Saraul	78.84313	25.48082		
Saraul	78.84336	25.48088		
Saraul	78.84381	25.48131		
Saraul	78.84431	25.48149		
Saraul	78.84454	25.48174		
Saraul	78.84476	25.48178		
Saraul	78.84542	25.48167		
Saraul	78.84577	25.48170		
Saraul	78.84633	25.48177		
Saraul	78.84589	25.48102		
Saraul	78.84564	25.48082		
Saraul	78.84498	25.48057		
Saraul	78.84373	25.47990		
Saraul	78.84372	25.47973		
Saraul	78.84416	25.47948		
Saraul	78.84542	25.47860		
Saraul	78.84681	25.47858		
Saraul	78.84735	25.47876		
Saraul	78.84758	25.47870		
Saraul	78.84933	25.47769		
Saraul	78.84948	25.47727		
Saraul	78.84968	25.47725		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Saraul	78.84986	25.47673		
Saraul	78.84962	25.47633		
Saraul	78.84925	25.47611		
Saraul	78.84867	25.47596		
Saraul	78.84855	25.47603		
Saraul	78.84820	25.47598		
Saraul	78.84786	25.47556		
Saraul	78.84758	25.47542		
Saraul	78.84759	25.47530		
Saraul	78.84747	25.47523		
Saraul	78.84721	25.47474		
Saraul	78.84714	25.47444		
Saraul	78.84719	25.47420		
Saraul	78.84710	25.47403		
Saraul	78.84733	25.47322		
Saraul	78.84768	25.47276		
Saraul	78.84767	25.47253		
Saraul	78.84698	25.47197		
Saraul	78.84570	25.47156		
Saraul	78.84434	25.47108		
Saraul	78.84391	25.47105		
Saraul	78.84365	25.47087		
Saraul	78.84347	25.47087		
Saraul	78.84326	25.47078		
Saraul	78.84221	25.47079		
Saraul	78.84161	25.47068		
Saraul	78.84154	25.47075		
Saraul	78.84136	25.47067		
Saraul	78.84126	25.47096		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Saraul	78.84130	25.47101		

**Table 3: Kakarwai JFMC of Bamor Forest Range, Plantation in 2012**

JFMC	Longitude	Latitude	Project Area (ha)	Year
Kakarwai	79.33044	25.70382	44.24	2012
Kakarwai	79.33010	25.70432		
Kakarwai	79.33014	25.70448		
Kakarwai	79.33077	25.70474		
Kakarwai	79.33065	25.70496		
Kakarwai	79.33069	25.70505		
Kakarwai	79.33055	25.70536		
Kakarwai	79.33016	25.70563		
Kakarwai	79.33006	25.70580		
Kakarwai	79.33006	25.70591		
Kakarwai	79.32990	25.70589		
Kakarwai	79.32964	25.70640		
Kakarwai	79.32912	25.70645		
Kakarwai	79.32915	25.70761		
Kakarwai	79.32811	25.70819		
Kakarwai	79.32792	25.70818		
Kakarwai	79.32788	25.70821		
Kakarwai	79.32791	25.70824		
Kakarwai	79.32785	25.70829		
Kakarwai	79.32777	25.70828		
Kakarwai	79.32772	25.70838		
Kakarwai	79.32786	25.70879		
Kakarwai	79.32732	25.70941		
Kakarwai	79.32666	25.70971		
Kakarwai	79.32662	25.71000		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Kakarwai	79.32634	25.71040		
Kakarwai	79.32639	25.71089		
Kakarwai	79.32625	25.71145		
Kakarwai	79.32638	25.71164		
Kakarwai	79.32698	25.71181		
Kakarwai	79.32722	25.71161		
Kakarwai	79.32741	25.71155		
Kakarwai	79.32776	25.71177		
Kakarwai	79.32790	25.71199		
Kakarwai	79.32804	25.71202		
Kakarwai	79.32830	25.71192		
Kakarwai	79.32876	25.71148		
Kakarwai	79.32932	25.71129		
Kakarwai	79.32963	25.71082		
Kakarwai	79.33045	25.71074		
Kakarwai	79.33117	25.71042		
Kakarwai	79.33119	25.71037		
Kakarwai	79.33117	25.71034		
Kakarwai	79.33151	25.71033		
Kakarwai	79.33208	25.71016		
Kakarwai	79.33206	25.71012		
Kakarwai	79.33214	25.71002		
Kakarwai	79.33215	25.70989		
Kakarwai	79.33224	25.70987		
Kakarwai	79.33229	25.70980		
Kakarwai	79.33224	25.70965		
Kakarwai	79.33241	25.70956		
Kakarwai	79.33246	25.70947		
Kakarwai	79.33245	25.70940		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Kakarwai	79.33249	25.70929		
Kakarwai	79.33252	25.70930		
Kakarwai	79.33257	25.70928		
Kakarwai	79.33259	25.70924		
Kakarwai	79.33265	25.70936		
Kakarwai	79.33291	25.70942		
Kakarwai	79.33300	25.70918		
Kakarwai	79.33306	25.70914		
Kakarwai	79.33301	25.70909		
Kakarwai	79.33275	25.70902		
Kakarwai	79.33267	25.70869		
Kakarwai	79.33322	25.70766		
Kakarwai	79.33316	25.70756		
Kakarwai	79.33319	25.70741		
Kakarwai	79.33312	25.70730		
Kakarwai	79.33269	25.70718		
Kakarwai	79.33259	25.70696		
Kakarwai	79.33251	25.70695		
Kakarwai	79.33215	25.70601		
Kakarwai	79.33191	25.70593		
Kakarwai	79.33190	25.70586		
Kakarwai	79.33178	25.70580		
Kakarwai	79.33164	25.70580		
Kakarwai	79.33148	25.70569		
Kakarwai	79.33145	25.70542		
Kakarwai	79.33137	25.70533		
Kakarwai	79.33179	25.70489		
Kakarwai	79.33188	25.70450		
Kakarwai	79.33204	25.70442		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Kakarwai	79.33200	25.70435		
Kakarwai	79.33201	25.70416		
Kakarwai	79.33221	25.70403		
Kakarwai	79.33218	25.70369		
Kakarwai	79.33240	25.70354		
Kakarwai	79.33266	25.70372		
Kakarwai	79.33292	25.70368		
Kakarwai	79.33314	25.70395		
Kakarwai	79.33314	25.70407		
Kakarwai	79.33333	25.70427		
Kakarwai	79.33332	25.70444		
Kakarwai	79.33366	25.70469		
Kakarwai	79.33461	25.70480		
Kakarwai	79.33470	25.70466		
Kakarwai	79.33474	25.70465		
Kakarwai	79.33475	25.70446		
Kakarwai	79.33467	25.70444		
Kakarwai	79.33462	25.70436		
Kakarwai	79.33460	25.70423		
Kakarwai	79.33435	25.70390		
Kakarwai	79.33441	25.70356		
Kakarwai	79.33452	25.70349		
Kakarwai	79.33437	25.70333		
Kakarwai	79.33444	25.70315		
Kakarwai	79.33438	25.70308		
Kakarwai	79.33435	25.70290		
Kakarwai	79.33460	25.70252		
Kakarwai	79.33470	25.70243		
Kakarwai	79.33473	25.70226		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Kakarwai	79.33468	25.70187		
Kakarwai	79.33445	25.70124		
Kakarwai	79.33446	25.70115		
Kakarwai	79.33427	25.70087		
Kakarwai	79.33377	25.70068		
Kakarwai	79.33344	25.70032		
Kakarwai	79.33303	25.70022		
Kakarwai	79.33241	25.69994		
Kakarwai	79.33240	25.69989		
Kakarwai	79.33193	25.70005		
Kakarwai	79.33164	25.70037		
Kakarwai	79.33153	25.70061		
Kakarwai	79.33131	25.70076		
Kakarwai	79.33128	25.70091		
Kakarwai	79.33130	25.70096		
Kakarwai	79.33140	25.70101		
Kakarwai	79.33152	25.70123		
Kakarwai	79.33169	25.70121		
Kakarwai	79.33175	25.70130		
Kakarwai	79.33173	25.70142		
Kakarwai	79.33137	25.70167		
Kakarwai	79.33124	25.70159		
Kakarwai	79.33106	25.70174		
Kakarwai	79.33124	25.70203		
Kakarwai	79.33126	25.70230		
Kakarwai	79.33108	25.70237		
Kakarwai	79.33094	25.70277		
Kakarwai	79.33093	25.70289		
Kakarwai	79.33070	25.70305		

