PROJECT REVIEW REPORT

This project review report includes findings raised during Verra's review of the project specified below. The VVB must address the findings before the project request can be considered for approval by Verra. The project review report will be made publicly available on the Verra Registry. Confidential information may be provided in separate attachments.

Project ID	2943
Project Name	Global Cookstove Program (EKI Phase 05)
Review Type	Registration and Verification
Verification period	01 October 2022 to 30 April 2023
Program(s)	VCS Program
Project Proponent	EKI Energy Services Limited
Methodology	VMR0006 ¨*Methodology for Installation of High Efficiency Firewood Cookstoves*¨ version 1.1
VVB	LGAI Technological Center, S.A.(Applus+ Certification)
Assessment Criteria	*VCS Standard, v4.4*
Date of First Issue	21 September 2023
Date of Second Issue	05 Febraury 2024
Date of Third Issue	27 May 2024
Date of Forth Issue	22 August 2024
Review Conclusion	Approved
Date of Final Issue	21 October 2024

FINDINGS

<table>
<tr><th>#</th><th>Finding Description</th><th>VVB Response</th><th>Status</th></tr>
<tr><td>1</td><td colspan="3">Information on 1st instance is missing</td></tr>
<tr><td></td><td><u>Issue</u>

The state in which the first instance was installed is not mentioned under Section 1.8 of the VCS joint PD/MR.

The VVB does not explain how it validated this in its report and does not include the reference in Appendix I.

<u>Action item</u>
The VVB must ensure that the project proponent includes information on the state in which the first instance was installed under Section 1.8 of the VCS joint PD/MR.

The VVB must explain how they validated this in the VCS joint VR/VR.

<u>Program rule(s)</u>
VCS Joint Project Description and Monitoring Report Template v4.2, section 2.4</td><td>Round 1

<u>VVB Response</u>
1st Instance (ICS) distributed under the project activity was in the state of Rajasthan with beneficiary details outlined in the Table below.<table><tr><td>Date of Distribution</td><td>ICS Serial Number</td><td>Name of the Beneficiary</td><td>State</td></tr><tr><td>01-Oct-22</td><td>GHG-22D/0188720</td><td>Vishnu</td><td>Rajasthan</td></tr></table>The details of first project instance is now included under section 1.8 of the joint PD & MR. The same has been checked with screenhot of mobile app employs to record beneficiary data including Cookstove serial numbers, addresses, government IDs, and more, is captured in real-time using the EKI mobile app on the day of distribution of ICS, VVB has also cross checked the with the Carbon Credit Ownership Agreement(CS Serial No - GHG -22 D/0188720 dated 01-Oct-2022) which confirmed the distribution date 01-Oct-2022. VVB has provided assessment for the same in Section 3.1 of VR.

<u>Verra Response</u>
The details of first project instance is now included under section 1.8 of the joint PD & MR. This finding is now closed, and no further response is required.</td><td>closed</td></tr>
<tr><td>2</td><td colspan="3">Dates of the PCP are missing</td></tr>
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	Issue In section 2.4, dates when project was listed for the public commenting period (PCP) are not included.. **Action item** The VVB must ensure that PP provides information on dates when project was open on Verra website for public comments is missing. Program rule(s) *VCS Joint Project Description and Monitoring Report Template v4.2, section 2.4*	**Round 1** VVB Response Project proponent has now included the information regaring listing of project the project in Section 2.4 of the Joint PD & MR. The project activity was open for public commnet on VERRA website between 15-April-2022 to 15-May-2022. Verra Response This finding is now closed, and no further response is required.	closed

3	Further information and assessment on calculation of fNRB		
	Issue As per the information provided in the project description in section 4.4 related to the ex-ante calculation of f_{NRB} it is not clear: (a) If it has been estimated using the most recent historical year for which data is available. (b) How H has been calculated as per Section 3.1 of the TOOL30, v.04.0; (c) How RB has been calculated as per Section 3.2 of the TOOL30, v.04.0; (d) f_{NRB} calculation sheet has not been submitted. **Action item** 1) The VVB must ensure the PD includes details of how the f_{NRB} was calculated and how it complies with the provisions of TOOL30 in section 4.4 of project description. 2) The VVB must ensure that PP submits the final version of the f_{NRB} calculation sheet.	**Round 1** VVB Response There is no 4.4 Section neither in Joint PD & MR not in VR. However, PP has revised the Section 5.4 of Joint PD & MR : a) The availability of data for parameters such as fuel wood demand, commercial wood demand, area under forest, and tree outside forest category may vary in terms of vintage. In accordance with paragraph 10 of Tool 30, PP has considered data from different vintages. This approach is justified as it leads to a conservative estimate of fNRB. The details regarding the conservativeness of the considered data for the input parameters from different vintages in the estimation process of fNRB along with specifics on the data vintage for each parameter is provided in section 5.4 of the Joint PD & MR,. PP has also provided a comprehensive justification for the choice of data in the appended tables. b) The calculation of the H value using most recent historical data as per Section 3.1 of the TOOL30, v.04.0 is now included in the updated Joint PD & MR. The justification for the same are as follows:	closed

	3) The VVB must further elaborate in VCS joint VR/VR how it validated that the f_{NRB} has been calculated in line with the TOOL30, v.04.0. Program rule(s) TOOL30, v.04.0; *VCS Joint Project Description and Monitoring Report Template v4.2, section 2.4*		Parameter	Justification of Data Source	
			Fuel Wood Consumption	The fuel wood demand used for estimation of fNRB is considered from the State of Forest Report 2011 (chapter 7) published by Forest Survey of India, MoEFCC, Govt of India. Since the referred literature is the last publicly available data source relating to fuel wood demand in the state therefore in accordance to paragraph 10 of Tool 30 older vintage data is being considered. It is in this context worthwhile to mention that 2011 value of fuel wood demand considered for estimation of fNRB is conservative as it has not accounted for the growth in demand of wood fuel linked with population growth in the states of Bihar, Chhattisgarh, Dadra & Nagar Haveli, Gujarat, Jharkhand, Maharashtra, Odisha, Rajasthan and Uttar Pradesh till 2022. Moreover, cross verification has been made to assess the wood fuel demand in the states of Bihar, Chhattisgarh, Dadra & Nagar Haveli, Gujarat, Jharkhand, Maharashtra, Odisha, Rajasthan and Uttar Pradesh using alternate approach as specified under Equation 3 of the Tool 30 and the MoEFCC estimated value of fuel wood demand for the states of Bihar, Chhattisgarh, Dadra & Nagar Haveli, Gujarat, Jharkhand, Maharashtra, Odisha, Rajasthan and Uttar Pradesh are found to be more conservative and therefore used for the estimation of the total consumption of woody biomass. The detailed estimation using alternate approach is presented in the fNRB estimation sheet.	
			Commercial	The commercial wood demand used for	

			Wood Consumption	estimation of fNRB is considered from the State of Forest Report 2011 (chapter 7) published by Forest Survey of India, MoEFCC, Govt of India. Since the referred literature is the last publicly available data source relating to fuel wood demand in the state therefore in accordance to paragraph 10 of Tool 30 older vintage data is being considered. It is in this context worthwhile to mention that 2011 value of commercial wood demand considered for estimation of fNRB is conservative as it has not accounted for the growth in demand of commercial wood linked with population growth states of Bihar, Chhattisgarh, Dadra & Nagar Haveli, Gujarat, Jharkhand, Maharashtra, Odisha, Rajasthan and Uttar Pradesh till 2022.	
			Consumption of Bamboo and small timber	The commercial wood demand used for estimation of fNRB is considered from the State of Forest Report 2019 (chapter 10) published by Forest Survey of India, MoEFCC, Govt of India. Since the referred literature is the last publicly available data source relating to fuel wood demand in the state therefore in accordance to paragraph 10 of Tool 30 different vintage data is being considered. As the data relates to official statistics of Govt of India the same is considered as most conservative.	
			c) The calculation of RB with most recent historical data as per Section 3.2 of the TOOL30, v.04.0 is now included in the updated Joint PD & MR. The justification of the data sources are as follows;		

Parameter	Justification of Data Source
Mean Annual Increment	The mean annual increment of India Forest as published by Government of Tamil Nadu which also outlines the average value for India forest is considered. Since the value considered is the publicly available national statistics the same is considered for estimation of fNRB. The conservativeness of the data is crosschecked from the reference literature "India Forestry Outlook Study, by The Ministry of Environment and Forests Government of India" published by FAO (https://www.fao.org/3/am251e/am251e00.pdf) also outlines the mean annual increment (MAI) of India's forests is assessed to be less than 0.5 m3/hectare/year.
Area under Forest	The data and value related to area under forest is obtained from latest State of Forest Report 2021 (chapter 13) published by Forest Survey of India, MoEFCC, Govt of India.
Area under Non Forest Land	The data and value related to area under non-forest land is obtained from latest State of Forest Report 2021 (chapter 13) published by Forest Survey of India, MoEFCC, Govt of India.

d) The assessment of fNRB value caculation is provided in Section 3.4.5 of VR. fNRB values are calculated in line with the TOOL30, v.04.0. The final version of fNRB calculation sheet is being submitted along with response and revised documents.The final version of fNRB calculation sheet is being submitted along with response and revised MR. There is no change in the fNRB value after the inititial submission of the validation documents to VERRA

		Verra Response The PP has revised Section 5.4 of Joint PD & MR with details of how the f_{NRB} was calculated and how it complies with the provisions of TOOL30. The assessment of fNRB value calculation is provided in Section 3.4.5 of VR. This finding is now closed, and no further response is required.	

