Bamboo Forest Management Plan

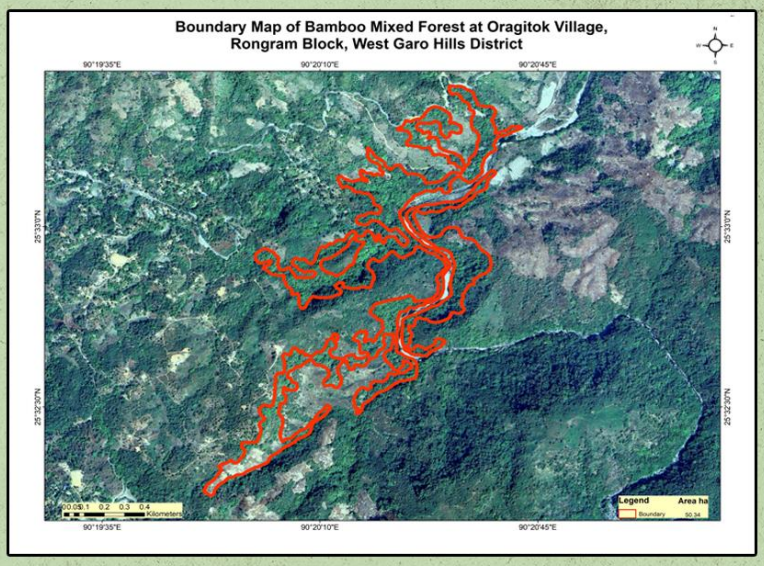
for

Oragitok Village

West Garo Hills District, Meghalaya

(in partial fulfillment of the application for FSC Forest Management Certification)





prepared by Oragitok BFMC with the assistance from

Centre of Excellence
for
Natural Resource Management & Sustainable Livelihoods

Meghalaya Basin Development Authority (MBDA)
Government of Meghalaya

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ABBREVIATIONS & ACRONYMS

BFMC	Bamboo Forest Management Committee
CoE (NRM&SL)	Centre of Excellence for Natural Resources Management And Sustainable Livelihoods
CF	Clump Forming
DFO	Divisional Forest Officer
FM	Forest Management
FSC	Forest Stewardship Council
GIS	Geographic Information System
GPS	Global Positioning System
ha	hectare
HCV	High Conservation Value
MBDA	Meghalaya Basin Management Agency
NCF	Non-Clump Forming
NTFP	Non-Timber Forest Product
PCCF	Principal Chief Conservator of Forests
PPS	Probability Proportional to Size
RFSS	Regional Forest Stewardship Standard
RMU	Resource Management Unit
SHG	Self-Help Groups
VBMC	Village Bamboo Management Committee
VCF	Village Community Facilitators
WP Act	Wildlife Protection Act

Bamboo Forest Management Plan for Oragitok, West Garo Hills, Meghalaya

1. Introduction

Oragitok is a small Garo village in eastern part of the West Garo Hills District, Meghalaya, with a close-knit community that depends largely on bamboo, farming, and small-scale forest resources for their livelihoods. The people of the village follow traditional customary practices under Village Council headed by the Nokma, which plays a central role in decision-making, resource management, and conflict resolution. The community values cooperation, sustainability, and cultural traditions, and women play an active role in households as well as in community groups such as Self-Help Groups (SHGs). Bamboo is especially important, not only as an economic resource but also for housing, farming practices and cultural activities.

1.1. Location Map

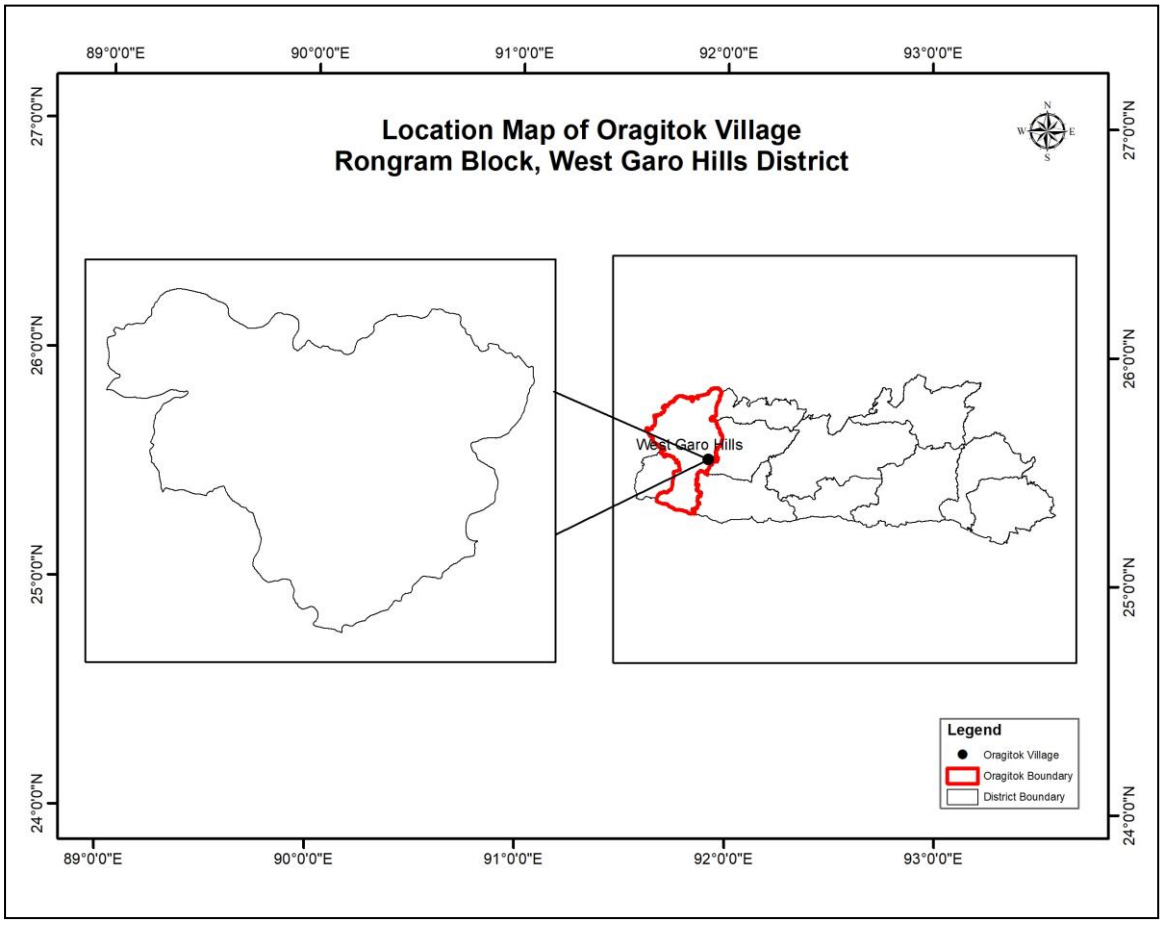


Figure 1: Location map of Oragitok village

1.2. Scope of Bamboo Forest Management Plan

This manual describes the management system for the Bamboo Forests under the Oragitok Village Council (Nokma), which adheres to the principles laid down under the RFSS standards of FSC (Annexure I).

The applicable standards upon which this management plan is based are -

- FSC-STD-30-005 V2-0 FM Groups Standard
- FSC-STD-IND-RAP-V1.0-2022_Small Holder_ Plantations EN_ The FSC Forest Stewardship Standard for Smallholders in India
- FSC-STD-50-001 V2-1 EN Requirements for use of the FSC trademarks

This manual is a controlled document, owned by the Oragitok Village Council.

1.3. Demography

The total population in Oragitok is 710. Out of this, 445 are males while the female count is 265. The female literacy rate in the village is 41.77%, whereas the male literacy rate is 48.50%. The overall literacy rate stands at 45.96%. Literacy plays an important role in the development of the village.

Table 1: Demography

Demography of Population	Number
Number of Female	265
Number of Male	445
Total Population	710
Total Number of Households	135

Literacy Category	Literacy percent (%)
Female Literacy Rate	41.77%
Male Literacy Rate	48.50%
Overall Literacy Rate	45.96%

Source: MegLIFE, Rongram Block

1.4. Tribes

The people of Oragitok belong to the Garo tribe, one of the major indigenous tribes of Meghalaya. The Garo community follows a matrilineal system, where family lineage and inheritance pass through the mother's line. Traditional governance is exercised through the Nokma head of Village Council, which manages community affairs, land resources including forest and conflict resolution. The tribe maintains a close relationship with nature, and bamboo plays an important role in their livelihood, culture, and daily life (Annexure II & III).