**Table 4: Khadaura JFMC of Gursarain Forest Range, Plantation in 2012**

<b>JFMC</b>	<b>Longitude</b>	<b>Latitude</b>	<b>Project Area (ha)</b>	<b>Year</b>
Khadaura	79.33794	25.45388	23.01	2012
Khadaura	79.33803	25.45401		
Khadaura	79.33817	25.45405		
Khadaura	79.33828	25.45414		
Khadaura	79.33835	25.45416		
Khadaura	79.33843	25.45421		
Khadaura	79.33848	25.45426		
Khadaura	79.33867	25.45448		
Khadaura	79.33894	25.45464		
Khadaura	79.33954	25.45473		
Khadaura	79.34006	25.45494		
Khadaura	79.34046	25.45494		
Khadaura	79.34069	25.45488		
Khadaura	79.34067	25.45484		
Khadaura	79.34068	25.45478		
Khadaura	79.34065	25.45467		
Khadaura	79.34074	25.45461		
Khadaura	79.34078	25.45453		
Khadaura	79.34089	25.45450		
Khadaura	79.34096	25.45443		
Khadaura	79.34102	25.45439		
Khadaura	79.34106	25.45434		
Khadaura	79.34109	25.45432		
Khadaura	79.34110	25.45431		
Khadaura	79.34108	25.45423		
Khadaura	79.34110	25.45415		
Khadaura	79.34109	25.45409		
Khadaura	79.34113	25.45403		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Khadaura	79.34115	25.45398		
Khadaura	79.34120	25.45394		
Khadaura	79.34121	25.45391		
Khadaura	79.34128	25.45388		
Khadaura	79.34128	25.45379		
Khadaura	79.34111	25.45366		
Khadaura	79.34112	25.45364		
Khadaura	79.34112	25.45364		
Khadaura	79.34113	25.45363		
Khadaura	79.34114	25.45360		
Khadaura	79.34116	25.45360		
Khadaura	79.34118	25.45360		
Khadaura	79.34118	25.45360		
Khadaura	79.34123	25.45359		
Khadaura	79.34131	25.45356		
Khadaura	79.34135	25.45350		
Khadaura	79.34137	25.45342		
Khadaura	79.34149	25.45330		
Khadaura	79.34157	25.45317		
Khadaura	79.34170	25.45306		
Khadaura	79.34172	25.45299		
Khadaura	79.34172	25.45288		
Khadaura	79.34177	25.45284		
Khadaura	79.34181	25.45278		
Khadaura	79.34180	25.45274		
Khadaura	79.34191	25.45267		
Khadaura	79.34196	25.45258		
Khadaura	79.34193	25.45250		
Khadaura	79.34202	25.45239		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Khadaura	79.34200	25.45236		
Khadaura	79.34196	25.45232		
Khadaura	79.34190	25.45231		
Khadaura	79.34188	25.45223		
Khadaura	79.34189	25.45218		
Khadaura	79.34189	25.45210		
Khadaura	79.34192	25.45207		
Khadaura	79.34194	25.45203		
Khadaura	79.34192	25.45197		
Khadaura	79.34187	25.45193		
Khadaura	79.34188	25.45190		
Khadaura	79.34187	25.45186		
Khadaura	79.34189	25.45179		
Khadaura	79.34198	25.45174		
Khadaura	79.34200	25.45171		
Khadaura	79.34200	25.45169		
Khadaura	79.34198	25.45165		
Khadaura	79.34198	25.45163		
Khadaura	79.34205	25.45157		
Khadaura	79.34218	25.45138		
Khadaura	79.34222	25.45125		
Khadaura	79.34231	25.45121		
Khadaura	79.34237	25.45115		
Khadaura	79.34244	25.45112		
Khadaura	79.34245	25.45110		
Khadaura	79.34245	25.45107		
Khadaura	79.34258	25.45092		
Khadaura	79.34262	25.45083		
Khadaura	79.34281	25.45068		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Khadaura	79.34288	25.45067		
Khadaura	79.34293	25.45064		
Khadaura	79.34301	25.45056		
Khadaura	79.34311	25.45044		
Khadaura	79.34313	25.45037		
Khadaura	79.34324	25.45021		
Khadaura	79.34319	25.44993		
Khadaura	79.34327	25.44981		
Khadaura	79.34344	25.44973		
Khadaura	79.34353	25.44948		
Khadaura	79.34374	25.44933		
Khadaura	79.34383	25.44911		
Khadaura	79.34394	25.44908		
Khadaura	79.34402	25.44909		
Khadaura	79.34404	25.44908		
Khadaura	79.34405	25.44908		
Khadaura	79.34411	25.44907		
Khadaura	79.34412	25.44908		
Khadaura	79.34416	25.44905		
Khadaura	79.34416	25.44903		
Khadaura	79.34419	25.44897		
Khadaura	79.34421	25.44895		
Khadaura	79.34421	25.44893		
Khadaura	79.34418	25.44890		
Khadaura	79.34418	25.44888		
Khadaura	79.34416	25.44883		
Khadaura	79.34416	25.44877		
Khadaura	79.34410	25.44873		
Khadaura	79.34404	25.44856		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Khadaura	79.34409	25.44850		
Khadaura	79.34410	25.44840		
Khadaura	79.34422	25.44831		
Khadaura	79.34424	25.44823		
Khadaura	79.34418	25.44817		
Khadaura	79.34405	25.44796		
Khadaura	79.34392	25.44774		
Khadaura	79.34380	25.44780		
Khadaura	79.34370	25.44772		
Khadaura	79.34356	25.44771		
Khadaura	79.34340	25.44784		
Khadaura	79.34319	25.44793		
Khadaura	79.34299	25.44796		
Khadaura	79.34289	25.44804		
Khadaura	79.34267	25.44815		
Khadaura	79.34255	25.44849		
Khadaura	79.34253	25.44850		
Khadaura	79.34253	25.44857		
Khadaura	79.34250	25.44871		
Khadaura	79.34223	25.44880		
Khadaura	79.34199	25.44891		
Khadaura	79.34197	25.44895		
Khadaura	79.34188	25.44897		
Khadaura	79.34181	25.44906		
Khadaura	79.34178	25.44934		
Khadaura	79.34174	25.44937		
Khadaura	79.34159	25.44930		
Khadaura	79.34158	25.44932		
Khadaura	79.34151	25.44935		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Khadaura	79.34146	25.44934		
Khadaura	79.34141	25.44936		
Khadaura	79.34128	25.44933		
Khadaura	79.34121	25.44935		
Khadaura	79.34109	25.44953		
Khadaura	79.34115	25.44961		
Khadaura	79.34110	25.44964		
Khadaura	79.34106	25.44968		
Khadaura	79.34098	25.44963		
Khadaura	79.34092	25.44966		
Khadaura	79.34078	25.44964		
Khadaura	79.34072	25.44964		
Khadaura	79.34070	25.44965		
Khadaura	79.34059	25.44966		
Khadaura	79.34057	25.44969		
Khadaura	79.34055	25.44968		
Khadaura	79.34051	25.44972		
Khadaura	79.34042	25.44971		
Khadaura	79.34021	25.44976		
Khadaura	79.33972	25.44967		
Khadaura	79.33956	25.44976		
Khadaura	79.33941	25.44975		
Khadaura	79.33925	25.44985		
Khadaura	79.33926	25.45005		
Khadaura	79.33924	25.45008		
Khadaura	79.33927	25.45012		
Khadaura	79.33924	25.45020		
Khadaura	79.33919	25.45023		
Khadaura	79.33914	25.45020		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Khadaura	79.33905	25.45021		
Khadaura	79.33901	25.45025		
Khadaura	79.33897	25.45036		
Khadaura	79.33903	25.45045		
Khadaura	79.33909	25.45046		
Khadaura	79.33922	25.45059		
Khadaura	79.33927	25.45059		
Khadaura	79.33930	25.45060		
Khadaura	79.33931	25.45063		
Khadaura	79.33937	25.45070		
Khadaura	79.33943	25.45071		
Khadaura	79.33950	25.45077		
Khadaura	79.33959	25.45081		
Khadaura	79.33963	25.45080		
Khadaura	79.33969	25.45084		
Khadaura	79.33971	25.45087		
Khadaura	79.33974	25.45087		
Khadaura	79.33981	25.45093		
Khadaura	79.33976	25.45096		
Khadaura	79.33971	25.45104		
Khadaura	79.33971	25.45113		
Khadaura	79.33974	25.45120		
Khadaura	79.33978	25.45121		
Khadaura	79.33979	25.45125		
Khadaura	79.33976	25.45128		
Khadaura	79.33976	25.45130		
Khadaura	79.33964	25.45136		
Khadaura	79.33947	25.45134		
Khadaura	79.33929	25.45128		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Khadaura	79.33917	25.45132		
Khadaura	79.33909	25.45131		
Khadaura	79.33900	25.45136		
Khadaura	79.33899	25.45140		
Khadaura	79.33895	25.45146		
Khadaura	79.33893	25.45147		
Khadaura	79.33887	25.45146		
Khadaura	79.33877	25.45140		
Khadaura	79.33878	25.45139		
Khadaura	79.33877	25.45138		
Khadaura	79.33876	25.45137		
Khadaura	79.33878	25.45135		
Khadaura	79.33881	25.45136		
Khadaura	79.33884	25.45136		
Khadaura	79.33885	25.45134		
Khadaura	79.33881	25.45128		
Khadaura	79.33877	25.45128		
Khadaura	79.33877	25.45127		
Khadaura	79.33873	25.45124		
Khadaura	79.33871	25.45122		
Khadaura	79.33870	25.45120		
Khadaura	79.33862	25.45120		
Khadaura	79.33854	25.45118		
Khadaura	79.33849	25.45126		
Khadaura	79.33849	25.45129		
Khadaura	79.33846	25.45131		
Khadaura	79.33844	25.45139		
Khadaura	79.33838	25.45145		
Khadaura	79.33840	25.45149		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Khadaura	79.33838	25.45150		
Khadaura	79.33830	25.45161		
Khadaura	79.33828	25.45161		
Khadaura	79.33825	25.45160		
Khadaura	79.33818	25.45166		
Khadaura	79.33811	25.45182		
Khadaura	79.33812	25.45197		
Khadaura	79.33809	25.45201		
Khadaura	79.33811	25.45206		
Khadaura	79.33810	25.45214		
Khadaura	79.33817	25.45219		
Khadaura	79.33824	25.45230		
Khadaura	79.33826	25.45230		
Khadaura	79.33830	25.45239		
Khadaura	79.33829	25.45245		
Khadaura	79.33827	25.45246		
Khadaura	79.33825	25.45245		
Khadaura	79.33818	25.45242		
Khadaura	79.33802	25.45255		
Khadaura	79.33803	25.45265		
Khadaura	79.33806	25.45269		
Khadaura	79.33807	25.45274		
Khadaura	79.33811	25.45278		
Khadaura	79.33817	25.45279		
Khadaura	79.33822	25.45299		
Khadaura	79.33821	25.45314		
Khadaura	79.33824	25.45315		
Khadaura	79.33812	25.45319		
Khadaura	79.33809	25.45324		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Khadaura	79.33808	25.45328		
Khadaura	79.33799	25.45336		
Khadaura	79.33796	25.45344		