4	fNRB value: comparision with literature is missing		
	Issue Tool 30 version 4 requires a comparison of the fNRB achieved with those from other literature. The project proponent does not provide this comparison in the VCS joint PD/MR. It is unclear how para. 6 b) TOOL30 has been applied for each state and has been compared the fNRB values with the recently approved projects. It is unclear how much each of the factors in Para 13 of Tool 30 could affect the values of the fNRB achieved by the project. **Action Required** 1. The VVB must ensure the project proponent provides the comparison on the	**Round 1** VVB Response 1. Project Proponent has included the comparison of the estimated fNRB with the literature in accordance with the para 6 (b) of TOOL 30 in Section 5.4 of Joint PD & MR. VVB has also updated the VR accordingly. 2. There are no other publicly available literature outlining the value of fNRB for the states of Bihar, Chhattisgarh, Dadra & Nagar Haveli, Gujarat, Jharkhand, Maharashtra, Odisha, Rajasthan and Uttar Pradesh. PP has made comparison of fNRB with the ICS registered projects under VERRA. Thus, acceptable to VVB. The same are given below: Estimated value:	Closed

Sr. No.	State	f_{NRB}
1	Bihar	97.06%
2	Chhattisgarh	77.47%
3	Dadra & Nagar Haveli	89.35%
4	Gujarat	94.35%
5	Jharkhand	85.50%
6	Maharashtra	88.30%
7	Odisha	85.60%
8	Rajasthan	94.39%
9	Uttar Pradesh	96.76%

Comparison of fNRB of the current project with other registered project activity.

Project Reference	State	f_{NRB}
Project ID- 3240	Odisha	87.14%
	Jharkhand	91.30%

	values achieved and those reported. 2. The VVB must ensure that the project proponent clarifies how how para. 6 b) TOOL30 has been applied for each state and compared to the fNRB values with the recently approved projects. 3. The VVB must ensure to provide an assessment on the influence the factors mentioned in para 13 of Tool 30 could have on the value achieved of fNRB 4. The VVB must ensure to provide further analysis with other relevant scientific literature." **Program Rule(s)** *Tool 30 v4.0,* Para 6 and 13 *VCS Joint Project Description & Monitoring Report Template: v4.2*, Section 7.5	<table><tr><td rowspan="3">Project ID- 3160</td><td>Jharkhand</td><td>95.00%</td></tr><tr><td>Uttar Pradesh</td><td>95.00%</td></tr><tr><td>Odisha</td><td>91.00%</td></tr><tr><td rowspan="3">Project ID- 3158</td><td>Chhasttisgarh</td><td>92.00%</td></tr><tr><td>Bihar</td><td>99.00%</td></tr><tr><td>Odisha</td><td>91.00%</td></tr><tr><td>Project ID- 3007</td><td>Maharashtra</td><td>91.30%</td></tr></table> The value of fNRB in the registered project activities are higher than/comparable with the estimated fNRB value for the project activity, therefore the fNRB value considered is deemed to be conservative. There are no other project registered currently under VCS for the state of Rajasthan, Gujarat and Dadra & NH. Thus, comparions has been performed for the available information for the above mentioned states only. 3. Para 13 of Tool 30 says "If the fNRB value is estimated at the national level", which means it primarily applies to projects estimating the fNRB at the national level. However, in the project activity, the fNRB calculation has been conducted at the state level. Consequently, the provisions outlined in para 13 of Tool 30 are not directly applicable in this context. 4. VVB has also cross checked the analysis with other scientific literature related to the same type of project activities found in the states where this project activity has been implemented and the value of fNRB in the registered project activities are higher than/comparable with the estimated fNRB value for the project activity, Thus, in the VVB opinion, making comparison with the similar registered projects are appropriate and acceptable. VVB has also included assessment in Section 3.4.6 of VR. <u>Verra Response</u> The fNRB calculation is conducted by PP at the regisonal level, not national. Since no comparative data is available for fNRB value, PP compared the value estimated with some registered project activities. VVB found this acceptable and notes that the value for the current project activity is the most conservative and hence accepted. However, this finding cannot be closed. **Round 2** <u>Issue</u> Considering the fNRB calculation for Bihar state, the following issues have been identified in the estimation of consumption of woody biomass; 1. How has the VVB ensured that double counting does not occur in estimation of woody biomass consumption when considering small timber and bamboo use by FFVs in addition to household wood consumption in construction, furniture and as fuel. The following issues have been identified in the estimation of renewable biomass	

		2. The source of MAI is not accessible. It is unclear how density of selective species can be used for converting a pan India volumetric MAI value to tons/ha/year value. 3. PP has considered entire Protected and Reserved forest as inaccessible (Pforest,i), however as per Indian Forest conservation Act 1927 activities like lumbering, grazing, fuelwood collection and hunting are allowed within protected forest unless prohibited and allowed with restrictions in Reserved forests hence 100 percent of these areas cannot be considered in-accessible. 4. PP has included trees outside forest for renewable biomass estimation, however the MAI value applied for calculating this biomass is same as that of forest biomass. <u>Action required</u> 1. VVB to ensure that double counting of wood consumption sources do not occur in estimation of non-renewable biomass. 2. The VVB must ensure that the source of MAI is accessible. VVB must justify how it assessed that density of specific trees found in the region could be used for pan India MAI value. 3. The VVB must ensure that the project proponent explains why the entire Protected and Reserved forest area is considered as inaccessible (Pforest,i). 4. The VVB must ensure that the PP includes justification for using MAI forest for assessing AGB of trees outside recorded forest 5. The VVB must ensure that the project proponent checks and corrects related discrepancies if any in the fNRB calculation sheet for other states considered in the project. <u>VVB Response:</u> 1. The VVB has assessed the updated fNRB sheet submitted by the project Develeper and found that the the consumption of small timber and bamboo has been removed from the Total Consumption of Woody biomass calculations except for Dadra and Nagar Haveli where zero value has been considered (in absence of available information) for Commercial Wood Consumption. Project Developer has revised the values in re-submitted MR. Thus, VVB is able to confirm that there i small timber and bamboo has been removed from the Total Consumption of Woody biomass calculations. Thus, acceptable to VVB. VVB has also updated the VR in line with changes in revised MR. 2. PP now provided the PDF file of the source of MAI applied. MAI was calculated by multiplying the 'growth rate of biomass' in m3/ha/year by the 'average wood density' in ton/m3. In the absence of regional data for biomass growth rates, the project proponent (PP) used national data. To convert this value to ton/ha/year, PP needed to employ a density value in ton/m3. India's	

		country-level average wood density is less than 0.63[1], while average regional values used in this project activity have been found to be 0.69, which is slightly higher. Thus, the regional values considered for this project activity are more conservative, potentially resulting in a higher MAI values. Therefore, by incorporating a specific value for the region which is more conservative estimate of MAI.The PDF file of the source of MAI is being submitted alongwith the response. 3. As per the THE INDIAN FOREST ACT, 1927[2] section 26, Acts which prohibited the following in a reserved forest: a. trespasses or pastures cattle, or permits cattle to trespass b. causes any damage by negligence in felling any tree or cutting or dragging any timber. c. fells, girdles, lops, or bums any tree or strips off the bark or leaves from, or otherwise damages, the same d. clears or breaks up any land for cultivation or any other purpose. Moreover, according to the Indian Forest Act of 1927 individuals seeking to collect firewood from a reserved forest must first obtain written consent from the Forest Officer or relevant authorities. Unauthorized removal of logs from such forests constitutes theft. However, in the Indian context, households receiving Improved Cookstoves (ICS) from the project Developer do not have any reserved forests nearby.The regions where the ICS were distributed, firewood is sourced from nearby naturally grown trees, which are completely nonrenewable as observed and confirmed through interview with project beneficies during the OSV. Further, VVB confimed from the project beneficilies that obtaining consent from the Forest Officer for firewood collection is irrelevant in these circumstances. Hence, reserved forest is considered as inaccessible (Pforest,i) is acceptable to VVB. 4. In accordance with the "Source of data" section within Data/Parameter Table 5 of Methodological TOOL 30 "Calculation of the fraction of non-renewable Biomass," Version 04.0, which states, "if the MAI value for other land areas is not available in a country while only the MAI value for forest areas exists, the MAI value for forest areas may be used as the MAI value for other land areas with due justification," VVB found that the MAI value for other land areas is unavailable for India. Thus, the MAI value for forest areas, available for India in m3/ha/yr unit used by project developer is acceptable to VVB. . 5. Project Developer has submitted the updated fNRB sheet and the same has been checked by the VVB and found that corrections are in order and acceptable to VVB. . Project Developer has made following changes in fNRB sheets	