2. Forest cover in the village

The total geographical area of the village is 502.29 ha which comprise 179.82 ha of forest cover. The forest in the village supports diverse plant and animal life. The forest in the village has a patch of 50.34 ha which is rich in bamboo species. In addition to bamboo, the forest

contains a wide variety of indigenous tree species such as *Schima wallichii, Toona ciliata*, *Artocarpus heterophyllus, Gmelina arborea* and *Tetrameles nudiflora*. It further supports several wildlife species, including porcupine, jungle cats, squirrels, rabbits, monkey and civet cat. The village council has decided to apply for FSC Forest Management Certification for the bamboo forest with an extent of 50.34 ha. This combination of bamboo, trees and wildlife highlights the ecological richness and biodiversity value of the village forest.

There are pure patches of bamboo as well as bamboo occurs in interspersed manner along with other tree species. The bamboo species in the forest include species such as *Bambusa vulgaris, Bambusa jaintiana* and *Ochlandra scriptoria*.

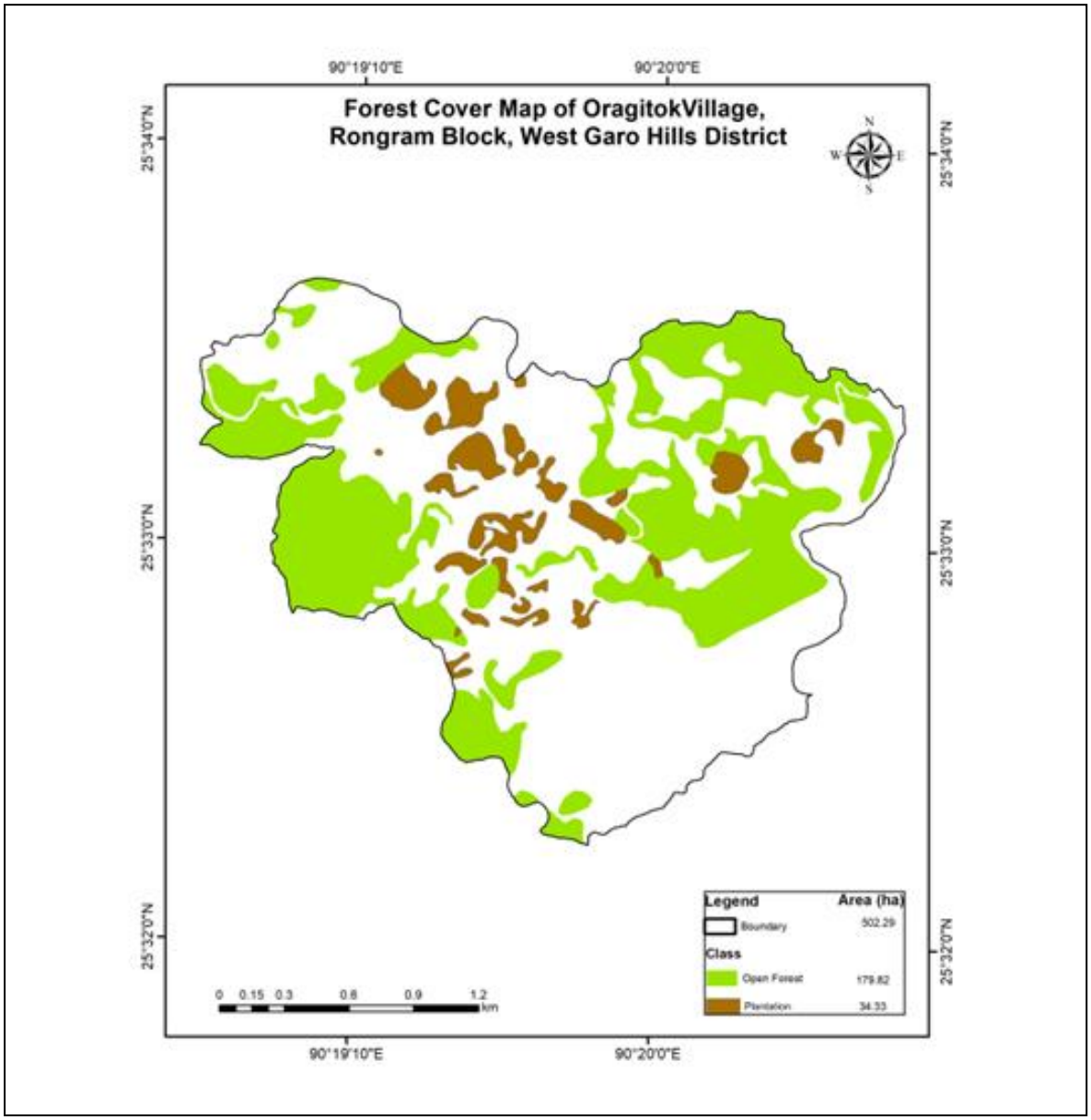


Figure 2: Forest cover map of Oragitok village

3. Bamboo Forest in Oragitok Village and it's management

3.1. Bamboo Resource Inventory

The bamboo inventory in Oragitok village was conducted to assess the available bamboo resources and inform sustainable harvesting plans. The process began with the identification of bamboo forest boundaries by Village Community Facilitators (VCFs), followed by the preparation of GIS-based maps. Using a stratified random sampling method and Probability Proportional to Size (PPS) approach, 30m x 30m sample plots were established across bamboo-dense areas. Trained VCFs collected data from these plots, including the number of clumps and culms, culm age and diameter, species identification, and green biomass measurements. Only mature culms (typically 3 - 4 years old) were considered for sustainable harvest estimates. The collected data was validated and analyzed by district and state-level teams to determine the sustainably harvestable yield and prepare a village-level bamboo resource inventory. This inventory forms the scientific basis for the management and harvesting guidelines outlined in the forest management plan (Annexure IV). This data will guide sustainable harvesting and ongoing management.

Table 2: Bamboo Resource Inventory Results

Sl. No.	Name of Bamboo Species	Estimated Number of Culms	Green Weight (in tonnes)	Dry Weight (in tonnes)
1	*Bambusa jaintiana*	38949	218	100
2	*Bambusa vulgaris*	58186	1967	747
3	*Ochlandra scriptoria*	3871	70	29
	Subtotal of CF (A)	**101005**	**2255**	**876**
5	*Melocanna baccifera*	20865	78	30
	Subtotal of NCF (B)	**20865**	**78**	**30**
	Total (A+B)	**121870**	**2333**	**907**

3.1.1. Clump density in the forest

Table 3: Clump density in the forest

1	Estimated number of clumps in the forest	3051
2	Number of clumps per ha	61
3	Average size of clumps (Sq. m)	20.26
4	Average spacing between the clumps (m)	12.85

As evident from the above tables the clump density per hectare is low (only 61 per ha).

Therefore, there is a scope for planting more bamboo seedlings in the inter clump spaces, for improving the stocking and overall yield. It is proposed that the number of clumps in the forest will be increased by 7017 in the next 3 years by planting approximately 2339 bamboo seedlings. Clump density after improved stocking will then rise to nearly 200 clumps per hectare.

3.1.2. Sustainably Harvestable Bamboo

Based on bamboo resource inventory data, the quantity of harvestable bamboo is estimated by considering the maturity of culms, the harvesting cycle and conservation factor taking into account uncertainty in the future yield. As given in the table above, the quantity of sustainably harvestable bamboo from the bamboo forest of Oragitok Village is 467 tonnes per year. Normally, 3 - 4 years old culms are selected for harvest to ensure sustainability and regeneration. Estimation of sustainably harvestable yield has been done taking harvesting cycle as 4 years. A conservation factor of 0.8 has also been used to make all allowance for unforeseen events like fire, damage due to storms etc.

Table 4: Sustainably harvestable yield

Current Harvestable yield (annually)	467 tonnes per year

As mentioned in the foregoing section, the existing clump density in the forest is much below the optimum density which the forest can support. Presently, the clump density is at 61 per ha. Considering various factors into account like cost, improved productivity from the forest, increased carbon sequestration resulting into the possibility of increased revenues from carbon credits. It has been proposed to increase the clump density to 200 clumps/ha in 3 years. The table below presents the increased yield after the improved stocking.

Table 5: Projected sustainable harvestable yield after the improved stocking

Harvestable Yield (Calculated after planting of 200 seedlings per ha to increase stocking)	1540 tonnes per year

3.1.3. Silvicultural System

The silvicultural system for bamboo in Oragitok follows a clump management approach focused on selective culm harvesting to promote healthy regeneration. Only mature culms (3–4 years old) are harvested, retaining younger ones to support growth. The horse-shoe method has been prescribed for the extraction of culms which also ensures regular cleaning of dead or congested culms and thus ensures clump vitality. This system enhances natural regeneration, improves yield, and supports long-term

sustainability aligned with the FSC standards.

3.1.4. Guidelines for Harvesting of Bamboo

Species such as *Bambusa vulgaris, Bambusa jaintiana* and *Ochlandra scriptoria* are monitored for density, and culm condition. Only 3 - 4 years old culms are harvested for sustainability.