**Table 5: Manpur Babina JFMC of Babeena Forest Range, Plantation in 2012**

JFMC	Longitude	Latitude	Project Area (ha)	Year
Manpur Babina	78.48853	25.25490	19.46	2012
Manpur Babina	78.48828	25.25557		
Manpur Babina	78.48820	25.25611		
Manpur Babina	78.48805	25.25625		
Manpur Babina	78.48908	25.25670		
Manpur Babina	78.48929	25.25687		
Manpur Babina	78.48930	25.25660		
Manpur Babina	78.48941	25.25652		
Manpur Babina	78.48942	25.25636		
Manpur Babina	78.48958	25.25597		
Manpur Babina	78.48972	25.25591		
Manpur Babina	78.48998	25.25625		
Manpur Babina	78.48981	25.25645		
Manpur Babina	78.48941	25.25672		
Manpur Babina	78.48939	25.25691		
Manpur Babina	78.49004	25.25729		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Manpur Babina	78.49023	25.25701		
Manpur Babina	78.49005	25.25644		
Manpur Babina	78.49012	25.25633		
Manpur Babina	78.49037	25.25629		
Manpur Babina	78.49042	25.25639		
Manpur Babina	78.49039	25.25683		
Manpur Babina	78.49048	25.25703		
Manpur Babina	78.49051	25.25747		
Manpur Babina	78.49058	25.25749		
Manpur Babina	78.49083	25.25742		
Manpur Babina	78.49115	25.25748		
Manpur Babina	78.49126	25.25784		
Manpur Babina	78.49135	25.25790		
Manpur Babina	78.49143	25.25789		
Manpur Babina	78.49186	25.25799		
Manpur Babina	78.49220	25.25827		
Manpur Babina	78.49235	25.25861		
Manpur Babina	78.49227	25.25886		
Manpur Babina	78.49256	25.25944		
Manpur	78.49275	25.26042		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Babina				
Manpur Babina	78.49329	25.26139		
Manpur Babina	78.49383	25.26110		
Manpur Babina	78.49511	25.26071		
Manpur Babina	78.49514	25.26062		
Manpur Babina	78.49503	25.26056		
Manpur Babina	78.49495	25.26037		
Manpur Babina	78.49521	25.26021		
Manpur Babina	78.49521	25.26012		
Manpur Babina	78.49543	25.25965		
Manpur Babina	78.49555	25.25957		
Manpur Babina	78.49548	25.25927		
Manpur Babina	78.49525	25.25892		
Manpur Babina	78.49523	25.25883		
Manpur Babina	78.49505	25.25860		
Manpur Babina	78.49486	25.25859		
Manpur Babina	78.49470	25.25853		
Manpur Babina	78.49462	25.25846		
Manpur Babina	78.49448	25.25839		
Manpur Babina	78.49422	25.25804		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Manpur Babina	78.49410	25.25799		
Manpur Babina	78.49393	25.25772		
Manpur Babina	78.49368	25.25753		
Manpur Babina	78.49361	25.25738		
Manpur Babina	78.49274	25.25761		
Manpur Babina	78.49280	25.25769		
Manpur Babina	78.49288	25.25771		
Manpur Babina	78.49292	25.25775		
Manpur Babina	78.49292	25.25783		
Manpur Babina	78.49282	25.25789		
Manpur Babina	78.49273	25.25786		
Manpur Babina	78.49268	25.25773		
Manpur Babina	78.49263	25.25770		
Manpur Babina	78.49250	25.25780		
Manpur Babina	78.49244	25.25779		
Manpur Babina	78.49236	25.25783		
Manpur Babina	78.49242	25.25792		
Manpur Babina	78.49239	25.25799		
Manpur Babina	78.49224	25.25798		
Manpur	78.49224	25.25777		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Babina				
Manpur Babina	78.49220	25.25774		
Manpur Babina	78.49220	25.25769		
Manpur Babina	78.49238	25.25769		
Manpur Babina	78.49242	25.25763		
Manpur Babina	78.49238	25.25765		
Manpur Babina	78.49234	25.25760		
Manpur Babina	78.49213	25.25759		
Manpur Babina	78.49187	25.25748		
Manpur Babina	78.49184	25.25749		
Manpur Babina	78.49183	25.25753		
Manpur Babina	78.49186	25.25758		
Manpur Babina	78.49181	25.25769		
Manpur Babina	78.49173	25.25765		
Manpur Babina	78.49171	25.25755		
Manpur Babina	78.49167	25.25748		
Manpur Babina	78.49168	25.25743		
Manpur Babina	78.49173	25.25741		
Manpur Babina	78.49180	25.25742		
Manpur Babina	78.49176	25.25728		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Manpur Babina	78.49183	25.25717		
Manpur Babina	78.49206	25.25709		
Manpur Babina	78.49299	25.25709		
Manpur Babina	78.49312	25.25701		
Manpur Babina	78.49313	25.25692		
Manpur Babina	78.49299	25.25692		
Manpur Babina	78.49288	25.25685		
Manpur Babina	78.49286	25.25666		
Manpur Babina	78.49258	25.25641		
Manpur Babina	78.49258	25.25625		
Manpur Babina	78.49267	25.25618		
Manpur Babina	78.49272	25.25619		
Manpur Babina	78.49274	25.25609		
Manpur Babina	78.49293	25.25601		
Manpur Babina	78.49288	25.25594		
Manpur Babina	78.49288	25.25590		
Manpur Babina	78.49277	25.25585		
Manpur Babina	78.49265	25.25564		
Manpur Babina	78.49259	25.25562		
Manpur	78.49239	25.25543		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Babina				
Manpur Babina	78.49206	25.25529		
Manpur Babina	78.49204	25.25524		
Manpur Babina	78.49194	25.25520		
Manpur Babina	78.49192	25.25522		
Manpur Babina	78.49165	25.25525		
Manpur Babina	78.49157	25.25533		
Manpur Babina	78.49154	25.25558		
Manpur Babina	78.49158	25.25571		
Manpur Babina	78.49173	25.25582		
Manpur Babina	78.49206	25.25595		
Manpur Babina	78.49207	25.25608		
Manpur Babina	78.49193	25.25628		
Manpur Babina	78.49169	25.25625		
Manpur Babina	78.49113	25.25579		
Manpur Babina	78.49115	25.25566		
Manpur Babina	78.49137	25.25555		
Manpur Babina	78.49155	25.25523		
Manpur Babina	78.49151	25.25505		
Manpur Babina	78.49154	25.25499		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Manpur Babina	78.49131	25.25488		
Manpur Babina	78.49129	25.25482		
Manpur Babina	78.49071	25.25475		
Manpur Babina	78.49050	25.25469		
Manpur Babina	78.49026	25.25472		
Manpur Babina	78.49030	25.25489		
Manpur Babina	78.49025	25.25495		
Manpur Babina	78.48991	25.25494		
Manpur Babina	78.48964	25.25471		
Manpur Babina	78.48962	25.25460		
Manpur Babina	78.48930	25.25455		
Manpur Babina	78.48905	25.25445		
Manpur Babina	78.48875	25.25470		
Manpur Babina	78.48872	25.25480		
Manpur Babina	78.48862	25.25489		
Manpur Babina	78.48853	25.25490		

Table 6: Manpur Babina JFMC of Babeena Forest Range, Plantation in 2012

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed Patches
Manpur Babina	78.49793	25.26260	18.33	2012	
Manpur Babina	78.49765	25.26208			

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed Patches
Manpur Babina	78.49671	25.26134			
Manpur Babina	78.49637	25.26104			
Manpur Babina	78.49628	25.26102			
Manpur Babina	78.49565	25.26197			
Manpur Babina	78.49531	25.26121			
Manpur Babina	78.49508	25.26088			
Manpur Babina	78.49513	25.26071			
Manpur Babina	78.49383	25.26110			
Manpur Babina	78.49334	25.26140			
Manpur Babina	78.49336	25.26144			
Manpur Babina	78.49332	25.26164			
Manpur Babina	78.49335	25.26180			
Manpur Babina	78.49365	25.26240			
Manpur Babina	78.49425	25.26362			
Manpur Babina	78.49425	25.26427			
Manpur Babina	78.49450	25.26452			
Manpur Babina	78.49475	25.26464			
Manpur Babina	78.49513	25.26472			
Manpur Babina	78.49541	25.26484			
Manpur	78.49549	25.26483			

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed Patches
Babina					
Manpur Babina	78.49632	25.26500			
Manpur Babina	78.49649	25.26510			
Manpur Babina	78.49657	25.26511			
Manpur Babina	78.49674	25.26517			
Manpur Babina	78.49702	25.26515			
Manpur Babina	78.49747	25.26540			
Manpur Babina	78.49783	25.26534			
Manpur Babina	78.49797	25.26525			
Manpur Babina	78.49822	25.26523			
Manpur Babina	78.49886	25.26479			
Manpur Babina	78.49890	25.26450			
Manpur Babina	78.49891	25.26400			
Manpur Babina	78.49882	25.26352			
Manpur Babina	78.48950	25.25493			Patch - 1
Manpur Babina	78.48962	25.25504			Patch - 1
Manpur Babina	78.48969	25.25506			Patch - 1
Manpur Babina	78.48976	25.25512			Patch - 1
Manpur Babina	78.48977	25.25517			Patch - 1
Manpur Babina	78.48971	25.25530			Patch - 1

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed Patches
Manpur Babina	78.48974	25.25534			Patch - 1
Manpur Babina	78.48968	25.25540			Patch - 1
Manpur Babina	78.48958	25.25535			Patch - 1
Manpur Babina	78.48959	25.25525			Patch - 1
Manpur Babina	78.48954	25.25531			Patch - 1
Manpur Babina	78.48954	25.25535			Patch - 1
Manpur Babina	78.48950	25.25543			Patch - 1
Manpur Babina	78.48942	25.25542			Patch - 1
Manpur Babina	78.48942	25.25515			Patch - 1
Manpur Babina	78.48939	25.25500			Patch - 1
Manpur Babina	78.48943	25.25494			Patch - 1
Manpur Babina	78.48950	25.25493			Patch - 1

Table 7: Manpur Babina JFMC of Babeena Forest Range, Plantation in 2013

JFMC	Longitude	Latitude	Project Area (ha)	Year
Manpur Babina	78.49239	25.25543	7.77	2013
Manpur Babina	78.49213	25.25534		
Manpur Babina	78.49204	25.25524		
Manpur Babina	78.49186	25.25517		
Manpur Babina	78.49182	25.25506		
Manpur	78.49189	25.25502		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Babina				
Manpur Babina	78.49192	25.25489		
Manpur Babina	78.49222	25.25443		
Manpur Babina	78.49250	25.25441		
Manpur Babina	78.49303	25.25420		
Manpur Babina	78.49316	25.25394		
Manpur Babina	78.49340	25.25401		
Manpur Babina	78.49340	25.25404		
Manpur Babina	78.49364	25.25409		
Manpur Babina	78.49366	25.25418		
Manpur Babina	78.49376	25.25416		
Manpur Babina	78.49426	25.25436		
Manpur Babina	78.49443	25.25423		
Manpur Babina	78.49442	25.25406		
Manpur Babina	78.49424	25.25388		
Manpur Babina	78.49399	25.25387		
Manpur Babina	78.49354	25.25397		
Manpur Babina	78.49341	25.25391		
Manpur Babina	78.49337	25.25382		
Manpur Babina	78.49353	25.25361		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Manpur Babina	78.49358	25.25362		
Manpur Babina	78.49376	25.25347		
Manpur Babina	78.49459	25.25324		
Manpur Babina	78.49466	25.25319		
Manpur Babina	78.49472	25.25320		
Manpur Babina	78.49503	25.25310		
Manpur Babina	78.49501	25.25306		
Manpur Babina	78.49509	25.25305		
Manpur Babina	78.49514	25.25309		
Manpur Babina	78.49522	25.25329		
Manpur Babina	78.49519	25.25352		
Manpur Babina	78.49524	25.25368		
Manpur Babina	78.49523	25.25385		
Manpur Babina	78.49532	25.25407		
Manpur Babina	78.49524	25.25408		
Manpur Babina	78.49495	25.25383		
Manpur Babina	78.49489	25.25386		
Manpur Babina	78.49494	25.25399		
Manpur Babina	78.49489	25.25416		
Manpur	78.49491	25.25424		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Babina				
Manpur Babina	78.49496	25.25427		
Manpur Babina	78.49501	25.25425		
Manpur Babina	78.49500	25.25418		
Manpur Babina	78.49509	25.25415		
Manpur Babina	78.49526	25.25423		
Manpur Babina	78.49533	25.25421		
Manpur Babina	78.49568	25.25457		
Manpur Babina	78.49568	25.25473		
Manpur Babina	78.49553	25.25489		
Manpur Babina	78.49537	25.25485		
Manpur Babina	78.49512	25.25488		
Manpur Babina	78.49501	25.25502		
Manpur Babina	78.49503	25.25525		
Manpur Babina	78.49516	25.25532		
Manpur Babina	78.49524	25.25568		
Manpur Babina	78.49574	25.25615		
Manpur Babina	78.49589	25.25624		
Manpur Babina	78.49553	25.25659		
Manpur Babina	78.49545	25.25650		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Manpur Babina	78.49525	25.25641		
Manpur Babina	78.49479	25.25651		
Manpur Babina	78.49470	25.25650		
Manpur Babina	78.49454	25.25657		
Manpur Babina	78.49435	25.25651		
Manpur Babina	78.49406	25.25658		
Manpur Babina	78.49384	25.25654		
Manpur Babina	78.49381	25.25650		
Manpur Babina	78.49384	25.25629		
Manpur Babina	78.49377	25.25619		
Manpur Babina	78.49353	25.25618		
Manpur Babina	78.49340	25.25603		
Manpur Babina	78.49323	25.25596		
Manpur Babina	78.49316	25.25558		
Manpur Babina	78.49349	25.25552		
Manpur Babina	78.49360	25.25557		
Manpur Babina	78.49365	25.25568		
Manpur Babina	78.49404	25.25582		
Manpur Babina	78.49422	25.25583		
Manpur	78.49431	25.25576		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Babina				
Manpur Babina	78.49432	25.25567		
Manpur Babina	78.49426	25.25559		
Manpur Babina	78.49422	25.25558		
Manpur Babina	78.49415	25.25552		
Manpur Babina	78.49414	25.25543		
Manpur Babina	78.49422	25.25538		
Manpur Babina	78.49422	25.25530		
Manpur Babina	78.49416	25.25523		
Manpur Babina	78.49409	25.25523		
Manpur Babina	78.49408	25.25517		
Manpur Babina	78.49385	25.25512		
Manpur Babina	78.49377	25.25515		
Manpur Babina	78.49372	25.25508		
Manpur Babina	78.49364	25.25506		
Manpur Babina	78.49367	25.25516		
Manpur Babina	78.49359	25.25520		
Manpur Babina	78.49338	25.25499		
Manpur Babina	78.49325	25.25488		
Manpur Babina	78.49324	25.25483		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Manpur Babina	78.49314	25.25481		
Manpur Babina	78.49310	25.25487		
Manpur Babina	78.49302	25.25489		
Manpur Babina	78.49302	25.25494		
Manpur Babina	78.49305	25.25496		
Manpur Babina	78.49299	25.25498		
Manpur Babina	78.49305	25.25506		
Manpur Babina	78.49327	25.25503		
Manpur Babina	78.49354	25.25525		
Manpur Babina	78.49354	25.25534		
Manpur Babina	78.49350	25.25543		
Manpur Babina	78.49315	25.25550		
Manpur Babina	78.49270	25.25534		
Manpur Babina	78.49255	25.25536		
Manpur Babina	78.49250	25.25551		