[1] Rajashekar, G., Fararoda, R., Reddy, R. S., Jha, C. S., Ganeshaiah, K. N., Singh, J. S., & Dadhwal, V. K. (2018). Spatial distribution of forest biomass carbon (Above and below ground) in Indian forests. Ecological Indicators, 85, 742–752. doi:10.1016/j.ecolind.2017.11.024

[2] http://nbaindia.org/uploaded/Biodiversityindia/Legal/3.%20Indian%20forest%20act.pdf

- In the row 21 of 'consumption of woody biomass' tab, For calculating the roundwood equivalent 30% conversion loss[3]was considered in Commercial Wood Consumption as per India State of Forest Report 2021 (Cpater 7: Socio-Economic Contribution of forests: Production and Consumption of Forest Resources in India under Section 7.4.7(except in Dadra and Nagar Haveli, where Commercial Wood Consumption is zero). As per this report, a 30% conversion loss was factored into the calculation of roundwood. In this context, 30% conversion loss denotes the quantity of wood that is lost or inefficiently utilized during the conversion or dressing process of roundwood. The same is described by the PP in Section 5.4 of the monitoring report.
- Consumption of small timber and bamboo now removed from the calculation of consumption of woody biomass (except in Dadra and Nagar Haveli, as zero value has been considered (in absence of available information) for Commercial Wood Consumption, thus there is no chance of double counting).
- In tab 'Renewable Biomass', calculation mistake (Wrong cell selection) is now corrected for $MAIforest$, & $MAIother$

Furthermore, PP compared the resulting fNRB values with those registered in project VCS 2942. They conservatively adopted the fNRB values from VCS 2942 for the states of Bihar, Chhattisgarh, Gujarat, and Rajasthan. Revised fNRB values were used for the remaining states (Maharashtra, Dadra NH, Jharkhand, and Uttar Pradesh). Consequently, the Joint PD& MR, estimated ER sheet, and actual ER sheet were revised. The comparison with VCS 2942 and the final fNRB values are provided below for reference.

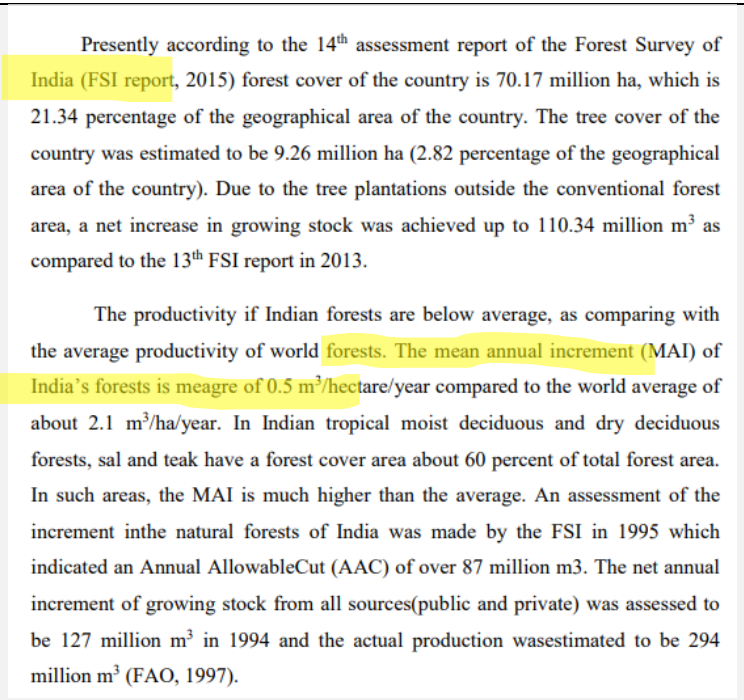
State	Recalculated fNRB	fNRB values from VCS 2942	Conservative fNRB
Dadra NH	89.62%	-	89.62%
Jharkhand	87.47%	-	87.47%
UP	97.42%	-	97.42%
Bihar	97.93%	95.85%	95.85%
Chhattisgarh	78.01%	67.30%	67.30%
Gujarat	95.24%	92.31%	92.31%
Maharashtra	90.05%	90.38%	90.05%
Odisa	87.02%	-	87.02%
Rajastthan	96.14%	91.38%	91.38%

[3] https://fsi.nic.in/cover_2011/chapter7.pdf .

		VVB has also updated the VR accordingly. Verra Response The VVB responses have been assessed and some issues raised were addressed while additional information is still required for others as explained below. This finding cannot be closed. **Round 3** 1) The VVB has confimred that the the consumption of small timber and bamboo has been removed from the Total Consumption of Woody biomass calculations except for Dadra and Nagar Haveli where zero value has been considered (in absence of available information) for Commercial Wood Consumption. **Closed** 2) MAI was calculated by multiplying the 'growth rate of biomass' in m3/ha/year by the 'average wood density' in ton/m3./ To convert this value to ton/ha/year, PP needed to employ a density value in ton/ m3. India's country-level average wood density is less than 0.63[4], while average regional values used in this project activity have been found to be 0.69. In the absence of regional data for biomass growth rates, the project proponent (PP) used national data. The PDF document from which the MAI value is sourced is provided. However, the MAI value is sourced from a 1997 FAO document and the review team noted that as per Tool 30, Data/Parameter Table 5, vintage of MAI data shall not be before year 2000. Moreover, as per same table, if national studies or government data or official statistics are used, PP has to provide comparison of the considered value with FAO and IPCC defaults and provide justification of PP has not provided any such comparison. **The finding is therefore still open.** 3) The VVB confirms that as per the Indian Forest conservation Act, 1927, Section 26, activities such as lumbering, grazing and hunting are prohibited within the Reserved forests hence entire reserved forest is considered as inaccessible (Pforest,i). However, Indian Forest Act 1927 chapter III, Section 32, which includes amongst other things that the government may make rules to regulate (a)the cutting, sawing, conversion and removal of trees and timber, and the collection, manufacture and removal of forest-produce, from protected forests;(b)the granting of licenses to the inhabitants of towns and villages in the vicinity of protected forests to take trees, timber or other forest-produce for their own use, and the	

[4] Rajashekar, G., Fararoda, R., Reddy, R. S., Jha, C. S., Ganeshaiah, K. N., Singh, J. S., & Dadhwal, V. K. (2018). Spatial distribution of forest biomass carbon (Above and below ground) in Indian forests. Ecological Indicators, 85, 742–752. doi:10.1016/j.ecolind.2017.11.024

		production and return of such licenses by such persons. It is therefore unclear how the VVB verified that such regulations do not exist in the project area. **The finding is therefore still open.** 4) VVB found that the MAI value for other land areas is unavailable for India. Thus, the MAI value for forest areas, available for India in m3/ha/yr unit used by project developer in line with Tool 30 provisions. However, besides the justification provided by the project proponent, the VVB does not mention any other sources that were looked into to conclude the approach taken for this data parameter. **Therefore, this finding is still open.** <u>Action required</u> 1) The VVB must ensure that the data sources for MAI are in line with the data requirements of the applied Tool 30. 2) The VVB must justify why protected forests cannot be considered as potential sources of timber and firewood supply. 3) The VVB must provide other data sources checked to conclude on the approach taken for determining MAI for other lands besides those provided by the project proponent 4) The VVB must ensure that the project proponent checks and corrects related discrepancies if any in the fNRB calculation sheet for other states considered in the project. <u>VVB Response:</u> 1.) VVB would like to present response pertaiing to MAI source in pointwise manner as below: **a) Clarification on Cited Information:** (i) VVB has checked and confirmed that the information cited using 1997 FAO document is, "The net annual increment of growing stock from all sources (public and private) was assessed to be 127 million cubic meters in 1994, and the actual production was estimated to be 294 million cubic meters," which pertains to a general assessment and not specifically to the MAI value used. Rather in the same paragraph, the report mentions that. "*The mean annual increment (MAI) of India's forests is meagre of **0.5 m3/hectare/year** compared to the world average of about 2.1 m3/ha/year*". b) **Compliance with TOOL 30 Requirements**: (i) VVB has checked and confirmed that As per Table 5 of TOOL 30, the "Source of data" option (d) is utilized, i.e., "National studies or government data or official statistics." The data reported in the document used is from after the year 2015 (Please see the screenshot of the INTRODUCTION section of the same project report as given below). Which is in line with the requirement of the tool para 10 of the tool 30 which its thus meeting the requirement that "the vintage of the above data shall not be before the year 2000."	