(i) Harvesting must follow the "Horse-shoe" method, starting from the inner part of the clump and moving outward as depicted in Fig. 3.

(ii) Only mature culms (3 - 4 years old) should be harvested; younger culms and those under 4 cm in diameter should be retained.

(iii) Retain at least 6 culms per clump for regeneration, and avoid removing more than 50% of culms in one go.

(iv) Diseased or drying culms must be removed to prevent fire hazard.

(v) Culms must be cut low from the ground just above the first node (30 cm above ground) to avoid rot.

(vi) Cutting around the periphery is discouraged to prevent imbalance in clump growth.

(vii) Use sharp tools, and consider introducing thin-bladed saws for clean cuts.

(viii) Avoid harvesting during the rainy season to protect emerging shoots.

(ix) While harvesting the culms, the persons engaged in the task should use appropriate protective gears like helmet, thick rubber gloves, gumboots etc.

(x) Care should be taken while extracting culms in such a way that rhizome structure is not damaged.

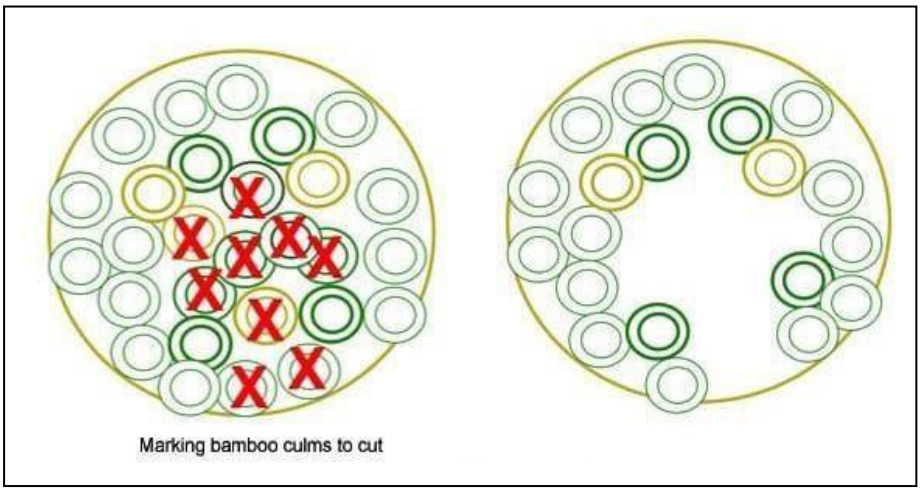


Figure 3: Horse-shoe system of harvesting

This method involves cutting select culms in a semi-circular pattern within the clump while retaining support culms on the periphery, ensuring structural balance and regeneration support (Annexure V).

3.1.5. Participatory Rural Appraisal (PRA) for Environmental Impact (EI)

Environmental Impact Assessment (EIA) was conducted in the village Oragitok between 17th July and 18thJuly 2026 following two methods:

i. Transect survey cum sample plots-based observation
ii. Participatory Rural Appraisal (PRA)

Environmental Impact Assessment based on the above two methods has revealed that shifting cultivation practice is the only potential cause of environmental damage in the village. Shifting cultivation is a traditional farming practice being followed by the tribal people in the village since ages. Around 50 households practice shifting cultivation covering around 250 ha. Previously, shifting cultivation in the village used to be practiced with long fallow cycle of 10-12 years. But with rise in population and fragmentation of families the rotation cycle of shifting cultivation has reduced 3-4 years. With the long fallow cycle shifting cultivation is not environmental degrading agriculture practice as it allows adequate time for the forest to regrow on the abundant agricultural land after 2-3 years of agricultural cultivation.

However, with the reduced cycle the jhum land becomes prone to soil erosion, loss of fertility, weed infestation, reduced water percolation. Thus, shifting cultivation is a potential problem of environmental degradation.

Guidelines for checking environmental degradation in Oragitok village

i. Environmental awareness campaign: The BFMC of the village has been advised to conduct environment awareness campaign 2-3 times in a year. In the campaign, the villagers are sensitized on environmental issues like forest fires, soil erosion, water conservation, climate change etc.
ii. The village practicing shifting cultivation are also persuaded to switch over to a settled form of agriculture, agroforestry and horticulture plantation.

iii. It has also been planned to onboard these community persons to adopt settled form of cultivation under Agroforestry models to the Agroforestry carbon initiative already landed in the State.

iv. Landslides: Landslide of low scale is observed in the area due to heavy rain. Because of factors such as felling of trees, forest fires, shifting cultivation and also due to development activities like road construction, dam construction, some hills

have become denuded and thus they are prone to landslides. Landslides not only lead to massive soil loss but they also create major disturbance in the ecology and socio-economic life of the people.

v. Soil erosion: There were reports of soil erosion in Oragitok village due to rain and uprooted trees. BFMC with the involvement of community may take the lead in treating if the area is affected by soil erosion. Measure for controlling soil erosion include contour trenching, gully plugging, bunding and planting native species known for soil binding properties. Planting of grasses like vetiver, lemon grass is also recommended.

vi. Forest fire: The BFMC members will ensure that the bamboo forest is well protected from forest fires. The community members will take due care especially in the fire season by patrolling and creating fire lines, removing inflammable dry biomass from the forest floor. Clearance of dry biomass on the periphery will be undertaken before the onset of the fire season, i.e. November and December. The BFMC will also create awareness in the whole village for taking all precautions to prevent forest fires.

Based on community discussions, each environmental issue was assessed and ranked according to its level of impact (High, Medium, Low, or None). This prioritization helped to identify the most significant environmental threats requiring management attention and resource allocation. Besides shifting cultivation practiced at a medium scale, landslides and soil erosion were at a low scale; the rest of the issues on forest fire, mining and quarrying, were absent.

Transect survey was done using diagonal line as shown in the following map (Figure 4). In these transect survey visual observation were taken 20m strip (either side).

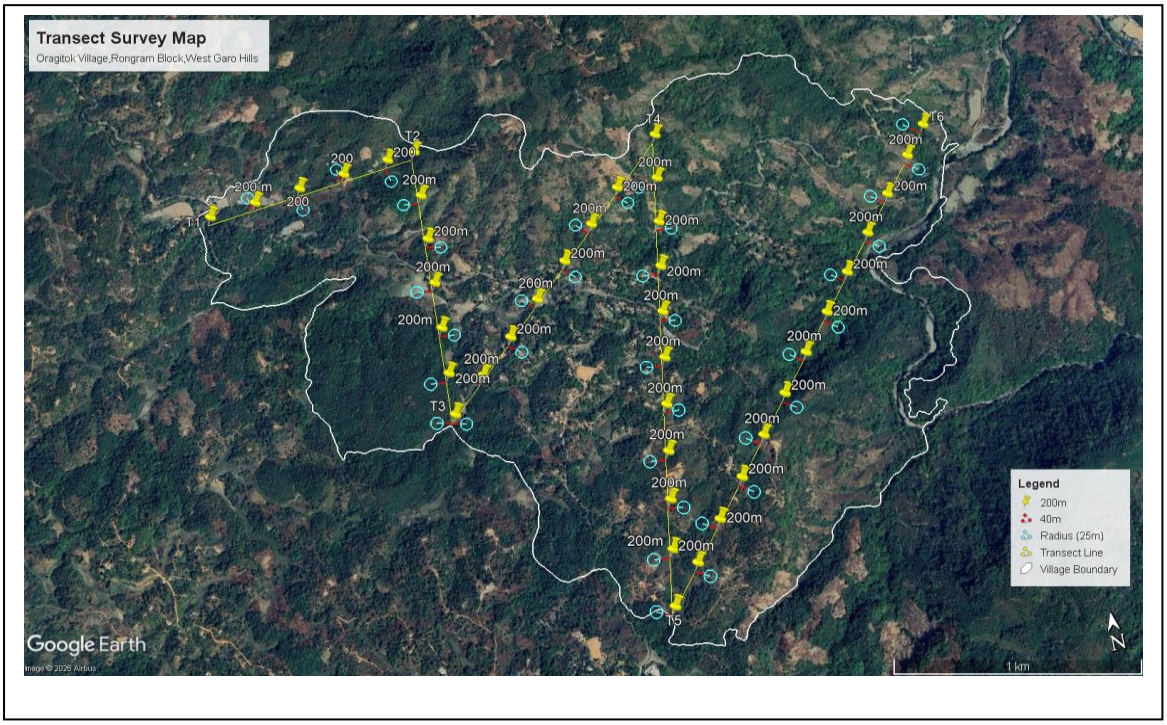


Figure 4:Transect Survey Map of the Bamboo Forest Area of Oragitok Village

3.1.6. Participatory Rural Appraisal (PRA) for assessing High Conservation Value (HCV)

Participatory Rural Appraisal (PRA) for High Conservation Value (HCV) exercise was carried out in Oragitok Village of Rongram Block, West Garo Hills District. The questionnaire covers information about biodiversity, cultural value sites, water resources, invasive species, NTFPs, hunting, environmental concerns, and community conservation practices. The assessment was carried out by group consultation with community members using a questionnaire for facilitating discussion. The PRA aimed to capture local traditional knowledge, cultural values, and community perception to support sustainable forest management. In all, 13 community members participated.