**Table 8: Manpur Babina JFMC of Babeena Forest Range, Plantation in 2014**

JFMC	Longitude	Latitude	Project Area (ha)	Year
Manpur Babina	78.49385	25.25344	3.92	2014
Manpur Babina	78.49310	25.25398		
Manpur Babina	78.49272	25.25403		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Manpur Babina	78.49248	25.25419		
Manpur Babina	78.49225	25.25423		
Manpur Babina	78.49218	25.25430		
Manpur Babina	78.49217	25.25448		
Manpur Babina	78.49190	25.25490		
Manpur Babina	78.49187	25.25500		
Manpur Babina	78.49175	25.25501		
Manpur Babina	78.49143	25.25483		
Manpur Babina	78.49148	25.25440		
Manpur Babina	78.49169	25.25409		
Manpur Babina	78.49177	25.25406		
Manpur Babina	78.49192	25.25412		
Manpur Babina	78.49212	25.25409		
Manpur Babina	78.49231	25.25418		
Manpur Babina	78.49242	25.25414		
Manpur Babina	78.49244	25.25398		
Manpur Babina	78.49217	25.25372		
Manpur Babina	78.49204	25.25366		
Manpur Babina	78.49230	25.25342		
Manpur	78.49248	25.25341		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Babina				
Manpur Babina	78.49253	25.25327		
Manpur Babina	78.49251	25.25313		
Manpur Babina	78.49241	25.25302		
Manpur Babina	78.49243	25.25295		
Manpur Babina	78.49242	25.25289		
Manpur Babina	78.49235	25.25280		
Manpur Babina	78.49237	25.25273		
Manpur Babina	78.49243	25.25272		
Manpur Babina	78.49259	25.25277		
Manpur Babina	78.49282	25.25270		
Manpur Babina	78.49300	25.25274		
Manpur Babina	78.49306	25.25295		
Manpur Babina	78.49320	25.25308		
Manpur Babina	78.49332	25.25303		
Manpur Babina	78.49346	25.25320		
Manpur Babina	78.49360	25.25309		
Manpur Babina	78.49363	25.25300		
Manpur Babina	78.49355	25.25279		
Manpur Babina	78.49362	25.25268		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Manpur Babina	78.49375	25.25232		
Manpur Babina	78.49400	25.25239		
Manpur Babina	78.49411	25.25227		
Manpur Babina	78.49408	25.25203		
Manpur Babina	78.49389	25.25184		
Manpur Babina	78.49336	25.25183		
Manpur Babina	78.49404	25.25146		
Manpur Babina	78.49409	25.25149		
Manpur Babina	78.49419	25.25176		
Manpur Babina	78.49428	25.25186		
Manpur Babina	78.49448	25.25222		
Manpur Babina	78.49498	25.25266		
Manpur Babina	78.49512	25.25301		

**Table 9: Raseena JFMC of Babeena Forest Range, Plantation in 2014**

<b>JFMC</b>	<b>Longitude</b>	<b>Latitude</b>	<b>Project Area (ha)</b>	<b>Year</b>
Raseena	78.50459	25.24463	24.89	2014
Raseena	78.50450	25.24389		
Raseena	78.50442	25.24387		
Raseena	78.50391	25.24405		
Raseena	78.50359	25.24409		
Raseena	78.50353	25.24426		
Raseena	78.50342	25.24428		
Raseena	78.50331	25.24446		
Raseena	78.50278	25.24462		
Raseena	78.50225	25.24454		
Raseena	78.50204	25.24432		
Raseena	78.50176	25.24434		
Raseena	78.50157	25.24448		
Raseena	78.50148	25.24434		
Raseena	78.50130	25.24433		
Raseena	78.50121	25.24451		
Raseena	78.50124	25.24480		
Raseena	78.50106	25.24491		
Raseena	78.50089	25.24488		
Raseena	78.50071	25.24471		
Raseena	78.50068	25.24463		
Raseena	78.50049	25.24457		
Raseena	78.50043	25.24434		
Raseena	78.50032	25.24421		
Raseena	78.50011	25.24424		
Raseena	78.49998	25.24417		
Raseena	78.49986	25.24416		
Raseena	78.49982	25.24419		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Raseena	78.49982	25.24425		
Raseena	78.49987	25.24444		
Raseena	78.49981	25.24463		
Raseena	78.49966	25.24469		
Raseena	78.49939	25.24524		
Raseena	78.49954	25.24542		
Raseena	78.49953	25.24546		
Raseena	78.49950	25.24549		
Raseena	78.49947	25.24562		
Raseena	78.49949	25.24569		
Raseena	78.49940	25.24584		
Raseena	78.49941	25.24603		
Raseena	78.49936	25.24632		
Raseena	78.49937	25.24647		
Raseena	78.49926	25.24670		
Raseena	78.49926	25.24718		
Raseena	78.49932	25.24728		
Raseena	78.49931	25.24765		
Raseena	78.49936	25.24771		
Raseena	78.49913	25.24794		
Raseena	78.49904	25.24848		
Raseena	78.49908	25.24900		
Raseena	78.49921	25.24931		
Raseena	78.49957	25.24922		
Raseena	78.49971	25.24897		
Raseena	78.49966	25.24892		
Raseena	78.49967	25.24817		
Raseena	78.50004	25.24729		
Raseena	78.50004	25.24729		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Raseena	78.49988	25.24726		
Raseena	78.49954	25.24740		
Raseena	78.49940	25.24733		
Raseena	78.49939	25.24722		
Raseena	78.49958	25.24710		
Raseena	78.49951	25.24689		
Raseena	78.49963	25.24678		
Raseena	78.49983	25.24691		
Raseena	78.50007	25.24684		
Raseena	78.50009	25.24666		
Raseena	78.50005	25.24651		
Raseena	78.50014	25.24635		
Raseena	78.50040	25.24617		
Raseena	78.50109	25.24631		
Raseena	78.50123	25.24645		
Raseena	78.50127	25.24703		
Raseena	78.50153	25.24704		
Raseena	78.50156	25.24714		
Raseena	78.50136	25.24730		
Raseena	78.50161	25.24745		
Raseena	78.50162	25.24760		
Raseena	78.50132	25.24785		
Raseena	78.50083	25.24795		
Raseena	78.50073	25.24809		
Raseena	78.50060	25.24809		
Raseena	78.50064	25.24850		
Raseena	78.50081	25.24848		
Raseena	78.50093	25.24851		
Raseena	78.50097	25.24859		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Raseena	78.50095	25.24868		
Raseena	78.50086	25.24874		
Raseena	78.50090	25.24883		
Raseena	78.50098	25.24877		
Raseena	78.50104	25.24879		
Raseena	78.50112	25.24896		
Raseena	78.50096	25.24918		
Raseena	78.50092	25.24962		
Raseena	78.50106	25.24972		
Raseena	78.50114	25.24985		
Raseena	78.50122	25.24987		
Raseena	78.50131	25.24983		
Raseena	78.50152	25.24988		
Raseena	78.50174	25.24980		
Raseena	78.50180	25.24983		
Raseena	78.50206	25.24979		
Raseena	78.50228	25.24986		
Raseena	78.50232	25.24985		
Raseena	78.50264	25.24991		
Raseena	78.50293	25.24983		
Raseena	78.50311	25.24983		
Raseena	78.50314	25.24988		
Raseena	78.50362	25.25000		
Raseena	78.50370	25.24998		
Raseena	78.50388	25.24998		
Raseena	78.50413	25.24986		
Raseena	78.50419	25.24947		
Raseena	78.50414	25.24937		
Raseena	78.50417	25.24904		

<b>JFMC</b>	<b>Longitude</b>	<b>Latitude</b>	<b>Project Area (ha)</b>	<b>Year</b>
Raseena	78.50447	25.24845		
Raseena	78.50455	25.24773		
Raseena	78.50358	25.24761		
Raseena	78.50306	25.24712		
Raseena	78.50334	25.24701		
Raseena	78.50339	25.24705		
Raseena	78.50353	25.24696		
Raseena	78.50359	25.24702		
Raseena	78.50428	25.24696		
Raseena	78.50442	25.24688		
Raseena	78.50471	25.24582		
Raseena	78.50448	25.24487		
Raseena	78.50459	25.24463		

**Table 10: Kanaura JFMC of Mauranipur Forest Range, Plantation in 2014**

<b>JFMC</b>	<b>Longitude</b>	<b>Latitude</b>	<b>Project Area (ha)</b>	<b>Year</b>
Kanaura	78.85002	25.24365	6.3	2014
Kanaura	78.84999	25.24358		
Kanaura	78.84991	25.24355		
Kanaura	78.84986	25.24332		
Kanaura	78.84989	25.24322		
Kanaura	78.84982	25.24318		
Kanaura	78.84981	25.24311		
Kanaura	78.84986	25.24302		
Kanaura	78.85001	25.24259		
Kanaura	78.85008	25.24262		
Kanaura	78.85017	25.24248		
Kanaura	78.85050	25.24245		
Kanaura	78.85067	25.24254		
Kanaura	78.85083	25.24229		
Kanaura	78.85079	25.24207		
Kanaura	78.85051	25.24178		
Kanaura	78.85051	25.24169		
Kanaura	78.85013	25.24149		
Kanaura	78.85010	25.24141		
Kanaura	78.84972	25.24121		
Kanaura	78.84975	25.24086		
Kanaura	78.84955	25.24037		
Kanaura	78.84924	25.24015		
Kanaura	78.84911	25.24019		
Kanaura	78.84897	25.24040		
Kanaura	78.84885	25.24043		
Kanaura	78.84865	25.24080		
Kanaura	78.84871	25.24093		