		 Presently according to the 14th assessment report of the Forest Survey of India (FSI report, 2015) forest cover of the country is 70.17 million ha, which is 21.34 percentage of the geographical area of the country. The tree cover of the country was estimated to be 9.26 million ha (2.82 percentage of the geographical area of the country). Due to the tree plantations outside the conventional forest area, a net increase in growing stock was achieved up to 110.34 million m^3 as compared to the 13th FSI report in 2013. The productivity if Indian forests are below average, as comparing with the average productivity of world forests. The mean annual increment (MAI) of India's forests is meagre of 0.5 m^3/hectare/year compared to the world average of about 2.1 m^3/ha/year. In Indian tropical moist deciduous and dry deciduous forests, sal and teak have a forest cover area about 60 percent of total forest area. In such areas, the MAI is much higher than the average. An assessment of the increment inthe natural forests of India was made by the FSI in 1995 which indicated an Annual AllowableCut (AAC) of over 87 million m3. The net annual increment of growing stock from all sources(public and private) was assessed to be 127 million m^3 in 1994 and the actual production wasestimated to be 294 million m^3 (FAO, 1997). (ii) With reference to QA/QC procedure in line with Table 5 of TOOL 30, VVB has at length discussed and noted that a comparison of values with FAO and IPCC defaults was attempted, but the following observations were made: ○ The Global Forest Resources Assessment 2000 by FAO (Table 14[5]) lists only the percentage distribution of forest types by country and does not provide sufficient data for effective conclusions about MAI, making it unsuitable for comparison. ○ The MAI values listed for above-ground biomass growth rates in the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories[6] (Above-ground biomass growth rates for different ecological zones) pertain to the Asia region as a whole, rather than specifically to India. Hence, a direct comparison with Indian government data	

5 FAO Global Forest Resources Assessment 2000 by the FAO for "Distribution of total forest area by ecological zone" (Table 14)

6 https://www.ipcc-nggip.iges.or.jp/public/2019rf/pdf/4_Volume4/19R_V4_Ch04_Forest%20Land.pdf

was not possible.

c) **Confirmation with Recently Registered Project Activity:** VVB has checked another registered project with VCS noted that following registered projects have also considered same MAI_{forest} value, affirming the consistency and reliability of PP's data source.A screen shot from VCS 2983 ER sheet[7] is shown for your reference.:

Data	Parameter	Units	Value	Source
Mean Annual Increment of woody biomass growth per hectare in sub category i of forest areas in the relevant period	$MAI_{forest,i}$	cum/ha/yr	0.5	As per Asia-Pacific Forestry Sector Outlook Study II, India Outlook Study 2020, Ministry of Environment and Forest, Govt of India, Pg no. 16 https://moef.gov.in/wp-content/uploads/2019/06/Pacific.pdf

In conclusion, the data sources used by PP for MAI are in full compliance with the data requirements of the applied TOOL 30.

2) Regarding the classification of protected forests as inaccessible for the supply of wood and timber, VVB would like to present the following information:

a) **Data Source and Classification:**
The data source used[8] for calculating the value of Pforest,i bifurcates the total forest cover into three categories: Very Dense Forest (VDF), Moderately Dense Forest (MDF), and Open Forest (OF). While calculating Pforest,i, PP has conservatively considered the Open Forest Area in both Reserve Forests and Protected Forests as accessible. This is despite the previous establishment that the entire Reserve Forest Area is completely inaccessible and hence accepted.

b) **Wood Extraction Permissions:**
Chapter III, Section 32 of the Indian Forest Act, 1927, permits granting licenses to local inhabitants for extracting trees, timber, or other forest produce for personal use from protected forests. However, these activities are highly regulated and typically restricted to the peripheral areas of the forest.

VVB based on regional expertise confirmed that interior parts of protected forests are often characterized by difficult terrain and dense vegetation, making them less accessible to the general population. Additionally, there is a significant risk of attacks by wild animals in these regions. Consequently, local inhabitants generally prefer collecting forest produce from the more accessible peripheral areas.

7 https://registry.verra.org/mymodule/ProjectDoc/Project_ViewFile.asp?FileID=105897&IDKEY=slksjoiuwqowrnoiuomnckjashoufifmln902309ksdflku098w146031963

8 chapter-13.pdf (fsi.nic.in), Refer: page 283

		However, as demonstrated below, PP has considered both the approaches and applied conservative value of fNRB and hence acceptable. **c) Alternative Calculation Approach:** Despite the conservative approach mentioned above, PP has recalculated the Pforest,i value considering the entire Reserve Forest as inaccessible and the Protected Forest as completely accessible to address the registry's concern. This led to a higher value of Pforest,i and fNRB except Bihar, Chhattisgarh, Jharkhand and Odisha. **(i) Bihar:** **Data Used:** Recorded Forest Area: 744,200 ha Reserved Forest: 69,300 ha Protected Forest: 618,300ha **Percentages:** % of Recorded Forest Area under Reserved Forest: 9.31% % of Recorded Forest Area under Protected Forest: 83.08% Total Forest Cover (Fforest,i): 483,100 ha Area under open forest: 206,000 ha **Original Calculation:** Considering non-Accessible Area (VDF and MDF) for both Reserved Forest and Protected Forest: Pforest,i = (Total Forest Cover - Area under open forest) * (% of Recorded Forest Area under Reserved Forest + % of Recorded Forest Area under Protected Forest) Pforest,i = (483,100 - 206,000) * (9.31%+ 83.08%) = 2,56,025.2 ha RB = 0.25 million tonnes NRB = 11.89 million tonnes fNRB = 97.93% **Calculation with considering protected forest as zero:** Considering only Reserved Forest (VDF, MDF, and OF) and taking Protected Forest as Zero: Pforest,i = (Total Forest Cover * % of Recorded Forest Area under Reserved Forest) + (0 * Total Forest Cover) Pforest,i = (483,100 * 9.31%) + (0 * 483,100) = 325,207 ha RB = 0.33 million tonnes NRB = 11.81 million tonnes fNRB = 97.32%	

		Conclusion: According to the comment, PP has considered Reserved Forest (VDF, MDF, and OF) as completely inaccessible and Protected Forest as completely accessible (i.e., zero value) when calculating the P_{forest} value. This resulted in a lower P_{forest} value compared to the existing P_{forest} value calculated by PP, which considered only non-accessible areas (VDF and MDF) for both Reserved Forest and Protected Forest. To ensure conservativeness, PP has updated and recalculated the fNRB value to 97.32% and hence accpetable to VVB. Revised fNRB workbook – worksheet (Renewable biomass) now provides comparison of the values for $P_{forest,i}$ with both of the above calculations and minimal value of the same is chosen for further calculation. Corresponding, changes incorporated to FVR section 3.4.6. (ii) **Chattisgarh**: **Data Used:** Recorded Forest Area: 5,981,600ha Reserved Forest: 2,589,700 ha Protected Forest: 2,403,600 ha **Percentages:** % of Recorded Forest Area under Reserved Forest: 43.29% % of Recorded Forest Area under Protected Forest: 40.18% Total Forest Cover (Fforest,i): 4,246,700 ha Area under open forest: 1,063,100 ha **Original Calculation:** Considering non-Accessible Area (VDF and MDF) for both Reserved Forest and Protected Forest: Pforest,i = (Total Forest Cover - Area under open forest) * (% of Recorded Forest Area under Reserved Forest + % of Recorded Forest Area under Protected Forest) Pforest,i = (4,246,700 - 1,063,100) * (43.29%+ 40.18%) = 2,657,594.9 ha RB = 1.10 million tonnes NRB = 3.92 million tonnes fNRB = 78.01% **Calculation with considering protected forest as zero:** Considering only Reserved Forest (VDF, MDF, and OF) and taking Protected Forest as Zero: Pforest,i = (Total Forest Cover * % of Recorded Forest Area under Reserved Forest) + (0 * Total Forest	