Objectives

The objectives of the PRA were to:

- Identify areas and natural resources with High Conservation Values.
- Document traditional ecological knowledge related to forests and bamboo.
- Identify ecological, cultural, and social values requiring protection.
- Understand community conservation practices and forest use.

Methodology

The PRA was conducted through village meetings and focused group discussion involving community members. Information was collected using questionnaire for facilitating covering biodiversity, rare species, wildlife, cultural heritage, water resources, invasive species, non-timber forest products (NTFPs), hunting, environmental concerns, and existing conservation practices. Field observations and participatory discussions were used to verify the information provided by the participants.

The methodology for the transect survey is as follows:

As shown in the map, the coordinates of end points of each segment of the transect line were generated from the GIS layer and with the help of GPS navigation along the transect line was ensured. As shown in the map sample observation points on either side of the transect line at a spacing of 200 m were taken. Specific observations were taken on the sample points but along the transect line also observations about the signs of HCV's were also taken. The observations were taken in a structured format. A copy of which is given in Annexure XV and Annexure XVI.

The PRA involved representatives from different sections of the community, including:

- Village Council members
- Traditional leaders
- Elders and traditional knowledge holders
- Women representatives
- Bamboo growers
- Farmers
- Youth representatives

The following are the findings:

A. Rare, Endangered, Threatened Plant Species

Rare, endangered, or threatened plant species are absent in the village forest or its vicinity, but a vulnerable species, Citrus indica, is present as per the PRA assessment.

The common plants found in the area are-

Trees: *Schima wallichii, Grewia species, Gmelina arborea, Eurya accuminata*, *Toona ciliata*

Shrubs/ Herbs: *Phyllanthus species*, Samitchip, Mana muni.

As per the information given by the community, the presence of few plant species such as *Gmelina arborea, Macaranga denticulata* has decreased in the area over the last few decades. No rare orchids are found in the area. The community has stated that a few of the

medicinal plants, such as Neem, Sisuchi, have become difficult to find over a period of time due to their excessive utilization.

B. Wildlife and Biodiversity

The community reported the occurrence of various mammals, birds, reptiles, and other wildlife within the village forests. Participants also identified wildlife movement routes and habitats that require protection. Evidence of animal sightings through footprints, nests, burrows, and feeding signs was mostly found for these animals- wild boar nest, porcupine footprints, yellow-throated marten scats, civet. Rare animals that are found in the forest are hoolock gibbon, elephant. The common bird species are red jungle fowl, barbet, black drongo. No rare or migratory birds are found. The reptiles found are Common green pit viper, gecko, chameleon, and monitor lizard.

C. Cultural and Historical Sites

PRA revealed that there is no site of cultural or historical significance in the village or it's vicinity except one. One sacred stone, locally known as 'A.song Kosi' is found near Simsang river. Old trees in the area are absent due to illegal felling from other villages and natural causes as storms, lightening. No old church was present in the area.

D. Water resources

Natural springs, streams, wetlands, and other water sources within the forest are identified and mapped. Community members discussed the seasonal availability of water, changes in spring flow, and issues relating to water quality and water scarcity. The natural springs found in the area are Chianing. The natural streams are Malsam, Wa.ge, Dilwang, and Sokua. All streams are perennial and none of the springs has dried up over the years. The elephants in the area are said to damage the pipe. Also, the community has mentioned that due to fewer plants, the water availability has decreased.

E. Invasive Alien Species

Participants identified invasive plant species occurring within the forest and discussed their impacts on bamboo growth, forest regeneration, and native biodiversity. *Mikania macrantha, Mucuna, Lantana camara* are said to affect bamboo growth or forest regeneration.

F. Non-Timber Forest Products (NTFPs)

The PRA documented important NTFPs collected by the community, including bamboo and other forest products used for household consumption, traditional practices, and income generation. Community members also discussed changes in resource availability over time.

The NTFP's collected by the community are Honey and wild fruits: *Baccaurea ramiflora, Haematocarpus validus*. Fruits mostly consumed by the people of the community are *Baccaurea ramiflora, Haematocarpus Validus, Tekra, Tesri, Tewan, Bakwe, Galwang Ficus species*. The household incomes are mostly obtained from shifting cultivation and wild fruits. The amount of harvest annually is said to be stable.

G. Hunting and Wildlife Pressure

Information was collected on hunting practices, community regulations governing hunting, and measures taken to reduce pressure on wildlife populations. There are village regulations for illegal hunting. Hunting is not practiced by the Oragitok village but traps are set by people from neighbouring villages mostly for wild boar.

H. Additional Environmental Concerns

Participants identified environmental issues affecting the forest, including soil erosion, landslides, illegal logging, mining, and the status of bamboo regeneration. These concerns were considered during the preparation of management prescriptions. There are no records of landslides or soil erosion. The bamboo regeneration in the area seems to be satisfactory as per the observations of the community.

I. Community Conservation Practices

The PRA documented existing community conservation initiatives, customary regulations, protected forest areas, and mechanisms used to enforce community rules for sustainable forest management.

The community reserves and fish sanctuaries are protected through the Headman and its members. A fine of INR 20,000 is imposed for cutting and the witness is given compensation of INR 1000 per case. The witness informs the community Headman or the volunteers.

Community members discussed pollution issues and assessed whether bamboo forest management activities could potentially cause environmental impacts. Appropriate mitigation measures were identified where necessary.

The pollution observed in the village of Oragitok are air pollution from shifting cultivation and garbage burning. They have agreed to carry out a cleaning drive within the community along with the volunteers of the village.

The findings of the PRA were incorporated into the Bamboo Forest Management Plan and Group Management System. The information was used to identify High Conservation Values, develop sustainable harvesting guidelines, formulate biodiversity conservation measures, protect cultural and water resources, and establish monitoring indicators. The PRA also serves as a baseline for future monitoring and adaptive management of the forest.

The PRA demonstrated that the community possesses extensive traditional knowledge of its forest resources and actively participates in their conservation and sustainable use. The integration of community knowledge with scientific assessment has strengthened the identification and management of High Conservation Values, ensuring that ecological, cultural, and livelihood values are maintained while supporting sustainable bamboo management under FSC certification for small holder given under RFSS standard.

Management guidelines for conservation of HVCs observed in Oragitok village

For objective identification of HCV's, mainly HCV 3 and HCV 4 in the village Oragitok and its vicinity, are detailed two-fold/track exercises were undertaken. One, the transect survey-based observations on a sampling basis. A transect survey map was prepared using GIS. The map is shown in the figure. A field survey team comprising two technical staff from Centre of Excellence (CoE) and two members from the village community carried out the field survey along the transect line.

The guidelines for conservation of the HVC's are as follows:

Floral

(i) The BFMC will also make an effort to create a small nursery cum garden for preserving these plants within the village as an in-situ conservation practice.
(ii) The BFMC will also conduct plantation drive during rainy season, i.e. May to August involving community members particularly children. In such drives, degraded areas, areas prone to landslides and areas prone to soil erosion. Fruit trees will also be included in the plantation activity.
(iii) In case it comes to notice of BFMC that there is an incidence of any disease or insect attack on the plant species than they will take suitable measure for controlling the nearest forest department office.

Faunal

(i) BFMC will conduct regular programmes at least annually for sensitizing the community members about the importance of protecting wildlife found in the village and it's vicinity in any form, including birds, reptiles, insects and mammals.
(ii) No wild animals will be killed for meat or food consumption.
(iii) BFMC will organise and educate the community member to remain vigilant about any wildlife hunting attempt by outside people. In case they get any intimation about any unlawful activity in this respect, they will immediately inform the Wildlife wing of the Forest Department (Contact Number: 03651-295558. Email ID: dfo.tura@rediffmail.com).

(iv) In case any offspring of wild animal is found abundant then BFMC members will make every effort to hand over the same to the Wildlife division of the Forest Department.

Natural Water Resources

(i) BFMC with the help of village community members will protect and manage natural water resources within the village and it's vicinity. There are three water springs in the village which are the main source of water for the community members. BFMC with the involvement of village community will develop water spring source by creating spring chamber and maintaining the same. Efforts will also be done on regular basis for ensuring conservation in the spring shed area.

(ii) BFMC with the support of village community will also take necessary measures for protecting riparian buffers along the streams and rivulets.