Kanaura	78.84858	25.24122		
Kanaura	78.84861	25.24190		
Kanaura	78.84896	25.24216		
Kanaura	78.84916	25.24202		
Kanaura	78.84920	25.24232		
Kanaura	78.84905	25.24258		
Kanaura	78.84909	25.24284		
Kanaura	78.84898	25.24296		
Kanaura	78.84900	25.24316		
Kanaura	78.84889	25.24334		
Kanaura	78.84873	25.24343		
Kanaura	78.84862	25.24336		
Kanaura	78.84858	25.24291		
Kanaura	78.84854	25.24287		
Kanaura	78.84835	25.24309		
Kanaura	78.84827	25.24310		
Kanaura	78.84824	25.24317		
Kanaura	78.84829	25.24321		
Kanaura	78.84830	25.24334		
Kanaura	78.84821	25.24340		
Kanaura	78.84792	25.24339		
Kanaura	78.84785	25.24332		
Kanaura	78.84729	25.24329		
Kanaura	78.84713	25.24346		
Kanaura	78.84740	25.24373		
Kanaura	78.84801	25.24394		
Kanaura	78.84809	25.24404		
Kanaura	78.84831	25.24408		
Kanaura	78.84833	25.24417		
Kanaura	78.84861	25.24426		

Kanaura	78.84878	25.24422		
Kanaura	78.84883	25.24413		
Kanaura	78.84913	25.24420		
Kanaura	78.84911	25.24428		
Kanaura	78.84920	25.24427		
Kanaura	78.84935	25.24431		
Kanaura	78.84944	25.24446		
Kanaura	78.84964	25.24422		
Kanaura	78.84962	25.24403		
Kanaura	78.84947	25.24404		
Kanaura	78.84939	25.24397		
Kanaura	78.84935	25.24357		
Kanaura	78.84947	25.24349		
Kanaura	78.84960	25.24352		
Kanaura	78.84974	25.24365		
Kanaura	78.84982	25.24370		
Kanaura	78.85002	25.24365		

**Table 11: Kanaura JFMC of Mauranipur Forest Range, Plantation in 2014**

<b>JFMC</b>	<b>Longitude</b>	<b>Latitude</b>	<b>Project Area (ha)</b>	<b>Year</b>
Kanaura	78.85536	25.24349	6.39	2014
Kanaura	78.85537	25.24343		
Kanaura	78.85528	25.24340		
Kanaura	78.85521	25.24331		
Kanaura	78.85518	25.24330		
Kanaura	78.85517	25.24321		
Kanaura	78.85503	25.24318		
Kanaura	78.85472	25.24347		
Kanaura	78.85428	25.24341		
Kanaura	78.85416	25.24334		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Kanaura	78.85400	25.24338		
Kanaura	78.85390	25.24364		
Kanaura	78.85419	25.24400		
Kanaura	78.85419	25.24417		
Kanaura	78.85430	25.24429		
Kanaura	78.85436	25.24447		
Kanaura	78.85448	25.24461		
Kanaura	78.85476	25.24477		
Kanaura	78.85493	25.24500		
Kanaura	78.85490	25.24505		
Kanaura	78.85492	25.24514		
Kanaura	78.85502	25.24520		
Kanaura	78.85505	25.24529		
Kanaura	78.85504	25.24532		
Kanaura	78.85508	25.24534		
Kanaura	78.85529	25.24554		
Kanaura	78.85573	25.24567		
Kanaura	78.85575	25.24567		
Kanaura	78.85576	25.24565		
Kanaura	78.85580	25.24563		
Kanaura	78.85582	25.24558		
Kanaura	78.85639	25.24552		
Kanaura	78.85642	25.24547		
Kanaura	78.85687	25.24549		
Kanaura	78.85726	25.24563		
Kanaura	78.85709	25.24513		
Kanaura	78.85712	25.24502		
Kanaura	78.85707	25.24490		
Kanaura	78.85705	25.24401		

<b>JFMC</b>	<b>Longitude</b>	<b>Latitude</b>	<b>Project Area (ha)</b>	<b>Year</b>
Kanaura	78.85648	25.24315		
Kanaura	78.85642	25.24313		
Kanaura	78.85618	25.24289		
Kanaura	78.85608	25.24287		
Kanaura	78.85608	25.24298		
Kanaura	78.85599	25.24310		
Kanaura	78.85599	25.24324		
Kanaura	78.85591	25.24330		
Kanaura	78.85591	25.24334		
Kanaura	78.85579	25.24346		
Kanaura	78.85566	25.24345		
Kanaura	78.85555	25.24350		
Kanaura	78.85536	25.24349		

**Table 12: Kanaura JFMC of Mauranipur Forest Range, Plantation in 2014**

<b>JFMC</b>	<b>Longitude</b>	<b>Latitude</b>	<b>Project Area (ha)</b>	<b>Year</b>
Kanaura	78.85308	25.24082	5.82	2014
Kanaura	78.85280	25.24147		
Kanaura	78.85260	25.24036		
Kanaura	78.85250	25.24029		
Kanaura	78.85249	25.24023		
Kanaura	78.85219	25.24010		
Kanaura	78.85214	25.24004		
Kanaura	78.85213	25.23987		
Kanaura	78.85207	25.23978		
Kanaura	78.85194	25.23975		
Kanaura	78.85167	25.23983		
Kanaura	78.85160	25.24022		
Kanaura	78.85188	25.24045		
Kanaura	78.85203	25.24084		
Kanaura	78.85225	25.24104		
Kanaura	78.85185	25.24154		
Kanaura	78.85132	25.24166		
Kanaura	78.85100	25.24187		
Kanaura	78.85093	25.24250		
Kanaura	78.85103	25.24259		
Kanaura	78.85117	25.24262		
Kanaura	78.85120	25.24265		
Kanaura	78.85125	25.24267		
Kanaura	78.85135	25.24257		
Kanaura	78.85160	25.24260		
Kanaura	78.85167	25.24265		
Kanaura	78.85183	25.24258		
Kanaura	78.85202	25.24268		

<b>JFMC</b>	<b>Longitude</b>	<b>Latitude</b>	<b>Project Area (ha)</b>	<b>Year</b>
Kanaura	78.85207	25.24278		
Kanaura	78.85216	25.24281		
Kanaura	78.85220	25.24290		
Kanaura	78.85241	25.24302		
Kanaura	78.85260	25.24291		
Kanaura	78.85259	25.24289		
Kanaura	78.85268	25.24281		
Kanaura	78.85271	25.24284		
Kanaura	78.85269	25.24285		
Kanaura	78.85267	25.24294		
Kanaura	78.85268	25.24300		
Kanaura	78.85276	25.24305		
Kanaura	78.85278	25.24308		
Kanaura	78.85288	25.24315		
Kanaura	78.85327	25.24327		
Kanaura	78.85390	25.24357		
Kanaura	78.85400	25.24338		
Kanaura	78.85405	25.24336		
Kanaura	78.85346	25.24285		
Kanaura	78.85344	25.24284		
Kanaura	78.85336	25.24276		
Kanaura	78.85336	25.24265		
Kanaura	78.85325	25.24258		
Kanaura	78.85324	25.24254		
Kanaura	78.85346	25.24234		
Kanaura	78.85350	25.24235		
Kanaura	78.85357	25.24249		
Kanaura	78.85396	25.24227		
Kanaura	78.85408	25.24227		

JFMC	Longitude	Latitude	Project Area (ha)	Year
Kanaura	78.85407	25.24224		
Kanaura	78.85396	25.24218		
Kanaura	78.85393	25.24218		
Kanaura	78.85377	25.24199		
Kanaura	78.85376	25.24185		
Kanaura	78.85381	25.24183		
Kanaura	78.85383	25.24173		
Kanaura	78.85382	25.24170		
Kanaura	78.85383	25.24164		
Kanaura	78.85372	25.24156		
Kanaura	78.85372	25.24154		
Kanaura	78.85364	25.24145		
Kanaura	78.85364	25.24141		
Kanaura	78.85324	25.24105		
Kanaura	78.85308	25.24082		

Table 13: Baraura JFMC of Mauranipur Forest Range, Plantation in 2014

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Baraura	79.29097	25.37102	12.29	2014	
Baraura	79.29097	25.37105			
Baraura	79.29101	25.37112			
Baraura	79.29099	25.37115			
Baraura	79.29112	25.37128			
Baraura	79.29113	25.37140			
Baraura	79.29110	25.37144			
Baraura	79.29131	25.37153			
Baraura	79.29134	25.37157			
Baraura	79.29134	25.37159			
Baraura	79.29131	25.37161			

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Baraura	79.29134	25.37166			
Baraura	79.29127	25.37176			
Baraura	79.29127	25.37178			
Baraura	79.29130	25.37179			
Baraura	79.29131	25.37181			
Baraura	79.29125	25.37188			
Baraura	79.29114	25.37191			
Baraura	79.29107	25.37207			
Baraura	79.29102	25.37213			
Baraura	79.29094	25.37213			
Baraura	79.29088	25.37223			
Baraura	79.29085	25.37220			
Baraura	79.29068	25.37230			
Baraura	79.29068	25.37232			
Baraura	79.29067	25.37235			
Baraura	79.29069	25.37236			
Baraura	79.29061	25.37242			
Baraura	79.29061	25.37239			
Baraura	79.29060	25.37237			
Baraura	79.29054	25.37238			
Baraura	79.29054	25.37240			
Baraura	79.29049	25.37238			
Baraura	79.29045	25.37238			
Baraura	79.29044	25.37240			
Baraura	79.29043	25.37239			
Baraura	79.29042	25.37240			
Baraura	79.29036	25.37243			
Baraura	79.29033	25.37240			
Baraura	79.29029	25.37242			

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Baraura	79.29030	25.37248			
Baraura	79.29018	25.37252			
Baraura	79.29016	25.37254			
Baraura	79.29015	25.37254			
Baraura	79.29013	25.37255			
Baraura	79.29009	25.37253			
Baraura	79.29005	25.37254			
Baraura	79.28998	25.37264			
Baraura	79.28992	25.37262			
Baraura	79.28989	25.37263			
Baraura	79.28989	25.37267			
Baraura	79.28995	25.37276			
Baraura	79.28999	25.37276			
Baraura	79.29002	25.37279			
Baraura	79.29006	25.37282			
Baraura	79.29011	25.37281			
Baraura	79.29026	25.37294			
Baraura	79.29026	25.37297			
Baraura	79.29023	25.37299			
Baraura	79.29022	25.37301			
Baraura	79.29015	25.37302			
Baraura	79.29019	25.37310			
Baraura	79.29018	25.37320			
Baraura	79.29019	25.37322			
Baraura	79.29018	25.37323			
Baraura	79.29018	25.37328			
Baraura	79.29014	25.37330			
Baraura	79.29013	25.37331			
Baraura	79.29016	25.37338			

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Baraura	79.29025	25.37340			
Baraura	79.29031	25.37338			
Baraura	79.29032	25.37336			
Baraura	79.29036	25.37332			
Baraura	79.29038	25.37332			
Baraura	79.29038	25.37330			
Baraura	79.29038	25.37324			
Baraura	79.29039	25.37325			
Baraura	79.29040	25.37328			
Baraura	79.29041	25.37327			
Baraura	79.29043	25.37329			
Baraura	79.29044	25.37328			
Baraura	79.29044	25.37330			
Baraura	79.29053	25.37338			
Baraura	79.29054	25.37343			
Baraura	79.29063	25.37345			
Baraura	79.29067	25.37343			
Baraura	79.29076	25.37347			
Baraura	79.29083	25.37344			
Baraura	79.29086	25.37340			
Baraura	79.29091	25.37340			
Baraura	79.29095	25.37343			
Baraura	79.29098	25.37342			
Baraura	79.29103	25.37349			
Baraura	79.29106	25.37351			
Baraura	79.29125	25.37351			
Baraura	79.29138	25.37347			
Baraura	79.29139	25.37345			
Baraura	79.29142	25.37344			