		Cover) Pforest,i = (4,246,700 * 43.29%) + (0 * 4,246,700) = 18,38,584.8 ha RB = 1.39 million tonnes NRB = 3.63 million tonnes fNRB = 72.38% **Conclusion:** According to the comment, PP has considered Reserved Forest (VDF, MDF, and OF) as completely inaccessible and Protected Forest as completely accessible (i.e., zero value) when calculating the P_{forest} value. This resulted in a lower P_{forest} value compared to the existing P_{forest} value calculated by PP, which considered non-accessible areas (VDF and MDF) for both Reserved Forest and Protected Forest. To ensure conservativeness, PP has updated and recalculated the fNRB value to 72.38% and and hence accpetable to VVB. Revised fNRB workbook – worksheet (Renewable biomass) now provides comparison of the values for $P_{forest,i}$ with both of the above calculations and minimal value of the same is chosen for further calculation. Corresponding, changes incorporated to FVR section 3.4.6 (iii) **D&NH**: **Data Used:** Recorded Forest Area: 21,400 ha Reserved Forest: 203,00 ha Protected Forest: 500 ha **Percentages:** % of Recorded Forest Area under Reserved Forest: 94.86% % of Recorded Forest Area under Protected Forest: 2.34% Total Forest Cover (Fforest,i): 16,002 ha Area under open forest: 9,064 ha **Original Calculation:** Considering non-Accessible Area (VDF and MDF) for both Reserved Forest and Protected Forest: Pforest,i = (Total Forest Cover - Area under open forest) * (% of Recorded Forest Area under Reserved Forest + % of Recorded Forest Area under Protected Forest) Pforest,i = (16,002 - 9,064) * (94.86% + 2.34%) = 6,743.5 ha	

		RB = 0.01 million tonnes NRB = 0.05 million tonnes fNRB = 89.62% **Calculation with considering protected forest as zero:** Considering only Reserved Forest (VDF, MDF, and OF) and taking Protected Forest as Zero: Pforest,i = (Total Forest Cover * % of Recorded Forest Area under Reserved Forest) + (0 * Total Forest Cover) Pforest,i = (16,002 * 94.86%) + (0 * 16,002) = 15,179.5 ha RB = 0.003 million tonnes NRB = 0.06 million tonnes fNRB = 94.79% **Conclusion:** According to the comment, PP has considered Reserved Forest (VDF, MDF, and OF) as completely inaccessible and Protected Forest as completely accessible (i.e., zero value) when calculating the P_{forest} value. This resulted in a higher P_{forest} value compared to the existing P_{forest} value calculated by PP, which considered non-accessible areas (VDF and MDF) for both Reserved Forest and Protected Forest. Thus, VVB noted that with the approach selected by PP i.e. consideration of inaccessible part of the total forest cover while calculating the Pforest,i value as this will yield lower fNRB value. This approach ensures that PP's calculations remain robust and aligned with the requirements of the TOOL 30 and hence accpetable to VVB. (iv) **Gujarat**: **Data Used:** Recorded Forest Area: 2,187,000 ha Reserved Forest: 1,457,400 ha Protected Forest: 289,800 ha **Percentages:** % of Recorded Forest Area under Reserved Forest: 66.64% % of Recorded Forest Area under Protected Forest: 13.25% Total Forest Cover (Fforest,i): 983,500 ha Area under open forest: 546,300 ha **Original Calculation:**	

		Considering non-Accessible Area (VDF and MDF) for both Reserved Forest and Protected Forest: Pforest,i = (Total Forest Cover - Area under open forest) * (% of Recorded Forest Area under Reserved Forest + % of Recorded Forest Area under Protected Forest) Pforest,i = (983,500 - 546,300) * (66.64% + 13.25%) = 3,49,280.2 ha RB = 0.53 million tonnes NRB = 10.52 million tonnes fNRB = 95.24% **Calculation with considering protected forest as zero:** Considering only Reserved Forest (VDF, MDF, and OF) and taking Protected Forest as Zero: Pforest,i = (Total Forest Cover * % of Recorded Forest Area under Reserved Forest) + (0 * Total Forest Cover) Pforest,i = (983,500 * 66.64%) + (0 * 983,500) = 6,55,396.8 ha RB = 0.43 million tonnes NRB = 10.61 million tonnes fNRB = 96.08% **Conclusion:** According to the comment, PP has considered Reserved Forest (VDF, MDF, and OF) as completely inaccessible and Protected Forest as completely accessible (i.e., zero value) when calculating the P_{forest} value. This resulted in a higher P_{forest} value compared to the existing P_{forest} value calculated by PP, which considered non-accessible areas (VDF and MDF) for both Reserved Forest and Protected Forest. Thus, VVB noted that with the approach selected by PP i.e. consideration of inaccessible part of the total forest cover while calculating the Pforest,i value as this will yield lower fNRB value. This approach ensures that PP's calculations remain robust and aligned with the requirements of the TOOL 30 and and hence accpetable to VVB. (v) **Jharkhand**: **Data Used:** Recorded Forest Area: 2,511,800ha Reserved Forest: 450,000 ha Protected Forest: 1,892,200 ha **Percentages:**	

		% of Recorded Forest Area under Reserved Forest: 17.92% % of Recorded Forest Area under Protected Forest: 75.33% Total Forest Cover (Fforest,i): 1,228,200 ha Area under open forest: 568,200 ha **Original Calculation:** Considering non-Accessible Area (VDF and MDF) for both Reserved Forest and Protected Forest: Pforest,i = (Total Forest Cover - Area under open forest) * (% of Recorded Forest Area under Reserved Forest + % of Recorded Forest Area under Protected Forest) Pforest,i = (1,228,200 - 568,200) * (17.92%+ 75.33%) = 6,15,435.9 ha RB = 0.64 million tonnes NRB = 4.49 million tonnes fNRB = 87.47% **Calculation with considering protected forest as zero:** Considering only Reserved Forest (VDF, MDF, and OF) and taking Protected Forest as Zero: Pforest,i = (Total Forest Cover * % of Recorded Forest Area under Reserved Forest) + (0 * Total Forest Cover) Pforest,i = (1,228,200 * 17.92%) + (0 * 1,228,200) = 2,20,037.4 ha RB = 0.78 million tonnes NRB = 4.34 million tonnes fNRB = 84.70% **Conclusion:** According to the comment, PP has considered Reserved Forest (VDF, MDF, and OF) as completely inaccessible and Protected Forest as completely accessible (i.e., zero value) when calculating the P_{forest} value. This resulted in a lower P_{forest} value compared to the existing P_{forest} value calculated by PP, which considered non-accessible areas (VDF and MDF) for both Reserved Forest and Protected Forest. To ensure conservativeness, PP has updated and recalculated the fNRB value to 84.70% and hence acceptable to VVB. Revised fNRB workbook – worksheet (Renewable biomass) now provides comparison of the values for $P_{forest,i}$ with both of the above calculations and minimal value of the same is chosen for further calculation. Corresponding, changes incorporated to FVR section 3.4.6	

		(vi) **Maharastra**: **Data Used:** Recorded Forest Area: 6,195,200 ha Reserved Forest: 5,086,500 ha Protected Forest: 643,300 ha **Percentages:** % of Recorded Forest Area under Reserved Forest: 82.10% % of Recorded Forest Area under Protected Forest: 10.38% Total Forest Cover (Fforest,i): 3,604,000 ha Area under open forest: 1,249,600 ha **Original Calculation:** Considering non-Accessible Area (VDF and MDF) for both Reserved Forest and Protected Forest: Pforest,i = (Total Forest Cover - Area under open forest) * (% of Recorded Forest Area under Reserved Forest + % of Recorded Forest Area under Protected Forest) Pforest,i = (3,604,000 - 1,249,600) * (82.10% + 10.38%) = 21,77,531.2 ha RB = 1.26 million tonnes NRB = 11.38 million tonnes fNRB = 90.05% **Calculation with considering protected forest as zero:** Considering only Reserved Forest (VDF, MDF, and OF) and taking Protected Forest as Zero: Pforest,i = (Total Forest Cover * % of Recorded Forest Area under Reserved Forest) + (0 * Total Forest Cover) Pforest,i = (3,604,000* 82.10%) + (0 * 3,604,000) = 2,959,024.1 ha RB = 1.00 million tonnes NRB = 11.64 million tonnes fNRB = 92.09% **Conclusion:** According to the comment, PP has considered Reserved Forest (VDF, MDF, and OF) as completely inaccessible and Protected Forest as completely accessible (i.e., zero value) when calculating the P_{forest} value. This resulted in a higher P_{forest} value compared to the existing P_{forest} value calculated by PP, which considered non-accessible areas (VDF and MDF) for both Reserved Forest and Protected Forest.	