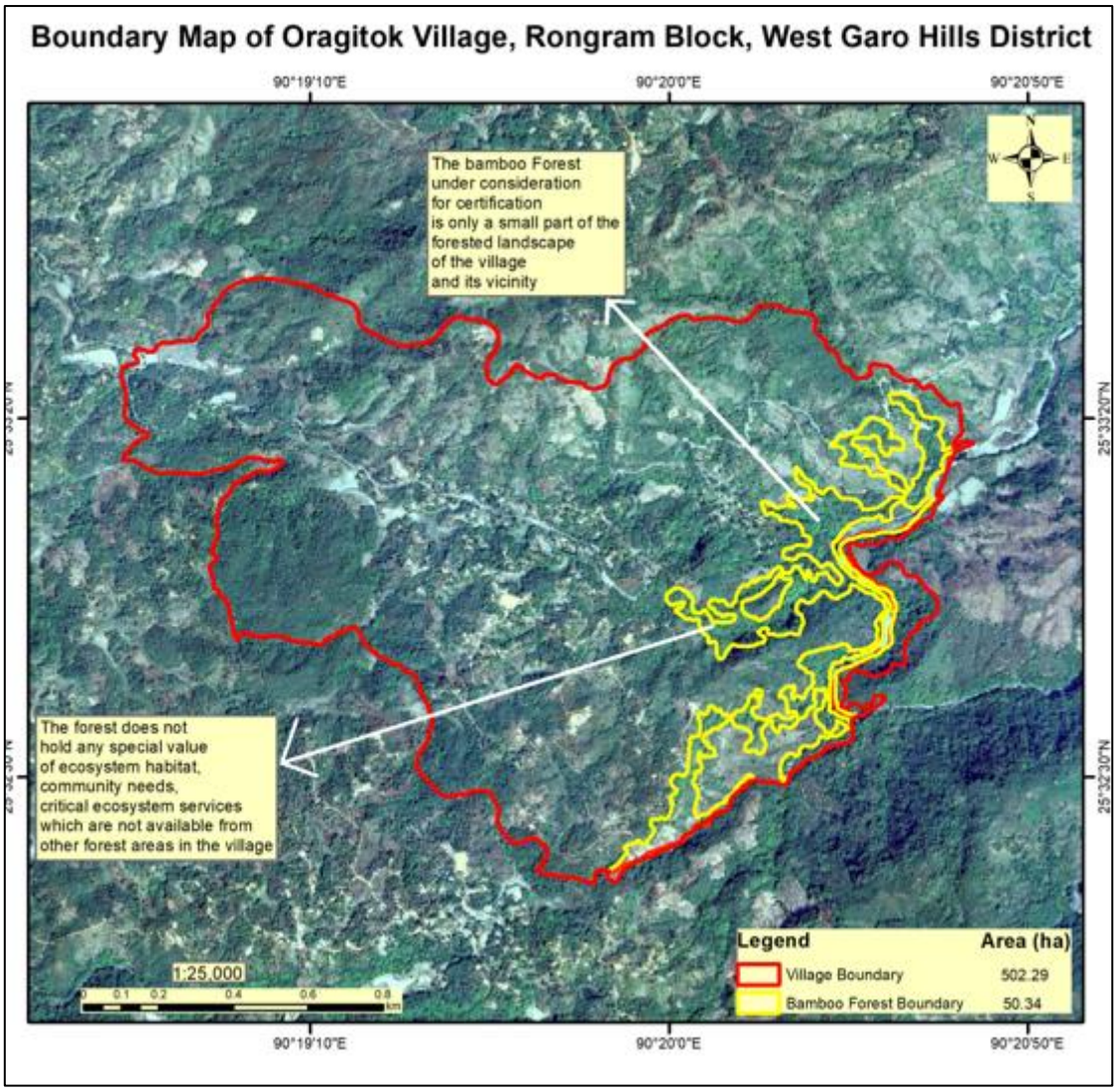


Figure 5: Boundary Map of Oragitok Village Showing the Bamboo Forest Area Proposed for Certification

The following native vegetation map (Fig 6) further illustrates this point, distinguishing the earmarked native forest cover (9.5 ha, shown in green) from the Bamboo Forest Management Area boundary (10 ha, shown in red) within the total village boundary of 140.41 ha:

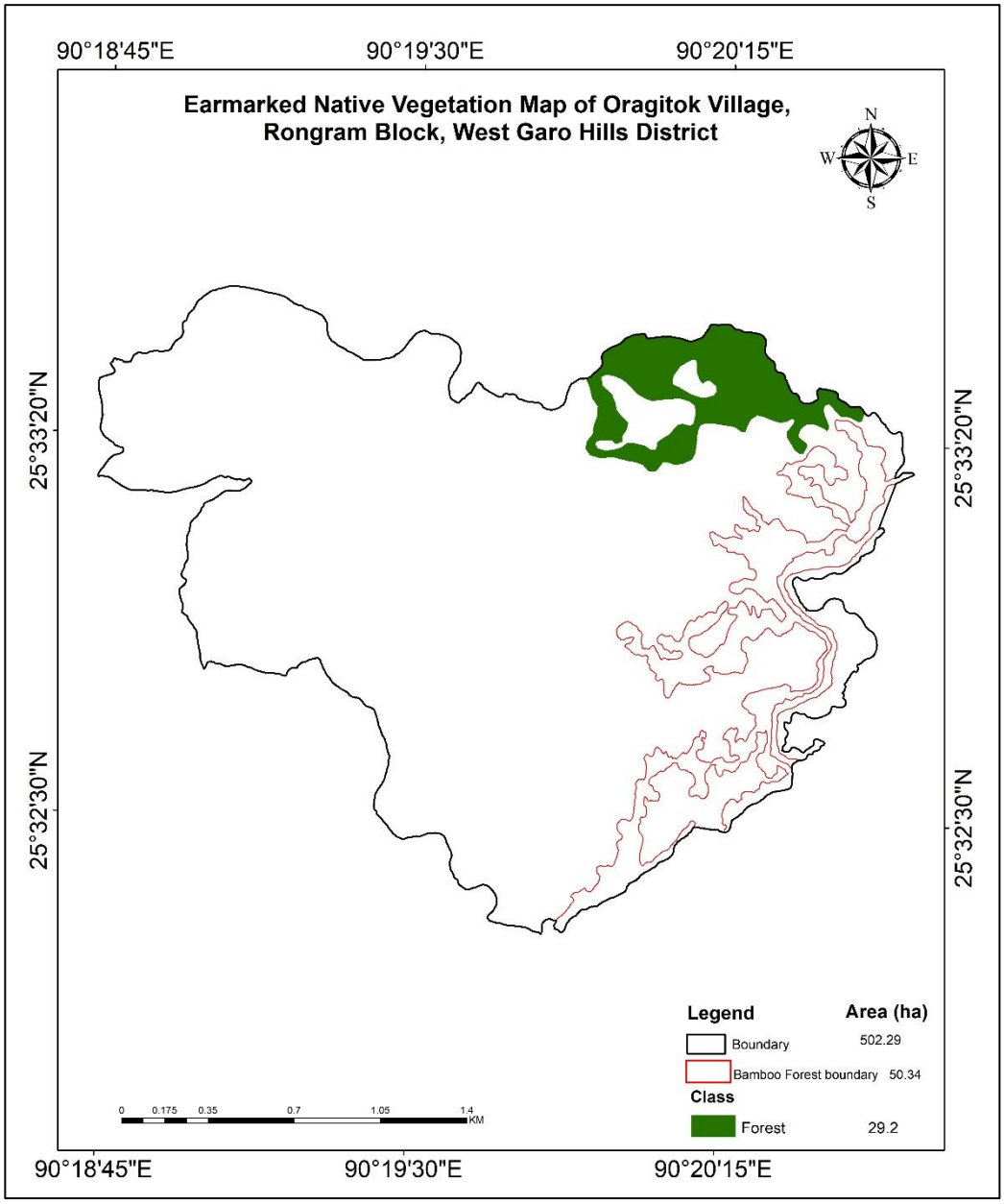


Figure 6:Earmarked Native Vegetation Map of Oragitok Village

3.1.7. Evidence that no deforestation in the forest has taken place after 1994

The following satellite image of the Bamboo Forest of the period 1994 clearly shows and the map shown in the (Figure 7) which is of the current period clearly shows that the forest has remain intact. Since the year 1994 and no deforestation of felling of trees has taken place in the forest. This fact was also corroborated by the community member during the consultative meeting held with them on _____ (Annexure XII).