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Baraura	79.29147	25.37345			
Baraura	79.29150	25.37352			
Baraura	79.29156	25.37349			
Baraura	79.29163	25.37355			
Baraura	79.29195	25.37362			
Baraura	79.29197	25.37365			
Baraura	79.29201	25.37370			
Baraura	79.29217	25.37373			
Baraura	79.29223	25.37385			
Baraura	79.29238	25.37393			
Baraura	79.29285	25.37375			
Baraura	79.29285	25.37373			
Baraura	79.29283	25.37373			
Baraura	79.29283	25.37371			
Baraura	79.29285	25.37370			
Baraura	79.29287	25.37365			
Baraura	79.29291	25.37363			
Baraura	79.29293	25.37366			
Baraura	79.29298	25.37365			
Baraura	79.29296	25.37368			
Baraura	79.29297	25.37371			
Baraura	79.29299	25.37371			
Baraura	79.29310	25.37367			
Baraura	79.29314	25.37368			
Baraura	79.29317	25.37367			
Baraura	79.29320	25.37367			
Baraura	79.29321	25.37365			
Baraura	79.29330	25.37363			
Baraura	79.29331	25.37364			

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Baraura	79.29340	25.37355			
Baraura	79.29350	25.37356			
Baraura	79.29359	25.37350			
Baraura	79.29361	25.37343			
Baraura	79.29356	25.37338			
Baraura	79.29356	25.37336			
Baraura	79.29361	25.37332			
Baraura	79.29361	25.37326			
Baraura	79.29369	25.37314			
Baraura	79.29369	25.37308			
Baraura	79.29372	25.37304			
Baraura	79.29372	25.37298			
Baraura	79.29367	25.37295			
Baraura	79.29364	25.37270			
Baraura	79.29359	25.37266			
Baraura	79.29359	25.37260			
Baraura	79.29364	25.37254			
Baraura	79.29357	25.37250			
Baraura	79.29436	25.37184			
Baraura	79.29434	25.37180			
Baraura	79.29425	25.37175			
Baraura	79.29427	25.37160			
Baraura	79.29426	25.37157			
Baraura	79.29435	25.37151			
Baraura	79.29436	25.37131			
Baraura	79.29452	25.37122			
Baraura	79.29451	25.37117			
Baraura	79.29440	25.37108			
Baraura	79.29440	25.37095			

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Baraura	79.29450	25.37079			
Baraura	79.29449	25.37073			
Baraura	79.29430	25.37064			
Baraura	79.29427	25.37060			
Baraura	79.29431	25.37046			
Baraura	79.29434	25.37044			
Baraura	79.29431	25.37040			
Baraura	79.29421	25.37034			
Baraura	79.29427	25.37034			
Baraura	79.29422	25.37025			
Baraura	79.29397	25.37029			
Baraura	79.29354	25.37017			
Baraura	79.29346	25.37023			
Baraura	79.29351	25.37028			
Baraura	79.29351	25.37035			
Baraura	79.29348	25.37039			
Baraura	79.29343	25.37040			
Baraura	79.29317	25.37022			
Baraura	79.29308	25.37024			
Baraura	79.29304	25.37029			
Baraura	79.29285	25.37021			
Baraura	79.29282	25.37016			
Baraura	79.29267	25.37020			
Baraura	79.29260	25.37019			
Baraura	79.29257	25.37016			
Baraura	79.29262	25.37008			
Baraura	79.29262	25.37001			
Baraura	79.29269	25.36996			
Baraura	79.29272	25.36986			

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Baraura	79.29275	25.36982			
Baraura	79.29272	25.36981			
Baraura	79.29273	25.36980			
Baraura	79.29276	25.36980			
Baraura	79.29276	25.36982			
Baraura	79.29285	25.36982			
Baraura	79.29298	25.36979			
Baraura	79.29313	25.36970			
Baraura	79.29316	25.36957			
Baraura	79.29313	25.36955			
Baraura	79.29313	25.36953			
Baraura	79.29315	25.36951			
Baraura	79.29315	25.36949			
Baraura	79.29314	25.36948			
Baraura	79.29317	25.36938			
Baraura	79.29315	25.36936			
Baraura	79.29311	25.36936			
Baraura	79.29310	25.36935			
Baraura	79.29311	25.36934			
Baraura	79.29313	25.36934			
Baraura	79.29313	25.36933			
Baraura	79.29317	25.36937			
Baraura	79.29334	25.36928			
Baraura	79.29337	25.36927			
Baraura	79.29340	25.36925			
Baraura	79.29340	25.36921			
Baraura	79.29338	25.36918			
Baraura	79.29340	25.36912			
Baraura	79.29344	25.36910			

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Baraura	79.29343	25.36903			
Baraura	79.29342	25.36901			
Baraura	79.29336	25.36901			
Baraura	79.29334	25.36900			
Baraura	79.29327	25.36901			
Baraura	79.29322	25.36901			
Baraura	79.29321	25.36904			
Baraura	79.29294	25.36917			
Baraura	79.29278	25.36942			
Baraura	79.29276	25.36943			
Baraura	79.29273	25.36942			
Baraura	79.29261	25.36949			
Baraura	79.29253	25.36951			
Baraura	79.29253	25.36955			
Baraura	79.29239	25.36965			
Baraura	79.29226	25.36970			
Baraura	79.29224	25.36972			
Baraura	79.29225	25.36973			
Baraura	79.29224	25.36977			
Baraura	79.29221	25.36981			
Baraura	79.29208	25.36985			
Baraura	79.29208	25.36987			
Baraura	79.29210	25.36989			
Baraura	79.29210	25.36992			
Baraura	79.29207	25.36996			
Baraura	79.29201	25.36997			
Baraura	79.29199	25.36996			
Baraura	79.29176	25.37000			
Baraura	79.29176	25.37004			

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Baraura	79.29168	25.37016			
Baraura	79.29163	25.37020			
Baraura	79.29145	25.37014			
Baraura	79.29141	25.37012			
Baraura	79.29122	25.37012			
Baraura	79.29108	25.37027			
Baraura	79.29097	25.37025			
Baraura	79.29064	25.37049			
Baraura	79.29067	25.37054			
Baraura	79.29082	25.37057			
Baraura	79.29090	25.37054			
Baraura	79.29089	25.37058			
Baraura	79.29079	25.37061			
Baraura	79.29098	25.37088			
Baraura	79.29104	25.37088			
Baraura	79.29104	25.37091			
Baraura	79.29097	25.37102			
Baraura	79.29160	25.37098			Patch - 1
Baraura	79.29161	25.37093			Patch - 1
Baraura	79.29165	25.37089			Patch - 1
Baraura	79.29180	25.37086			Patch - 1
Baraura	79.29185	25.37093			Patch - 1
Baraura	79.29185	25.37099			Patch - 1
Baraura	79.29189	25.37103			Patch - 1
Baraura	79.29194	25.37099			Patch - 1
Baraura	79.29200	25.37098			Patch - 1
Baraura	79.29202	25.37101			Patch - 1
Baraura	79.29202	25.37104			Patch - 1
Baraura	79.29195	25.37105			Patch - 1

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Baraura	79.29186	25.37110			Patch - 1
Baraura	79.29181	25.37107			Patch - 1
Baraura	79.29175	25.37100			Patch - 1
Baraura	79.29169	25.37098			Patch - 1
Baraura	79.29159	25.37104			Patch - 1
Baraura	79.29159	25.37111			Patch - 1
Baraura	79.29154	25.37118			Patch - 1
Baraura	79.29156	25.37123			Patch - 1
Baraura	79.29171	25.37137			Patch - 1
Baraura	79.29172	25.37143			Patch - 1
Baraura	79.29176	25.37148			Patch - 1
Baraura	79.29185	25.37150			Patch - 1
Baraura	79.29196	25.37141			Patch - 1
Baraura	79.29193	25.37126			Patch - 1
Baraura	79.29207	25.37119			Patch - 1
Baraura	79.29219	25.37128			Patch - 1
Baraura	79.29221	25.37127			Patch - 1
Baraura	79.29221	25.37125			Patch - 1
Baraura	79.29219	25.37121			Patch - 1
Baraura	79.29222	25.37119			Patch - 1
Baraura	79.29233	25.37122			Patch - 1
Baraura	79.29237	25.37127			Patch - 1
Baraura	79.29220	25.37137			Patch - 1
Baraura	79.29215	25.37139			Patch - 1
Baraura	79.29207	25.37133			Patch - 1
Baraura	79.29201	25.37136			Patch - 1
Baraura	79.29207	25.37141			Patch - 1
Baraura	79.29209	25.37144			Patch - 1
Baraura	79.29206	25.37147			Patch - 1

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Baraura	79.29198	25.37146			Patch - 1
Baraura	79.29183	25.37154			Patch - 1
Baraura	79.29175	25.37153			Patch - 1
Baraura	79.29169	25.37150			Patch - 1
Baraura	79.29163	25.37157			Patch - 1
Baraura	79.29159	25.37155			Patch - 1
Baraura	79.29163	25.37149			Patch - 1
Baraura	79.29164	25.37143			Patch - 1
Baraura	79.29156	25.37137			Patch - 1
Baraura	79.29153	25.37131			Patch - 1
Baraura	79.29152	25.37117			Patch - 1
Baraura	79.29144	25.37114			Patch - 1
Baraura	79.29139	25.37106			Patch - 1
Baraura	79.29142	25.37099			Patch - 1
Baraura	79.29156	25.37100			Patch - 1
Baraura	79.29160	25.37098			Patch - 1
Baraura	79.29270	25.37156			Patch - 2
Baraura	79.29261	25.37154			Patch - 2
Baraura	79.29257	25.37156			Patch - 2
Baraura	79.29247	25.37153			Patch - 2
Baraura	79.29247	25.37140			Patch - 2
Baraura	79.29244	25.37139			Patch - 2
Baraura	79.29241	25.37135			Patch - 2
Baraura	79.29241	25.37132			Patch - 2
Baraura	79.29243	25.37131			Patch - 2
Baraura	79.29251	25.37130			Patch - 2
Baraura	79.29254	25.37126			Patch - 2
Baraura	79.29269	25.37123			Patch - 2
Baraura	79.29273	25.37114			Patch - 2

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Baraura	79.29274	25.37113			Patch - 2
Baraura	79.29283	25.37119			Patch - 2
Baraura	79.29285	25.37116			Patch - 2
Baraura	79.29288	25.37115			Patch - 2
Baraura	79.29290	25.37117			Patch - 2
Baraura	79.29283	25.37128			Patch - 2
Baraura	79.29279	25.37130			Patch - 2
Baraura	79.29269	25.37128			Patch - 2
Baraura	79.29268	25.37131			Patch - 2
Baraura	79.29277	25.37134			Patch - 2
Baraura	79.29284	25.37132			Patch - 2
Baraura	79.29288	25.37135			Patch - 2
Baraura	79.29294	25.37134			Patch - 2
Baraura	79.29298	25.37136			Patch - 2
Baraura	79.29300	25.37140			Patch - 2
Baraura	79.29299	25.37149			Patch - 2
Baraura	79.29290	25.37151			Patch - 2
Baraura	79.29293	25.37160			Patch - 2
Baraura	79.29290	25.37166			Patch - 2
Baraura	79.29291	25.37168			Patch - 2
Baraura	79.29298	25.37167			Patch - 2
Baraura	79.29312	25.37157			Patch - 2
Baraura	79.29312	25.37151			Patch - 2
Baraura	79.29314	25.37151			Patch - 2
Baraura	79.29316	25.37153			Patch - 2
Baraura	79.29316	25.37156			Patch - 2
Baraura	79.29322	25.37162			Patch - 2
Baraura	79.29323	25.37166			Patch - 2
Baraura	79.29317	25.37176			Patch - 2