		Thus, VVB noted that with the approach selected by PP i.e. consideration of inaccessible part of the total forest cover while calculating the Pforest,i value as this will yield lower fNRB value. This approach ensures that PP's calculations remain robust and aligned with the requirements of the TOOL 30 and hence accpetable to VVB (vii) **Odisha**: **Data Used:** Recorded Forest Area: 6,120,400ha Reserved Forest: 3,604,900 ha Protected Forest: 2,513,300 ha **Percentages:** % of Recorded Forest Area under Reserved Forest: 58.90% % of Recorded Forest Area under Protected Forest: 41.06% Total Forest Cover (Fforest,i): 3,268,600 ha Area under open forest: 1,240,100 ha **Original Calculation:** Considering non-Accessible Area (VDF and MDF) for both Reserved Forest and Protected Forest: Pforest,i = (Total Forest Cover - Area under open forest) * (% of Recorded Forest Area under Reserved Forest + % of Recorded Forest Area under Protected Forest) Pforest,i = (3,268,600 - 1,240,100) * (58.90% + 41.06%) = 2,027,770.8 ha RB = 1.20 million tonnes NRB = 8.08 million tonnes fNRB = 87.02% **Calculation with considering protected forest as zero:** Considering only Reserved Forest (VDF, MDF, and OF) and taking Protected Forest as Zero: Pforest,i = (Total Forest Cover * % of Recorded Forest Area under Reserved Forest) + (0 * Total Forest Cover) Pforest,i = (3,268,600 * 58.90%) + (0 * 3,268,600) = 19,25,197.1 ha RB = 1.5 million tonnes NRB = 8.04 million tonnes fNRB = 86.58% **Conclusion:** According to the comment, PP has considered Reserved Forest (VDF, MDF, and OF) as completely	

		inaccessible and Protected Forest as completely accessible (i.e., zero value) when calculating the P_{forest} value. This resulted in a lower P_{forest} value compared to the existing P_{forest} value calculated by PP, which considered non-accessible areas (VDF and MDF) for both Reserved Forest and Protected Forest To ensure conservativeness, PP has updated and recalculated the fNRB value to 86.58% and hence acceptabel to VVB. Revised fNRB workbook – worksheet (Renewable biomass) now provides comparison of the values for $P_{forest,i}$ with both of the above calculations and minimal value of the same is chosen for further calculation. Corresponding, changes incorporated to FVR section 3.4.6 (viii) **Rajasthan**: **Data Used:** Recorded Forest Area: 3,286,300ha Reserved Forest: 1,217,600 ha Protected Forest: 1,854,300 ha **Percentages:** % of Recorded Forest Area under Reserved Forest: 37.05% % of Recorded Forest Area under Protected Forest: 56.43% Total Forest Cover (Fforest,i): 1,256,000 ha Area under open forest: 848,700 ha **Original Calculation:** Considering non-Accessible Area (VDF and MDF) for both Reserved Forest and Protected Forest: Pforest,i = (Total Forest Cover - Area under open forest) * (% of Recorded Forest Area under Reserved Forest + % of Recorded Forest Area under Protected Forest) Pforest,i = (1,256,000 - 848,700) * (37.05% + 56.43%) = 3,80,727.5 ha RB = 0.75 million tonnes NRB = 18.72 million tonnes fNRB = 96.14% **Calculation with considering protected forest as zero:** Considering only Reserved Forest (VDF, MDF, and OF) and taking Protected Forest as Zero: Pforest,i = (Total Forest Cover * % of Recorded Forest Area under Reserved Forest) + (0 * Total Forest Cover) Pforest,i = (1,256,000 * 37.05%) + (0 * 1,256,000) = 465,357.9 ha	

		RB = 0.72 million tonnes NRB = 18.75 million tonnes fNRB = 96.29% **Conclusion:** According to the comment, PP has considered Reserved Forest (VDF, MDF, and OF) as completely inaccessible and Protected Forest as completely accessible (i.e., zero value) when calculating the P_{forest} value. This resulted in a higher P_{forest} value compared to the existing P_{forest} value calculated by PP, which considered non-accessible areas (VDF and MDF) for both Reserved Forest and Protected Forest. Thus, VVB noted that with the approach selected by PP i.e. consideration of inaccessible part of the total forest cover while calculating the Pforest,i value as this will yield lower fNRB value. This approach ensures that PP's calculations remain robust and aligned with the requirements of the TOOL 30 and hence accpetable to VVB. (ix) **Uttar Pradesh**: **Data Used:** Recorded Forest Area: 1,738,400 ha Reserved Forest: 1156,000 ha Protected Forest: 29,600 ha **Percentages:** % of Recorded Forest Area under Reserved Forest: 66.50% % of Recorded Forest Area under Protected Forest: 1.70% Total Forest Cover (Fforest,i): 914,300 ha Area under open forest: 367,800 ha **Original Calculation:** Considering non-Accessible Area (VDF and MDF) for both Reserved Forest and Protected Forest: Pforest,i = (Total Forest Cover - Area under open forest) * (% of Recorded Forest Area under Reserved Forest + % of Recorded Forest Area under Protected Forest) Pforest,i = (914,300- 367,800) * (66.50% + 1.70%) = 3,72,716.5 ha RB = 0.57 million tonnes NRB = 21.64 million tonnes fNRB = 97.42%	

<u>Calculation with considering protected forest as zero:</u>

Considering only Reserved Forest (VDF, MDF, and OF) and taking Protected Forest as Zero:

Pforest,i = (Total Forest Cover * % of Recorded Forest Area under Reserved Forest) + (0 * Total Forest Cover)

Pforest,i = (914,300* 66.50%) + (0 * 914,300) = 6,07,990.6 ha

RB = 0.50 million tonnes

NRB = 21.71 million tonnes

fNRB = 97.76%

Conclusion:

According to the commen PP has considered Reserved Forest (VDF, MDF, and OF) as completely inaccessible and Protected Forest as completely accessible (i.e., zero value) when calculating the P_{forest} value. This resulted in a higher P_{forest} value compared to the existing P_{forest} value calculated by PP, which considered non-accessible areas (VDF and MDF) for both Reserved Forest and Protected Forest.

Thus, VVB noted that with the approach selected by PP i.e. consideration of inaccessible part of the total forest cover while calculating the Pforest,i value as this will yield lower fNRB value. This approach ensures that PP's calculations remain robust and aligned with the requirements of the TOOL 30 and hence acceptabel to VVB.

To ensure consistency and conservativeness, the PP, as in the second PRR round, compared the calculated fNRB values for all 9 states with those from another registered VCS project. Finally, the PP chose the most conservative fNRB values for each state. These final, conservative values are presented below:

State	Recalculated in PRR Round 2	Recalculated in PRR Round 3	fNRB values from VCS 2942	Conservative fNRB taken for ER calculations
Dadra NH	89.62%	89.62%	-	89.62%
Jharkhand	87.47%	84.70%	-	**84.70%**
UP	97.42%	97.42%	-	97.42%
Bihar	97.93%	97.32%	95.85%	95.85%
Chhattisgarh	78.01%	72.38%	67.30%	67.30%
Gujarat	95.24%	95.24%	92.31%	92.31%
Maharashtra	90.05%	90.05%	90.38%	90.05%
Odissa	87.02%	86.58%	-	**86.58%**
Rajasthan	96.14%	96.14%	91.38%	91.38%

		After comparision PP has revised the fNRB value of Jharkhand and odissa (as PP has already adopted the most conservative fNRB values for Bihar (95.85%) , Chhatisgarh (67.30%), Gujrat (92.31%) & Rajasthan (91.38%) in the PRR round 2). Same has been incorporated in Revised PD&MR, Estimated ER sheet and Actual ER sheet. Further, submitted FnRB spreadsheets verified and found acceptabe to VVB. 3) Below is the PP's detailed response against the concerns raised by registry regarding the determination of MAI for other lands: **a) Use of MAI Values for Other Land Areas:** In line with Table 5 of TOOL 30, it is specified that "if the MAI value for other land areas is not available in a country while only the MAI value for forest areas exists, the MAI value for forest areas may be used as the MAI value for other land areas." For India, MAI value for other land areas is not available, hence PP has considered the same MAI value for both $MAI_{forest,i}$ and $MAI_{other,I}$ as 0.5 $m^3/ha/yr$. **b) QA/QC Procedure and Comparison with FAO and IPCC Defaults:** As part of the QA/QC procedure in line with Table 5 of TOOL 30, a comparison of MAI values was attempted with FAO and IPCC defaults. The following observations were made: • The Global Forest Resources Assessment 2000 by FAO (Table 14) provides only the percentage distribution of forest types by country and does not offer sufficient data for effective conclusions about MAI, rendering it unsuitable for comparison. • The MAI values listed for above-ground biomass growth rates in the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories pertain to the Asia region as a whole and are not specific to India. Therefore, a direct comparison with Indian government data was not feasible. **Conclusion**: Based on the above points, ased on the above points, VVB concluded that the approach taken for determining MAI for other lands by the project proponent is in line with the requirements of TOOL 30. The use of the same MAI value for both forest and other land areas is justified due to the unavailability of specific MAI data for other land areas in India, and the methodology is supported by the precedent set in other recently registered projects. 4.) The project proponent has revised the fNRB values for Bihar, Jharkhand, Chhattisgarh, and Odisha in accordance with the updated VCS joint PD & MR. These revisions were reviewed and verified by VVB, who confirmed their acceptability with submitted fNRB spreadsheets. Additionally, corresponding adjustments have been made by VVB under the updated FVR.	