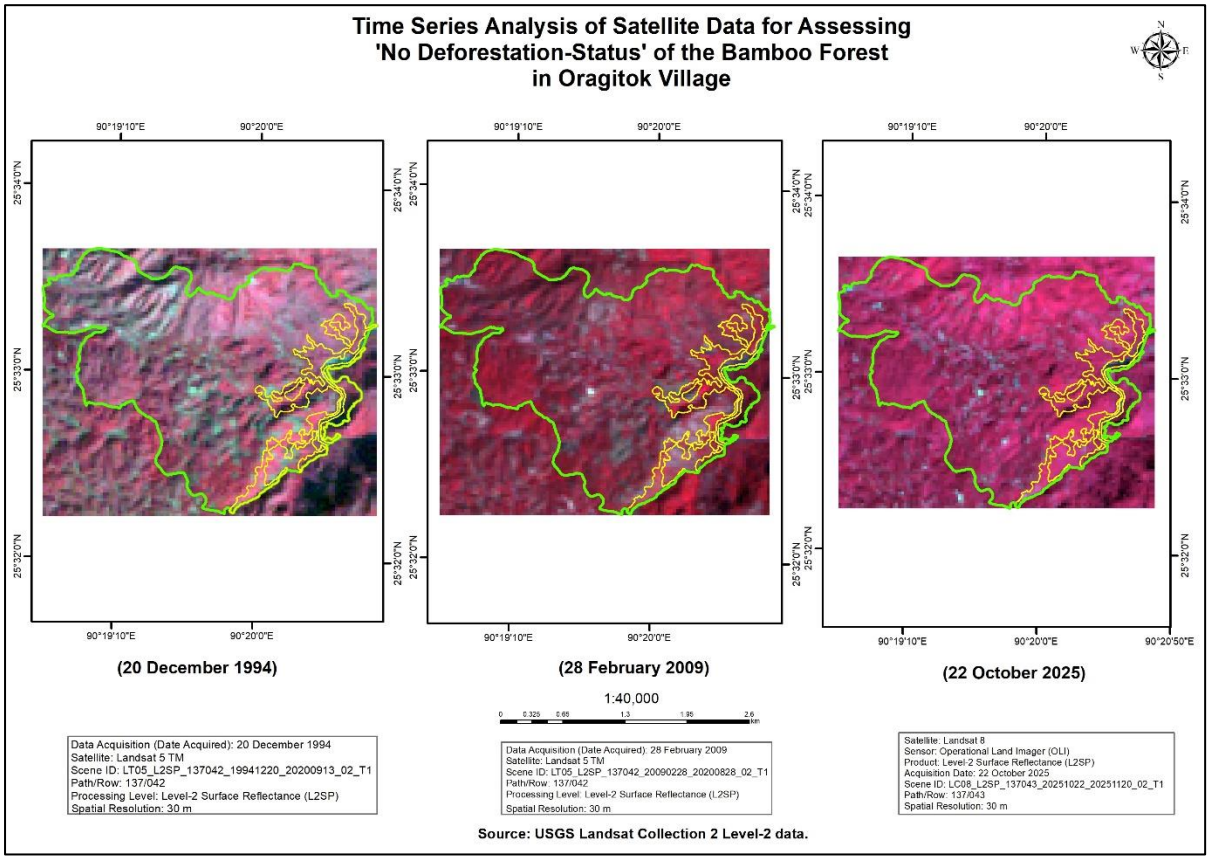


Figure 7:Satellite Imagery Showing Forest cover map of Oragitok village

3.1.8. Other Management Prescriptions

(i) Community members will maintain a record of bamboo harvesting done from the forest in a Bamboo control form given at the Annexure VI.

(ii) When bamboo is harvested, care should be taken that the cut and bundled culms are removed in such a manner that the extraction process does not cause any damage to the soil and biodiversity. The culms should preferably be removed by carrying manually on shoulder or using small wheeled carts.

(iii) The progress of the implementation of the Bamboo Forest Management Plan will be monitored in terms of the following parameters.

Sl. No.	Parameters/Observation	Periodicity
a.	Occurrence of forest fire	six monthly
b.	Number of culms harvested	quarterly
c.	Number of bamboo seedling planted	six monthly
d.	Weeding/cleaning carried out in the forest	six monthly

(iv) For the purpose of adaptive management observations on certain parameters will be recorded.

Sl. No.	Parameters/Observation	Periodicity
a.	Any pathological infestation	six monthly
b.	Any entomological infestation	six monthly
c.	Premature dying/splitting of bamboo culms	quarterly

(v) The resource inventory information presented in the section 3.1 shows that clump density in the forest is 44 per hectare only which is low. To improve the stocking of bamboo in the forest, it is proposed to carry out planting of bamboo seedlings of species like *Bambusa tulda, Melocanna baccifera* and *Dendrocalamus hamiltonii* in the inter-clump spacing. It is proposed to plant 9076 bamboo seedlings in the next 3 years.

(vi) It is prescribed that genetically modified planting material will not be used for the enrichment planting.

(vii) Use of chemical fertilizers should be avoided. In the rare circumstances even if it has to be used, only the bare minimum quantity of any chemical fertilizers should be used.

(viii) However organic fertilizers and bio-pesticides maybe used in the plantations/ forest as and when required.

(ix) Use of Biological Control Agents should be avoided. In the rare circumstances even if it has to be used, only the bare minimum quantity of any biological control agents should be used.

(x) Only native species of bamboo will be planted for regeneration and improving standing f the bamboo clumps (Annexure VII & VIII).

3.2. Bamboo Forest Area Distribution among Group Members

The bamboo forest proposed for sustainable management and certification is distributed among the members of the Bamboo Forest Management Committee (BFMC). The distribution of the bamboo forest area for each group member is shown in **Figure 8**.

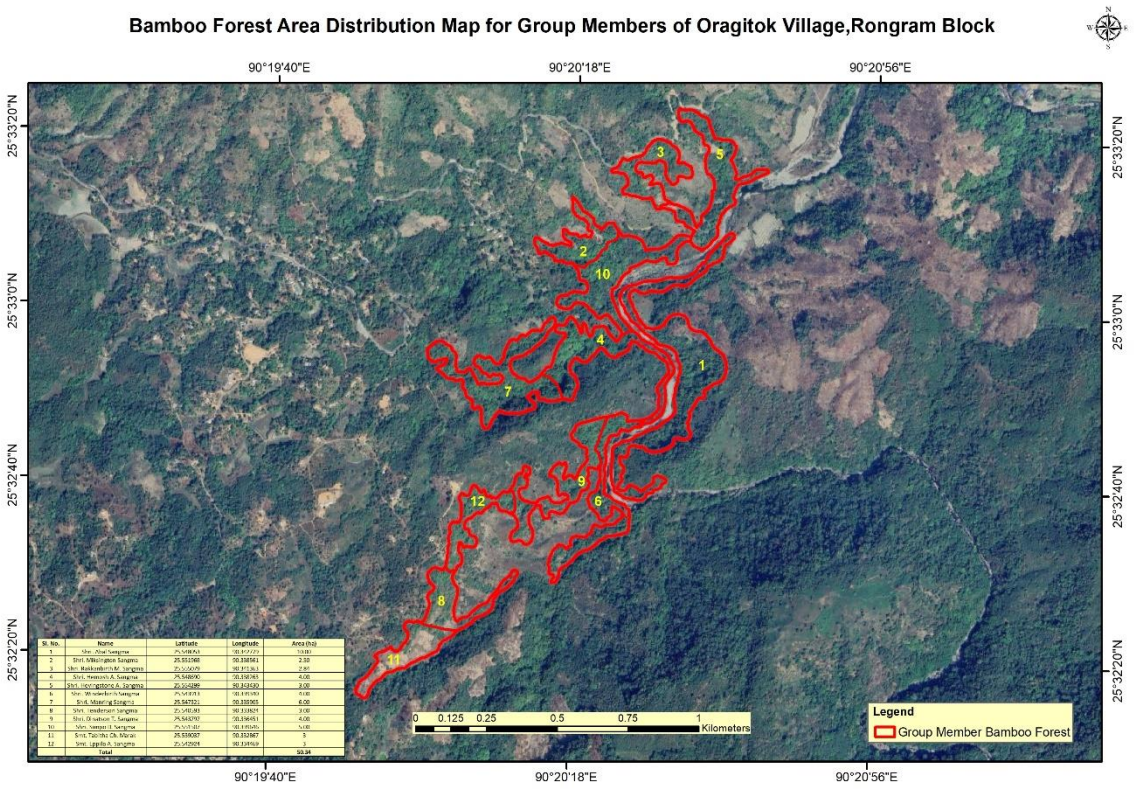


Figure 8:Bamboo Forest Area Distribution Map for Group Members of Oragitok Village, Rongram Block

3.3. Bamboo Forest Health

Regular observations will be undertaken to detect any insect or fungal infection on the bamboo clumps. In case such infections are noticed spray of suitable insecticides /fungicides preferably the herbal preparations will be done and affected culm will be removed. The BFMC should contact nearest Forest Department Office for appropriate treatment of the disease, BFMC members may also contact DFO, Silviculture Division, in Shillong for this purpose.