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Baraura	79.29313	25.37170			Patch - 2
Baraura	79.29308	25.37176			Patch - 2
Baraura	79.29304	25.37175			Patch - 2
Baraura	79.29302	25.37173			Patch - 2
Baraura	79.29293	25.37176			Patch - 2
Baraura	79.29289	25.37175			Patch - 2
Baraura	79.29285	25.37179			Patch - 2
Baraura	79.29283	25.37178			Patch - 2
Baraura	79.29285	25.37172			Patch - 2
Baraura	79.29290	25.37170			Patch - 2
Baraura	79.29283	25.37161			Patch - 2
Baraura	79.29273	25.37158			Patch - 2
Baraura	79.29270	25.37156			Patch - 2
Baraura	79.29136	25.37083			Patch - 3
Baraura	79.29137	25.37078			Patch - 3
Baraura	79.29139	25.37075			Patch - 3
Baraura	79.29142	25.37075			Patch - 3
Baraura	79.29145	25.37077			Patch - 3
Baraura	79.29146	25.37071			Patch - 3
Baraura	79.29144	25.37070			Patch - 3
Baraura	79.29136	25.37070			Patch - 3
Baraura	79.29132	25.37067			Patch - 3
Baraura	79.29131	25.37069			Patch - 3
Baraura	79.29134	25.37075			Patch - 3
Baraura	79.29134	25.37077			Patch - 3
Baraura	79.29131	25.37079			Patch - 3
Baraura	79.29129	25.37078			Patch - 3
Baraura	79.29128	25.37076			Patch - 3
Baraura	79.29124	25.37071			Patch - 3

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Baraura	79.29121	25.37070			Patch - 3
Baraura	79.29120	25.37067			Patch - 3
Baraura	79.29122	25.37064			Patch - 3
Baraura	79.29126	25.37063			Patch - 3
Baraura	79.29125	25.37060			Patch - 3
Baraura	79.29123	25.37056			Patch - 3
Baraura	79.29128	25.37051			Patch - 3
Baraura	79.29128	25.37047			Patch - 3
Baraura	79.29130	25.37043			Patch - 3
Baraura	79.29137	25.37041			Patch - 3
Baraura	79.29141	25.37043			Patch - 3
Baraura	79.29141	25.37047			Patch - 3
Baraura	79.29128	25.37060			Patch - 3
Baraura	79.29128	25.37064			Patch - 3
Baraura	79.29132	25.37065			Patch - 3
Baraura	79.29134	25.37061			Patch - 3
Baraura	79.29139	25.37061			Patch - 3
Baraura	79.29141	25.37059			Patch - 3
Baraura	79.29143	25.37054			Patch - 3
Baraura	79.29146	25.37053			Patch - 3
Baraura	79.29148	25.37059			Patch - 3
Baraura	79.29142	25.37062			Patch - 3
Baraura	79.29143	25.37066			Patch - 3
Baraura	79.29147	25.37067			Patch - 3
Baraura	79.29151	25.37070			Patch - 3
Baraura	79.29161	25.37071			Patch - 3
Baraura	79.29165	25.37077			Patch - 3
Baraura	79.29163	25.37081			Patch - 3
Baraura	79.29153	25.37083			Patch - 3

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Baraura	79.29150	25.37085			Patch - 3
Baraura	79.29147	25.37085			Patch - 3
Baraura	79.29138	25.37086			Patch - 3
Baraura	79.29136	25.37083			Patch - 3
Baraura	79.29244	25.37069			Patch - 4
Baraura	79.29237	25.37059			Patch - 4
Baraura	79.29215	25.37051			Patch - 4
Baraura	79.29215	25.37045			Patch - 4
Baraura	79.29198	25.37036			Patch - 4
Baraura	79.29199	25.37031			Patch - 4
Baraura	79.29203	25.37028			Patch - 4
Baraura	79.29209	25.37031			Patch - 4
Baraura	79.29223	25.37046			Patch - 4
Baraura	79.29235	25.37049			Patch - 4
Baraura	79.29239	25.37041			Patch - 4
Baraura	79.29246	25.37041			Patch - 4
Baraura	79.29251	25.37045			Patch - 4
Baraura	79.29256	25.37054			Patch - 4
Baraura	79.29259	25.37053			Patch - 4
Baraura	79.29259	25.37057			Patch - 4
Baraura	79.29265	25.37059			Patch - 4
Baraura	79.29277	25.37056			Patch - 4
Baraura	79.29280	25.37054			Patch - 4
Baraura	79.29280	25.37049			Patch - 4
Baraura	79.29277	25.37046			Patch - 4
Baraura	79.29271	25.37046			Patch - 4
Baraura	79.29263	25.37044			Patch - 4
Baraura	79.29260	25.37041			Patch - 4
Baraura	79.29255	25.37040			Patch - 4

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Baraura	79.29252	25.37035			Patch - 4
Baraura	79.29251	25.37032			Patch - 4
Baraura	79.29253	25.37026			Patch - 4
Baraura	79.29259	25.37024			Patch - 4
Baraura	79.29262	25.37026			Patch - 4
Baraura	79.29260	25.37034			Patch - 4
Baraura	79.29269	25.37043			Patch - 4
Baraura	79.29290	25.37049			Patch - 4
Baraura	79.29297	25.37051			Patch - 4
Baraura	79.29294	25.37055			Patch - 4
Baraura	79.29272	25.37063			Patch - 4
Baraura	79.29272	25.37066			Patch - 4
Baraura	79.29270	25.37069			Patch - 4
Baraura	79.29260	25.37074			Patch - 4
Baraura	79.29283	25.37200			Patch - 5
Baraura	79.29291	25.37205			Patch - 5
Baraura	79.29298	25.37203			Patch - 5
Baraura	79.29305	25.37204			Patch - 5
Baraura	79.29309	25.37210			Patch - 5
Baraura	79.29307	25.37214			Patch - 5
Baraura	79.29308	25.37221			Patch - 5
Baraura	79.29312	25.37224			Patch - 5
Baraura	79.29310	25.37227			Patch - 5
Baraura	79.29282	25.37215			Patch - 5
Baraura	79.29276	25.37215			Patch - 5
Baraura	79.29282	25.37223			Patch - 5
Baraura	79.29275	25.37222			Patch - 5
Baraura	79.29269	25.37229			Patch - 5
Baraura	79.29269	25.37235			Patch - 5

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Baraura	79.29278	25.37243			Patch - 5
Baraura	79.29276	25.37248			Patch - 5
Baraura	79.29263	25.37251			Patch - 5
Baraura	79.29256	25.37258			Patch - 5
Baraura	79.29259	25.37262			Patch - 5
Baraura	79.29268	25.37261			Patch - 5
Baraura	79.29271	25.37265			Patch - 5
Baraura	79.29268	25.37279			Patch - 5
Baraura	79.29251	25.37281			Patch - 5
Baraura	79.29238	25.37286			Patch - 5
Baraura	79.29235	25.37279			Patch - 5
Baraura	79.29236	25.37275			Patch - 5
Baraura	79.29241	25.37272			Patch - 5
Baraura	79.29242	25.37268			Patch - 5
Baraura	79.29237	25.37266			Patch - 5
Baraura	79.29233	25.37271			Patch - 5
Baraura	79.29227	25.37274			Patch - 5
Baraura	79.29223	25.37266			Patch - 5
Baraura	79.29225	25.37256			Patch - 5
Baraura	79.29229	25.37251			Patch - 5
Baraura	79.29254	25.37253			Patch - 5
Baraura	79.29263	25.37243			Patch - 5
Baraura	79.29258	25.37236			Patch - 5
Baraura	79.29257	25.37231			Patch - 5
Baraura	79.29261	25.37224			Patch - 5
Baraura	79.29265	25.37221			Patch - 5
Baraura	79.29275	25.37205			Patch - 5
Baraura	79.29274	25.37202			Patch - 5
Baraura	79.29275	25.37197			Patch - 5

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Baraura	79.29272	25.37187			Patch - 5
Baraura	79.29275	25.37182			Patch - 5
Baraura	79.29279	25.37182			Patch - 5
Baraura	79.29280	25.37186			Patch - 5
Baraura	79.29279	25.37189			Patch - 5
Baraura	79.29128	25.37212			Patch - 6
Baraura	79.29131	25.37214			Patch - 6
Baraura	79.29133	25.37219			Patch - 6
Baraura	79.29138	25.37222			Patch - 6
Baraura	79.29140	25.37220			Patch - 6
Baraura	79.29140	25.37216			Patch - 6
Baraura	79.29142	25.37215			Patch - 6
Baraura	79.29149	25.37214			Patch - 6
Baraura	79.29150	25.37213			Patch - 6
Baraura	79.29154	25.37213			Patch - 6
Baraura	79.29157	25.37215			Patch - 6
Baraura	79.29157	25.37219			Patch - 6
Baraura	79.29153	25.37222			Patch - 6
Baraura	79.29143	25.37222			Patch - 6
Baraura	79.29142	25.37224			Patch - 6
Baraura	79.29146	25.37227			Patch - 6
Baraura	79.29151	25.37227			Patch - 6
Baraura	79.29153	25.37228			Patch - 6
Baraura	79.29154	25.37233			Patch - 6
Baraura	79.29151	25.37237			Patch - 6
Baraura	79.29143	25.37236			Patch - 6
Baraura	79.29134	25.37234			Patch - 6
Baraura	79.29133	25.37236			Patch - 6
Baraura	79.29119	25.37239			Patch - 6

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Baraura	79.29112	25.37237			Patch - 6
Baraura	79.29112	25.37234			Patch - 6
Baraura	79.29114	25.37230			Patch - 6
Baraura	79.29127	25.37230			Patch - 6
Baraura	79.29122	25.37219			Patch - 6
Baraura	79.29122	25.37213			Patch - 6
Baraura	79.29128	25.37212			Patch - 6
Baraura	79.29108	25.37250			Patch - 7
Baraura	79.29107	25.37254			Patch - 7
Baraura	79.29101	25.37261			Patch - 7
Baraura	79.29102	25.37264			Patch - 7
Baraura	79.29115	25.37271			Patch - 7
Baraura	79.29119	25.37286			Patch - 7
Baraura	79.29110	25.37302			Patch - 7
Baraura	79.29111	25.37317			Patch - 7
Baraura	79.29106	25.37322			Patch - 7
Baraura	79.29106	25.37325			Patch - 7
Baraura	79.29103	25.37326			Patch - 7
Baraura	79.29098	25.37324			Patch - 7
Baraura	79.29095	25.37319			Patch - 7
Baraura	79.29099	25.37314			Patch - 7
Baraura	79.29098	25.37309			Patch - 7
Baraura	79.29112	25.37279			Patch - 7
Baraura	79.29110	25.37275			Patch - 7
Baraura	79.29100	25.37270			Patch - 7
Baraura	79.29096	25.37267			Patch - 7
Baraura	79.29090	25.37270			Patch - 7
Baraura	79.29081	25.37270			Patch - 7
Baraura	79.29079	25.37265			Patch - 7

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Baraura	79.29080	25.37259			Patch - 7
Baraura	79.29093	25.37255			Patch - 7
Baraura	79.29099	25.37246			Patch - 7
Baraura	79.29104	25.37246			Patch - 7
Baraura	79.29108	25.37250			Patch - 7