		Verra response 1) The VVB has clarified how the MAI value used meets the requirement of Tool 30. The document used refers to the MAI value of FAO document 1997 to triangulate the reported MAI value, however these are not the values used in the calculated. The value of 0.5 that is quoted by the document is used. This document is published after 2000, which meets Tool 30 data sources requirements. The VVB has checked registered project with VCS and noted that following registered project has also considered same MAI_{forest} value (0.5 m^3/ha/yr)., affirming the consistency and reliability of PP's data source. **This finding cannot be closed** **2)** The VVB has justified why protected areas are considered inaccessible areas, including how accessible forest is defined, and the regulation of permits. The recalculation Considering non-Accessible Area (VDF and MDF) for both Reserved Forest and Protected Forest: vs Considering only Reserved Forest (VDF, MDF, and OF) and taking Protected Forest as Zero: indicates that the former is more conservative. The comparison of Pforest has been done for all states included in this project and an updated fNRB which is more conservative has been considered. **This finding is now closed, and no further response is required.** **3)** The VVB has provided data sources checked to conclude on the approach taken for determining MAI for other lands besides those provided by the project proponent, including FAO and IPCCC. **This finding is now closed, and no further response is required.** **Additional round** **Issue** Low MAI Value- The supporting document submitted for MAI value of 0.5 m3/ha/yr, mentions that "In Indian tropical moist deciduous and dry deciduous forests, sal and teak have a forest cover area about 60 percent of total forest area. In such areas, the MAI is much higher than the average". Therefore, it can be concluded from this report that MAI of 0.5m3/ha/yr is not the accurate assessment of MAI of Indian Forest falling under tropical moist deciduous and dry deciduous ecological zones. The project proponent has considered MAI of 0.5 m3/ha/yr for all the geographic regions included under the present project activity without classifying them on the basis of ecological zones, in particular if any of the regions consists of tropical moist deciduous and dry deciduous forest types resulting in higher MAI values. **Action required** 1. VVB must justify its assessment of accuracy of MAI of 0.5m3/ha/yr with respect to each of the geographic boundary included under the grouped project, specifically in light of the information presented on tropical moist deciduous and dry deciduous ecological zones. 2. Also, the VVB must explain how it assessed this value to be conservative when other documents (IPCC; SINGHAL, R. & KUMAR, SUDHIR & JEEVA, V. (2003). Forests and forestry research in India. 44) suggest a higher MAI value for Indian forests. **VVB response**	

		1. VVB and project proponent acknowledges that the composition of forest types across the states in India is not uniform as there would be some states with more deciduous forest and some with less. However, the information on local/state specific MAI values are not available in the public domain. Therefore, in absence of local/state level information, the project proponent has gone ahead with the country level MAI value which is available at multiple public sources VVB accepts that the sourced document i.e. a research project report on "*Developing Yield Table for few tree Species grown in Farm setting*" prepared by the research team headed by Dr. A. Balasubramanian, Ph.D. Professor and Head (Forestry) Department of Silviculture Forest College and Research Institute Tamil Nadu Agricultural University[9] mentions that mentions that MAI value for deciduous forests are higher than the average value. However, regarding MAI values of deciduous forest (both moist deciduous and dry deciduous) , this may please be noted that presence of more deciduous forest in a particular region may not necessarily bring a higher MAI value. This was cross checked against another research paper published by Indian Council of Forestry Research and Education (ICFRE)[10] (the same journal recommended by Verra under "action required" for comparison) referred a study which has suggested to consider the MAI value of 0.5 m3/ha/yr for the moist deciduous forest. A screenshot of the report (page 56) is provided below. A recent study in Kerala has estimated the current average increments, in the natural evergreen and moist deciduous forests as 1.0 and 0.5 m^3 ha^{-1} yr^{-1} respectively. Yet another report suggests that the average productivity of Sal forests of India is at the level of 54.7 million m^3 ha^{-1}. In fact figures are often quoted which would give Indian forest an annual productivity of 0.5 m^3 ha^{-1}. If theoretical potential productivity could be achieved, this would increase to about 525 million $m^3ha^{-1}yr^{-1}$. Furthermore, even though the Indian forest has a higher concentration of deciduous plants, as per the country report on the state of the world's forest genetic resources for India published by Food and	

[9] https://tnau.ac.in/site/college-fcri-mettupalayam/department-of-snrm-hods-desk/

[10] https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=81d8b0a4a405f957ca0d943c74c5a60abbd4f384

Agriculture Organization of the United Nations (page 1)[11], the productivity of Indian forest is very less due to fire, grazing, overexploitation and non-recycling of biomass in forest soil. Another source[12] also suggests low productivity of Indian forest due to the below factors.

- Challenges in exploitation due to uneven distribution and inaccessibility;
- Uncontrolled felling without adequate regeneration through compensatory forestry;
- Insufficient transport and infrastructure facilities;
- Overutilization due to unregulated grazing;
- Forest depletion caused by fires;
- Inefficient and unscientific methods of felling, crafting, and seasoning;
- Unscientific economic activities, such as slash-and-burn agriculture, leading to the destruction of fragile forest covers on slopes;
- Dependence on static conservancy, relying on natural growth rather than regenerating through afforestation;
- Insufficient information on forest resources and inadequate research facilities;
- Degradation of forest covers due to industrial and irrigation projects, illegal felling, or 'poaching.'

Apart from the source used by the project proponent, below are the additional sources which mention the same value MAI for India i.e. 0.5 m^3/ha/yr very distinctly

Sr. No.	Published by	Title	Year of publication	Page no.
1	Food and Agriculture Organization of the United Nations (FAO)	Country Report on The State of Forest Genetic Resources https://www.fao.org/4/i3825e/i3825e32.pdf	2012	1 & 16

Thus, VVB noted that the value of MAI of 0.5 m^3/ha/yr is appropriately considered by PP as the value of MAI for each of the geographic boundary under the grouped project is not available and also, as discussed in the above based on the research paper i. e. (IPCC; SINGHAL, R. & KUMAR, SUDHIR & JEEVA, V. (2003). Forests and forestry

11 https://www.fao.org/4/i3825e/i3825e32.pdf

12 https://edukemy.com/blog/problems-of-indian-forestry-upsc-indian-geography-notes/#:~:text=ASSOCIATED%20WITH%20FORESTRY-,Inaccessibility%20of%20Forests%3A,national%20product%20compared%20to%20agriculture.

research in India. 44) referred by the registry for comparison of the MAI value, that value for MAI remains the same for deciduous forests.

2. This shall be noted that the document (IPCC; SINGHAL, R. & KUMAR, SUDHIR & JEEVA, V. (2003). Forests and forestry research in India. 44) referred by the registry for comparison of the MAI value does not suggest any higher value of MAI, rather it suggests the same MAI value, 0.5 m^3/ha/yr for the moist deciduous forest in India.

   The project proponent has also compared their Mean Annual Increment (MAI) value with that of the recently registered projects by Verra. Below is the list of projects which have considered same MAI value, 0.5 m^3/ha/yr.

S.I No.	Project Title	Registry/Ref no.	Weblink
1	Clean Cooking Access for Women in Rural Maharashtra	VERRA/ VCS 3151	https://registry.verra.org/app/projectDetail/VCS/3151 (refer ER sheet)
2	Distribution of high Efficient Cook Stoves	VERRA/ VCS 2983	https://registry.verra.org/app/projectDetail/VCS/2983 (refer ER sheet)

   Thus, it can be concluded that the value of MAI considered for the current project is comparable with other registered projects.

Verra Response

VVB and project proponent acknowledges that the composition of forest types across the states in India is not uniform however, in absence of local/state level information, the project proponent has used country level MAI value which is available at multiple public sources.

VVB has analysed the information on MAI in the the document (IPCC; SINGHAL, R. & KUMAR, SUDHIR & JEEVA, V. (2003). Forests and forestry research in India stating that it also states the MAI of 0.5t/ha/yr is recommended.

Other documents that use the same MAI both within and outside Verra are quoted including FAO that uses the same value in the “Country Report on The State of Forest Genetic Resources

		This finding is now closed, and no further response is required.	