**Table 14: Parechha JFMC of Maunth Forest Range, Plantation in 2012**

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Parechha	79.04536	25.74432	19.74	2012	
Parechha	79.04555	25.74432			
Parechha	79.04557	25.74439			
Parechha	79.04554	25.74445			
Parechha	79.04556	25.74451			
Parechha	79.04547	25.74458			
Parechha	79.04564	25.74510			
Parechha	79.04586	25.74534			
Parechha	79.04587	25.74529			
Parechha	79.04584	25.74520			
Parechha	79.04586	25.74510			
Parechha	79.04590	25.74501			
Parechha	79.04591	25.74492			
Parechha	79.04603	25.74471			
Parechha	79.04611	25.74467			
Parechha	79.04610	25.74451			
Parechha	79.04606	25.74442			
Parechha	79.04619	25.74415			
Parechha	79.04622	25.74406			
Parechha	79.04627	25.74404			
Parechha	79.04644	25.74375			

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Parechha	79.04673	25.74358			
Parechha	79.04688	25.74319			
Parechha	79.04708	25.74300			
Parechha	79.04713	25.74300			
Parechha	79.04716	25.74296			
Parechha	79.04738	25.74297			
Parechha	79.04747	25.74301			
Parechha	79.04763	25.74295			
Parechha	79.04796	25.74292			
Parechha	79.04819	25.74297			
Parechha	79.04832	25.74304			
Parechha	79.04784	25.74242			
Parechha	79.04796	25.74131			
Parechha	79.04802	25.74118			
Parechha	79.04794	25.74119			
Parechha	79.04775	25.74112			
Parechha	79.04767	25.74100			
Parechha	79.04756	25.74081			
Parechha	79.04749	25.74076			
Parechha	79.04745	25.74067			
Parechha	79.04725	25.74058			
Parechha	79.04715	25.74040			
Parechha	79.04731	25.74003			
Parechha	79.04720	25.73920			
Parechha	79.04713	25.73914			
Parechha	79.04702	25.73895			
Parechha	79.04691	25.73854			
Parechha	79.04662	25.73824			
Parechha	79.04639	25.73793			

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Parechha	79.04639	25.73790			
Parechha	79.04641	25.73790			
Parechha	79.04640	25.73785			
Parechha	79.04616	25.73745			
Parechha	79.04610	25.73740			
Parechha	79.04600	25.73742			
Parechha	79.04583	25.73751			
Parechha	79.04573	25.73752			
Parechha	79.04565	25.73747			
Parechha	79.04558	25.73746			
Parechha	79.04520	25.73715			
Parechha	79.04512	25.73738			
Parechha	79.04488	25.73782			
Parechha	79.04475	25.73797			
Parechha	79.04438	25.73862			
Parechha	79.04435	25.73872			
Parechha	79.04429	25.73873			
Parechha	79.04426	25.73875			
Parechha	79.04420	25.73873			
Parechha	79.04417	25.73881			
Parechha	79.04418	25.73890			
Parechha	79.04408	25.73905			
Parechha	79.04403	25.73921			
Parechha	79.04406	25.73926			
Parechha	79.04406	25.73934			
Parechha	79.04391	25.73951			
Parechha	79.04400	25.73964			
Parechha	79.04407	25.73984			
Parechha	79.04424	25.73996			

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Parechha	79.04442	25.73996			
Parechha	79.04451	25.74000			
Parechha	79.04453	25.74010			
Parechha	79.04459	25.74010			
Parechha	79.04469	25.74001			
Parechha	79.04477	25.74001			
Parechha	79.04509	25.74018			
Parechha	79.04486	25.74083			
Parechha	79.04467	25.74096			
Parechha	79.04462	25.74094			
Parechha	79.04461	25.74089			
Parechha	79.04465	25.74081			
Parechha	79.04442	25.74067			
Parechha	79.04417	25.74088			
Parechha	79.04432	25.74145			
Parechha	79.04432	25.74158			
Parechha	79.04440	25.74160			
Parechha	79.04440	25.74158			
Parechha	79.04445	25.74155			
Parechha	79.04449	25.74157			
Parechha	79.04450	25.74155			
Parechha	79.04446	25.74144			
Parechha	79.04446	25.74141			
Parechha	79.04452	25.74139			
Parechha	79.04470	25.74123			
Parechha	79.04472	25.74125			
Parechha	79.04461	25.74216			
Parechha	79.04458	25.74216			
Parechha	79.04442	25.74205			

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Parechha	79.04442	25.74198			
Parechha	79.04440	25.74196			
Parechha	79.04439	25.74189			
Parechha	79.04432	25.74184			
Parechha	79.04431	25.74205			
Parechha	79.04480	25.74306			
Parechha	79.04493	25.74302			
Parechha	79.04498	25.74303			
Parechha	79.04503	25.74309			
Parechha	79.04511	25.74312			
Parechha	79.04514	25.74309			
Parechha	79.04523	25.74310			
Parechha	79.04525	25.74312			
Parechha	79.04532	25.74311			
Parechha	79.04530	25.74303			
Parechha	79.04531	25.74299			
Parechha	79.04550	25.74296			
Parechha	79.04556	25.74298			
Parechha	79.04554	25.74307			
Parechha	79.04554	25.74312			
Parechha	79.04553	25.74315			
Parechha	79.04543	25.74319			
Parechha	79.04532	25.74320			
Parechha	79.04516	25.74332			
Parechha	79.04509	25.74331			
Parechha	79.04497	25.74319			
Parechha	79.04486	25.74320			
Parechha	79.04490	25.74353			
Parechha	79.04500	25.74385			

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Parechha	79.04513	25.74402			
Parechha	79.04519	25.74399			
Parechha	79.04524	25.74400			
Parechha	79.04526	25.74402			
Parechha	79.04523	25.74407			
Parechha	79.04518	25.74410			
Parechha	79.04536	25.74432			
Parechha	79.04566	25.74296			Patch - 1
Parechha	79.04569	25.74287			Patch - 1
Parechha	79.04568	25.74276			Patch - 1
Parechha	79.04542	25.74255			Patch - 1
Parechha	79.04543	25.74250			Patch - 1
Parechha	79.04566	25.74262			Patch - 1
Parechha	79.04569	25.74269			Patch - 1
Parechha	79.04572	25.74269			Patch - 1
Parechha	79.04573	25.74265			Patch - 1
Parechha	79.04576	25.74265			Patch - 1
Parechha	79.04581	25.74271			Patch - 1
Parechha	79.04584	25.74271			Patch - 1
Parechha	79.04583	25.74263			Patch - 1
Parechha	79.04577	25.74260			Patch - 1
Parechha	79.04574	25.74257			Patch - 1
Parechha	79.04575	25.74254			Patch - 1
Parechha	79.04581	25.74253			Patch - 1
Parechha	79.04570	25.74240			Patch - 1
Parechha	79.04557	25.74226			Patch - 1
Parechha	79.04546	25.74226			Patch - 1
Parechha	79.04533	25.74226			Patch - 1
Parechha	79.04529	25.74224			Patch - 1

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Parechha	79.04528	25.74220			Patch - 1
Parechha	79.04533	25.74220			Patch - 1
Parechha	79.04538	25.74221			Patch - 1
Parechha	79.04538	25.74218			Patch - 1
Parechha	79.04535	25.74216			Patch - 1
Parechha	79.04535	25.74212			Patch - 1
Parechha	79.04544	25.74210			Patch - 1
Parechha	79.04545	25.74216			Patch - 1
Parechha	79.04548	25.74218			Patch - 1
Parechha	79.04561	25.74217			Patch - 1
Parechha	79.04561	25.74204			Patch - 1
Parechha	79.04565	25.74196			Patch - 1
Parechha	79.04564	25.74191			Patch - 1
Parechha	79.04570	25.74195			Patch - 1
Parechha	79.04572	25.74212			Patch - 1
Parechha	79.04570	25.74219			Patch - 1
Parechha	79.04584	25.74252			Patch - 1
Parechha	79.04590	25.74256			Patch - 1
Parechha	79.04593	25.74253			Patch - 1
Parechha	79.04598	25.74253			Patch - 1
Parechha	79.04599	25.74258			Patch - 1
Parechha	79.04591	25.74266			Patch - 1
Parechha	79.04589	25.74275			Patch - 1
Parechha	79.04575	25.74278			Patch - 1
Parechha	79.04575	25.74289			Patch - 1
Parechha	79.04583	25.74291			Patch - 1
Parechha	79.04596	25.74288			Patch - 1
Parechha	79.04604	25.74291			Patch - 1
Parechha	79.04595	25.74303			Patch - 1

JFMC	Longitude	Latitude	Project Area (ha)	Year	Removed patches
Parechha	79.04571	25.74300			Patch - 1
Parechha	79.04566	25.74296			Patch - 1
Parechha	79.04553	25.73827			Patch - 2
Parechha	79.04569	25.73828			Patch - 2
Parechha	79.04577	25.73820			Patch - 2
Parechha	79.04582	25.73805			Patch - 2
Parechha	79.04588	25.73798			Patch - 2
Parechha	79.04586	25.73790			Patch - 2
Parechha	79.04574	25.73782			Patch - 2
Parechha	79.04575	25.73778			Patch - 2
Parechha	79.04583	25.73769			Patch - 2
Parechha	79.04586	25.73754			Patch - 2
Parechha	79.04592	25.73753			Patch - 2
Parechha	79.04597	25.73760			Patch - 2
Parechha	79.04604	25.73768			Patch - 2
Parechha	79.04596	25.73776			Patch - 2
Parechha	79.04599	25.73785			Patch - 2
Parechha	79.04589	25.73804			Patch - 2
Parechha	79.04580	25.73827			Patch - 2
Parechha	79.04554	25.73841			Patch - 2
Parechha	79.04550	25.73834			Patch - 2
Parechha	79.04553	25.73827			Patch - 2

## Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
05.1	4 May 2015	Editorial revision to correct version numbering.
05.0	1 April 2015	Revisions to: <ul style="list-style-type: none"> <li>• Include provisions related to delayed submission of a monitoring plan;</li> <li>• Provisions related to the Host Party;</li> <li>• Remove reference to programme of activities;</li> <li>• Overall editorial improvement.</li> </ul>
04.0	25 June 2014	Revisions to: <ul style="list-style-type: none"> <li>• Include the Attachment: Instructions for filling out the monitoring report form (these instructions supersede the "Guideline: Completing the monitoring report form" (Version 04.0));</li> <li>• Include provisions related to standardized baselines;</li> <li>• Add contact information on a responsible person(s)/ entity(ies) for completing the CDM-MR-FORM in A.6 and Appendix 1;</li> <li>• Change the reference number from <i>F-CDM-MR</i> to <i>CDM-MR-FORM</i>;</li> <li>• Editorial improvement.</li> </ul>
03.2	5 November 2013	Editorial revision to correct table in page 1.
03.1	2 January 2013	Editorial revision to correct table in section E.5.
03.0	3 December 2012	Revision required to introduce a provision on reporting actual emission reductions or net GHG removals by sinks for the period up to 31 December 2012 and the period from 1 January 2013 onwards (EB70, Annex 11).
02.0	13 March 2012	Revision required to ensure consistency with the "Guidelines for completing the monitoring report form" (EB 66, Annex 20).
01	28 May 2010	EB 54, Annex 34. Initial adoption.
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