5	Inconsistencies in the VCS joint PD/MR		
	Issue 1. The figure for the monitoring period vintage 2022 is missing in the comparison table under Section 7.4 of the VCS joint PD/MR. 2. It is indicated for Ny,monitoring report,j in Section 7.1 and throughout the VCS joint PD/MR that 398,897 instances were installed. The total breakdown in page 8 of the VCS joint VR/VR shows 340,341 total. **Action item** The VVB must ensure that the inconsistencies in the VCS joint PD/MR and VCS joint VR/VR are corrected. Program rule(s) *VCS Joint Project Description and Monitoring Report Template v4.2, sections 1.11 and 2.2*	**Round 1** VVB Response 1. Emission reduction for the monitoring period of vintage 2022 is now included in the comparison table under section 7.5 of MR. 2. The total breakdown in page 8 of the VCS joint VR/VR is correct i.e. 398,897. Verra Response This finding is now closed, and no further response is required.	closed

6	Clarification on unique identification of ICS		
	Issue 1. The review team has observed that serial number of ICS implemented under the current grouped project is similar to the identification used for ICS belonging to other grouped projects implemented by PP. It is not clear from the Joint PD&MR how PP will ensure that cross movement of stoves do not take place between different projects implemented by PP in the same region which is a possibility considering stove models are also same. 2. PP has not submitted ex-post calculation of emission reductions.	**Round 2** VVB Response 1. VVB would like to confirm that the alphanumeric code GHG-22(or 23)/L1 (or L2, L3) is generated by the manufacturing unit on a continuous basis and is not under the control of PP. Therefore, it is possible for this code to be found in other projects. However, the alphanumeric code, is followed by a unique numerical code, which constitutes a unique serial number. This unique numerical code distinguishes each stove and ensures its individual identification, regardless of the alphanumeric prefix.	Closed

	Action Item 1. The VVB must justify how it has validated that stoves belonging to this grouped project will not be moved to other projects implemented by PP in the same region and vice versa. 2. VVB must ensure that PP submits the es-post ER calculation sheet. **Program Rule(s)** *VCS Standard v4.4, Section 2.2.1*	Further, in addition to a unique serial number to each ICS, PP also maintainins a database of distributed ICS units of all project activities to prevent duplicate entries or double counting. Thus, the risk of potential interchange of stoves between different projects within the same region is avoided. Additionally, the PP's declaration confirms that instances included in the grouped project will not be used to claim credits under other GHG programs, thus avoiding any double counting.The PP's declaration Dated 27/03/2023 is being submitted along with the response. 2. The revised ex-post ER sheet by the PP is now being submitted aalong with the response. Verra Response The alphanumeric code GHG-22(or 23)/L1 (or L2, L3) is generated by the manufacturing unit on a continuous basis, followed by a unique numerical code which distinguishes each stove and ensures its individual identification, regardless of the alphanumeric prefix. The VVB has verified this during interviews with the project beneficiaries during the site visit, and confirms that the project proponent maintains a database of distributed ICS units to prevent duplicate entries. This finding cannot be closed **Round 3** Issue The project description mentions following: *"Every ICS distributed under the project activity will be provided with a label stating the unique serial number."* The unique serial number is assigned against a particular beneficiary name and geographical location. Also, the project proponent has claimed that each ICS with its reference number is assigned against a particular beneficiary and geographic location indicating its unique identification. There are a number of entries where both beneficiary name and location are found to be same.	

		Action required 1. The VVB must justify how it verified that each beneficiary received a single ICS. 2. VVB must explain how it verified compliance of such entries with the unique identification requirement. 3. The VVB must ensure that the project proponent submits an updated project database without duplicate entries. VVB Response With reference to raised obsrvations VVB incorporates following clarifications and updates to address the concerns raised regarding apparent duplicate entries in the project database: 1. Beneficiary Identification: During the scrutninization of database of ICSs distribution across different states, VVB acknowledges that some entries may appear similar at first glance. However, PP confirms that each entry represents a unique beneficiary. In rural Indian communities, it's common to find multiple individuals with identical names which has been carefully cross-checked with the details of each beneficiary against their respective End user Agreement to ensure accuracy. 2. PP has now revised the project database to eliminate all typographical error. Each entry now clearly represents a distinct beneficiary who has received a single improved cookstove (ICS). In order to ensure that each household received only one Improved Cookstove(ICS), PP implemented additional measures for verification. The updated database now includes unique geo-coordinates specific to each beneficiary's household, providing clear geographic information for each instance. Furthermore, VVB conducted cross-checks using sample government-approved ID cards and reviewed End User Agreements to confirm compliance, thereby substantiating that no household received more than one ICS. 3. Address Information: VVB observed that In many rural Indian villages, standardized addressing systems are not common. House numbers are often absent from official government IDs. Given this, PP has removed the House Number column from the updated database as it could not be consistently verified and was not adding value to	

beneficiary identification which is checked and found acceptable to the VVB

VVB noted that, PP has taken sufficient steps to guarantee the integrity of their data and to demonstrate clearly that each beneficiary received only one ICS. Further, PP's updated database now provides a more accurate and verifiable record of the project's implementation and hence accpetable to VVB.

Verra Response
An updated database has been submitted.

This finding cannot be closed.

Additional round
Issue
There are a number of entries in the database for which there is no conclusive evidence of them being uniquely identifiable. The end-user names and contact details are the same and the geo-coordinates also appear to be closely located. VVB has not explained adequately how it assessed such entries to be distinct from each other, the evidence it checked and if any other method was used for cross verification of same.

Sr. no	Registration number
1.	GHG-23/L1/0661709
2.	GHG-23/L1/0661223
3.	GHG-23/L1/0661913
4.	GHG-23/L1/0661245
5.	GHG-23/L1/0661939
6.	GHG-23/L1/0661394
7.	GHG-23/L1/0661630
8.	GHG-23/L1/0661664
9.	GHG-23/L1/0661819
10.	GHG-23/L1/0662217

Action Required
1. The VVB must provide an explanation on the process

		undertaken for evaluating validity of database. 2. As evidence of above, VVB must submit its assessment of unique identification of following project stoves along with the scanned copies of original registration form/stove distribution form for each. **VVB Response** 1. PP had submitted an updated project database that has been thoroughly reviewed, with corrections made where necessary, particularly focusing on clarifying the geographical locations of beneficiaries. To ensure accuracy and eliminate any potential confusion, especially in cases where beneficiaries share the same name or come from the same village or tehsil, the PP has also provided beneficiary agreements and Govt IDs on a random basis for cross-checking purposes. This step was taken to ensure the integrity of the data and to confirm the correct identification of each beneficiary. The beneficiary end user agreements and government IDs (aadhar cards) were cross checked against each other to confirm the beneficiary details such as name, address and were found matching and hence accepted. VVB based on host country experience can confirm that it is possible to have people with same first and last name within the same village. Further, in the host country, villages, even towns have houses which are very next to each other / on the same land parcel e. g. multiple families living (rented/self owned) on the same land parcel. in huts/rooms/other form of shelter. Hence, finding persons with same first and last name, having geographical co-ordinates very closely located is quite possible and is acceptable to the VVB. VVB had requested to submit beneficiary agreements along with government IDs (aadhar cards) on random basis for end users with same/similar names, same geo-coordinates and has confirm that the databased entries are correctly made based on these submitted documents. Further, VVB has checked and confirmed that contact details i, e, name and address mentioned for each stakeholder are different from each other as evident from the same mentioned in the beneficiary agreements. During on-site	

		visit, it was checked and confirmed that not all the end users have a telephone/mobile available thus same are not considered by PP which is acceptable. 2. As evidence for the above ICS list provided, the PP has submitted the asked end-user agreements and Govt IDs (Aadhar cards) for the project activity. Further, VVB's assessment of unique identification of project instances is mentioned in the above point i. e. through beneficiary agreements (original registration /stove distribution forms) and the government IDs for each one of them. The supportives are being submitted to VERRA. Verra response The VVB explained that it is possible to have people with same first and last name within the same village. The PP has provided the government IDs and the end user agreement to validate the users in the database with similar names. This finding is closed and no further action is required.	

7	Ex-post ERR calculation not submitted		
	<u>Issue</u> The ex-post ERR calculation has not been submitted for review <u>Action Item</u> The VVB must ensure that the project proponent submits the ex-post ERR calculation to the Verra Registry for review. <u>Program Rule(s)</u> *Registration and Issuance Process v4.4, Section 4.2.5*	**Round 2** <u>VVB Response</u> PP has revised the ex-post ER sheet and the same found correct. The revised ex-post ER sheet is being submitted with this response. <u>Verra Response</u> The revised ex-post ER sheet has been submitted. This finding is now closed, and no further response is required.	Closed