3.4. Invasive Species

Invasive species have a tendency to encroach bamboo forest lands and by doing so they suppress growth and regeneration of the native species in early stages. Spread of invasive species is damaging to Bamboo Forest and biodiversity. Dried biomass of invasive species becomes fire hazard. The BFMC therefore will organize drives for eradication of such invasive plants by uprooting or cutting them by involving community members at least twice in a year. The invasive species present in the area are *Mikania macrantha, Mucuna and Lantana camara.*

3.5. Soil

The bamboo plantation area in Oragitok village has loamy soil, which is well-drained, moderately fertile, and suitable for bamboo growth. To maintain soil health, organic matter will be added regularly, mulching will be practiced to retain moisture, and erosion control measures such as contour planting will be applied on slopes. Periodic soil monitoring will guide nutrient management to ensure sustainable bamboo production.

3.6. Water Quality / Riparian Habitat

The natural springs found in the area are Chianing. The natural streams are Malsam, Wa.ge, Dilwang, and Sokua. These springs provide a reliable year-round water source for bamboo maintenance and nursery activities. Water quality is generally good, with clear flow and no visible signs of contamination. Regular monitoring is recommended to ensure continued quality and sustainability. The BFMC will take all measures to protect existing water bodies within the forest. It will also ensure that Riparian zones are well protected within the forest (if any) or in the vicinity. Care will be taken not to disturb course of water in the streams and rivers passing through the community forest (Annexure VIII). Within 30 meters of either side of the rivers/ streams, the group member will ensure that the vegetation in any form is not uprooted or damaged. The group member will also ensure that the bank of the rivers/ streams are not eroded. Drainage Map of Oragitok Village can be found in Fig. 12.

3.7. Biodiversity

BFMC members will ensure that the existing biodiversity in the forest is fully protected. (Annexure IX). Special care will be taken of rare, endangered and threatened plants. Areas where such plants are growing will be delineated by way of small bamboo fencing. The BFMC will also ensure that no damage is done to the native ecosystem by any practice prescribed for bamboo management (Annexure VII & Annexure VIII).

3.8. Wildlife Habitat

Animals like wild boar nest, porcupine footprints, yellow-throated marten scats and civet are reported. Among the bird species the common ones found in the forest are red jungle fowl, barbet, black drongo, and swiftlet. It is recommended that all the wildlife species as scheduled under the Wildlife (Protection) Act, 1972, should be preserved. Being protected under the law, killing and harming them is punishable offence under the WP Act, 1972. It should be collective responsibility of the villagers under the watch of the BFMC (Bamboo Forest Management Committee) members to monitor all wildlife species including birds, reptiles, mammals. In case BFMC comes to know about any person having committed any offence by killing or harming the wild animals, then it is the duty of the BFMC to immediately report the matter to nearest Forest Department official. The BFMC should be particularly watchful for the hunters/poachers from outside the village. Contact numbers

of the concerned F&E Department officials are given in the table below:

Table 6: Contact details of Wildlife Officials

Designation	Contact Number	Email ID
PCCF (Biodiversity & Wildlife) & Chief Wildlife Warden, Shillong	0364-2227311 (F), 0364-2226460	wildlifeinfoeghlt@yahoo.com pccfmegh@gmail.com
Divisional Forest Office, Wildlife	03651-295558	dfo.tura@rediffmail.com

3.9. Forest Fire Protection

The BFMC members will ensure that the bamboo forest is well protected from forest fires. The community members will take due care especially in the fire season by patrolling and creating fire lines, removing inflammable dry biomass from the forest floor. Clearance of dry biomass on the periphery will be undertaken before the onset of fire season, i.e. November and December. The BFMC will also create awareness in the whole village for taking all precautions to prevent forest fires.

3.10. Environmental Protection

The Bamboo Forest Management Plan (BFMP) will also take care of other environmental concern. It will be ensured that activities under BFMP do not cause adverse environmental impacts in the land and water bodies in the vicinity of bamboo forest. Fire protection measures like creations and maintenance of fire line, removal of inflammable dry biomass and patrolling in the sensitive areas, will be part of the BFMP duties. BFMC will also organized awareness campaigned for environmental protection and fire risk reduction. Environmental prevention activities will also include protection of river/stream pollution, plastic pollution and soil erosion.

3.11. Site Access, Road & Trails

Current access is via earthen road from the village. Trails are narrow and steep. Improvement of trails through graveling and culvert installations will be undertaken in due course of time to ensure year-round access to the forest for harvesting and patrolling while preventing erosion and waterlogging.

3.12. Diversifying Bamboo based Economy

Initially the focus of the bamboo forest management will be on producing bamboo culms in a sustainable and environment friendly manner. Gradually, steps will also be taken to diversify bamboo-based enterprises in the village by procuring basic bamboo processing machines and imparting training to the bamboo craftsmen. This will generate more income

to the community members by selling value-added products like slivers, agarbatti sticks, treated culms, handicrafts etc.

4. Monitoring

4.1. Management activities and condition of management units

BFMC will be responsible for management activities as per the following tables:

Table 7: Monitoring of management activities

Sl. No.	Monitoring	Frequency	Remarks
1	Growing stock	Annual	Measurement of volume, density, and growth compared to previous data.
2	Protection from forest fire	Annual	By recording incident of fire and area burnt
3	Survival percentage of seedlings planted	Annual	By actual count
4	Soil health	Annual	Visual observation
5	Invasive species	Annual	Identifying invasive species in any area affected by them.

4.2. Social & Environmental Impacts

The bamboo forest Committee (BFMC) will record and review these indicators periodically to ensure equity and sustainable livelihood benefits for the community as per the following tables:

Table 8 : Monitoring of Social & Environmental Impacts

Sl. No.	Monitoring	Frequency	Remarks
1	Income generated from bamboo and related activities	Annual	Average annual income
2	Participation of local stakeholders, including women and SHGs, in forest management activities	Annual	Actual number
3	Safety	Annual	Incidence of injury, if any
4	Disturbance to biodiversity	Annual	Observation by transect survey
5	Plastic pollution	Annual	Number of plastic materials observed during transect survey

Table 9 : Record Keeping of all the FSC Products Sold

Sl. No.	Bamboo culms number		Date of sale	Name of Purchaser	Address of Purchaser	Remarks
	Species	Number				

5. Periodic Revision of the Management Plan

The Bamboo Forest Management Plan (BFMP) shall be revised periodically after every five (5) years to ensure its continued relevance, effectiveness, and alignment with the prevailing ecological, social, and economic conditions.

The objectives of periodic revision are as follows:
a) Updating of resource inventory based on field assessments and monitoring data.
b) Determination of sustainable yield as per the latest status of bamboo resources.
c) Revision of management prescriptions considering emerging challenges, environmental changes, and community requirements, if any.

6. Roles and Responsibilities

The Group Entity acts as the central administrative body holding the group certificate on behalf of the Resource Management Units (RMUs), responsible for ensuring all group members comply with FSC Forest Management standards.

Resource Management Unit (RMU)/ Bamboo Forest Management Committee (BFMC) acts as body that has ownership rights over the bamboo forest(s) and is also responsible for managing the overall resource for the process of certification.

The highest level of decision-making in the village is the Nokma, heading the Village Council. For bamboo forest management activities, the Village Council will form a Bamboo Forest Management Committee (BFMC). A Group Member in the FSC certification scheme is an individual who is part of a larger group holding a single, shared certificate. The individual member retains specific responsibilities to ensure compliance with FSC principles.

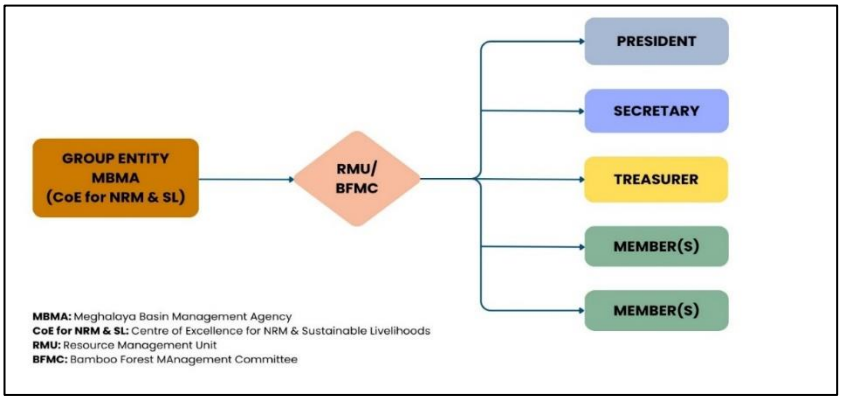


Figure 9:Structure of the Organisation

6.1. Group Entity: Centre of Excellence (NRM & SL), MBMA

Key responsibilities of the Group Entity include:

- Develop the framework and maintain written procedures for membership, covering organizational structure, eligibility, and withdrawal/ suspension.
- Maintain written procedures for managing the group and a public policy of commitment to FSC Principles and Criteria.
- Ensure sufficient human and technical resources to manage the group, including defining the maximum number of members.
- Provide members with documentation, including the FSC standard, group rules, an explanation of the certification process, and cost structure.
- Identify training needs and provide training and communication strategies to help members implement FSC standards.
- Act as the primary contact for the certification body, FSC, and ASI when required.
- Implement a documented monitoring system to ensure continued compliance with FSC standards.
- Conduct regular (at least annual) on-site monitoring visits to a sample of group members.
- Issue corrective action for non-compliances identified during internal audits and monitor their implementation.
- Maintain up-to-date group records for at least five years, including member lists, consent forms, training records, maps, and monitoring reports.
- Implement a system for tracking and tracing forest products from group members to ensure non-certified material is not mixed with FSC-certified products.
- Provide consent for trading of bamboo when all criteria have been met by RMUs.
- Verify the credibility and authenticity of the buyer before issuing the consent.
- Approve use of the FSC trademark for RMUs working with the certification body.
- Ensure invoices for FSC-certified material are issued correctly and filed by members.
- Evaluate every applicant to ensure compliance with standards before adding them to the group.
- Ensure all actors within the group understand their responsibilities.
- The group entity holds the certificate and ensures that no confusing or incorrect

certificates are issued to members.

6.2. Resource Management Unit (RMU)/ Bamboo Forest Management Committee (BFMC)

A body that has ownership rights over the bamboo forest(s) and is also responsible for managing the overall resource.

- The primary responsibility of an RMU is to implement centralized, homogeneous, and sustainable forest management on behalf of members, ensuring compliance with FSC Principles and Criteria.
- Ensure that their management units are not included in any other FSC certificate.
- Implementing, and keeping up-to-date management plans for all units in the RMU/ BFMC.
- The RMU must take control over key management activities, including harvesting, planting, and silvicultural practices, to ensure they meet FSC standards and are consistent with sustainable forest management practices.
- Implementing a documented, regular (annual) monitoring and internal audit system to verify that management units continue to comply with FSC requirements.
- Establishing a tracking system to ensure that non-certified material is not mixed with FSC-certified material, and that all bamboo can be traced from the forest to the point of first sale.
- Ensuring all forest workers and community members operating in the RMU receive necessary training, supervision, and safety protection.
- Maintain records of forest management activities, including harvest volumes, planting, and sales of FSC-certified material, for at least five years.
- Actively engaging with local communities and other affected parties to identify and resolve conflicts over tenure, use rights, and management impacts.

6.3. Group Member

A Group Member in the FSC certification scheme is an individual that is part of a larger group holding a single, shared certificate. The individual member retains specific responsibilities to ensure compliance with FSC principles (Annexure X).

The responsibilities of an FSC group member generally include:

- Implement the relevant FSC requirements within their own forest management unit.
- Follow the written procedures, guidelines, and rules established by the Group Entity.
- Sign a declaration of consent committing to FSC principles and authorizing the Group Entity to manage the certification on their behalf.

- He/ She will be responsible for implementing all the prescriptions given in the Bamboo Forest Management Plan (BFMP).
- Utilize the tracking system defined by the Group Entity to ensure non-certified material is not mixed with FSC-certified material.
- Participate in internal monitoring visits conducted by the Group Entity (usually annually).
- Cooperate with the third-party certification body during their evaluation of the group, which includes allowing site access to auditors.
- Implement necessary corrective actions for any non-conformities identified during internal or external audits.
- Use of the FSC trademark and logo only with the prior approval of the Group Entity and the certification body.
- Ensure all sales invoices for FSC-certified material contain the required information (including the group certificate code).
- Attend training activities and familiarise themselves with the FSC standards and group procedures provided by the group manager.

6.4. President

- The President has overall responsibility for ensuring conformity with forest management certification standards and group rules.
- He/ She oversees all operational forest management activities (e.g., planting, harvesting) within the RMU to ensure they meet certification standards.
- Maintains all necessary documentation, implements internal monitoring, and tracks conformance with the group certification standard.
- The President identifies training needs and records/ closes out any non-conformities found during internal or external audits.
- He/ She serves as the key contact between group members, group auditors, and the certification body.
- In some cases, he/ she will be responsible for training, evaluating, and supervising work within the group.

6.5. Secretary

- Maintains secure, organized records of all certification applications, assessments, and decisions, ensuring they are available for audits.
- Files and manages all committee correspondence, reports, and official documents.

- Liaises with the President to convene meetings, prepare agendas and schedules meetings well in advance.
- Records accurate minutes, documenting discussions, motions, and decisions made regarding certification.
- Circulates meeting materials, agenda items, and minutes to group members.
- Ensures the RMUs/ BFMCs certification activities align with governing documents, legal requirements, and industry standards.
- Responds to queries regarding the certification process, procedures, and status.
- Prepares annual reports or updates on certification activities.
- Communicates certification decisions to stakeholders and ensures follow-up actions are completed.
- Assists in auditing and verifying the accuracy of certification documents before final approval.

6.6. Treasurer

- Manage bank account of the RMU and ensure funds are deposited in the Bank correctly.
- Provide regular, accurate financial updates to the committee regarding income, expenses, and cash flow, highlighting any budgetary deviations.
- Maintain up-to-date, detailed financial records, including receipts, invoices, and bank statements, ensuring they are prepared for annual audits or legal requirements.
- Authorization of payments whenever required.
- Asset management.
- The Treasurer should have a grounded understanding of budgeting, accounting practices, and financial reporting.

6.7. Maps

Fig 10: Satellite image showing the bamboo forest boundary.
Fig 11: Distribution map of inventory sample plots.
Fig 12: Drainage map of Oragitok village

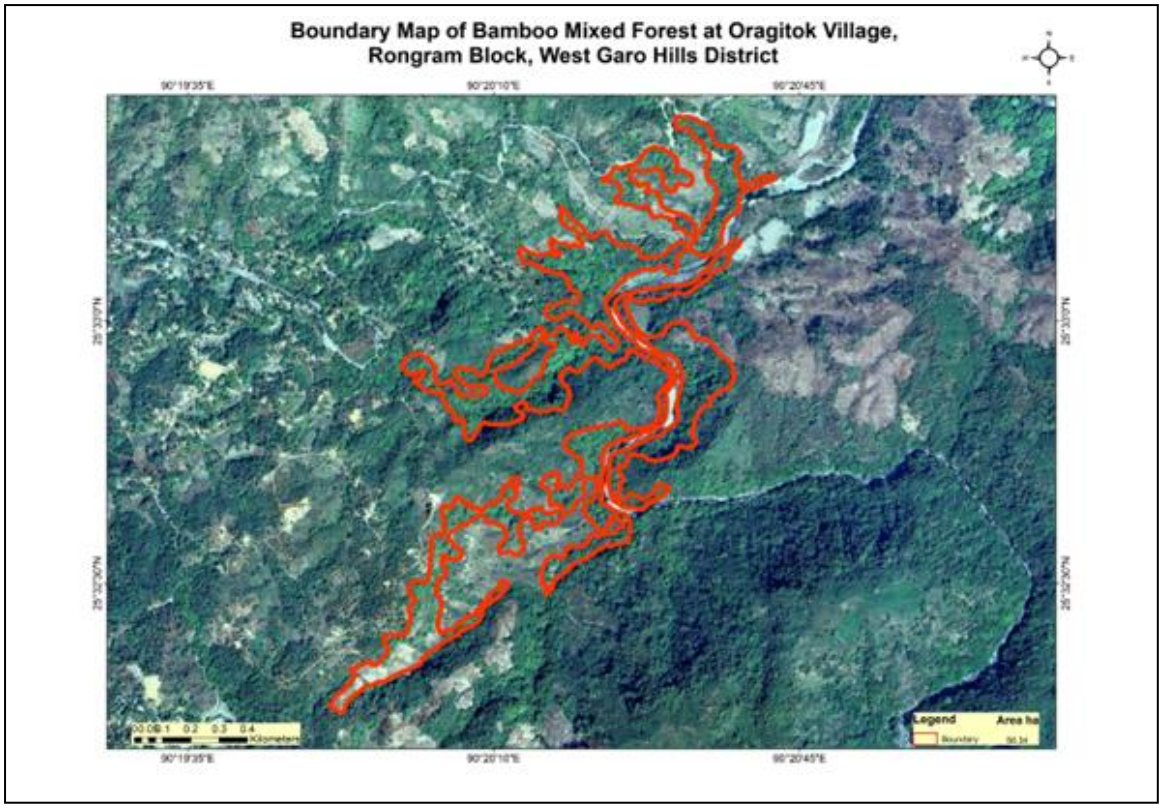


Figure 10:Satellite image overlaid with boundary of bamboo forest

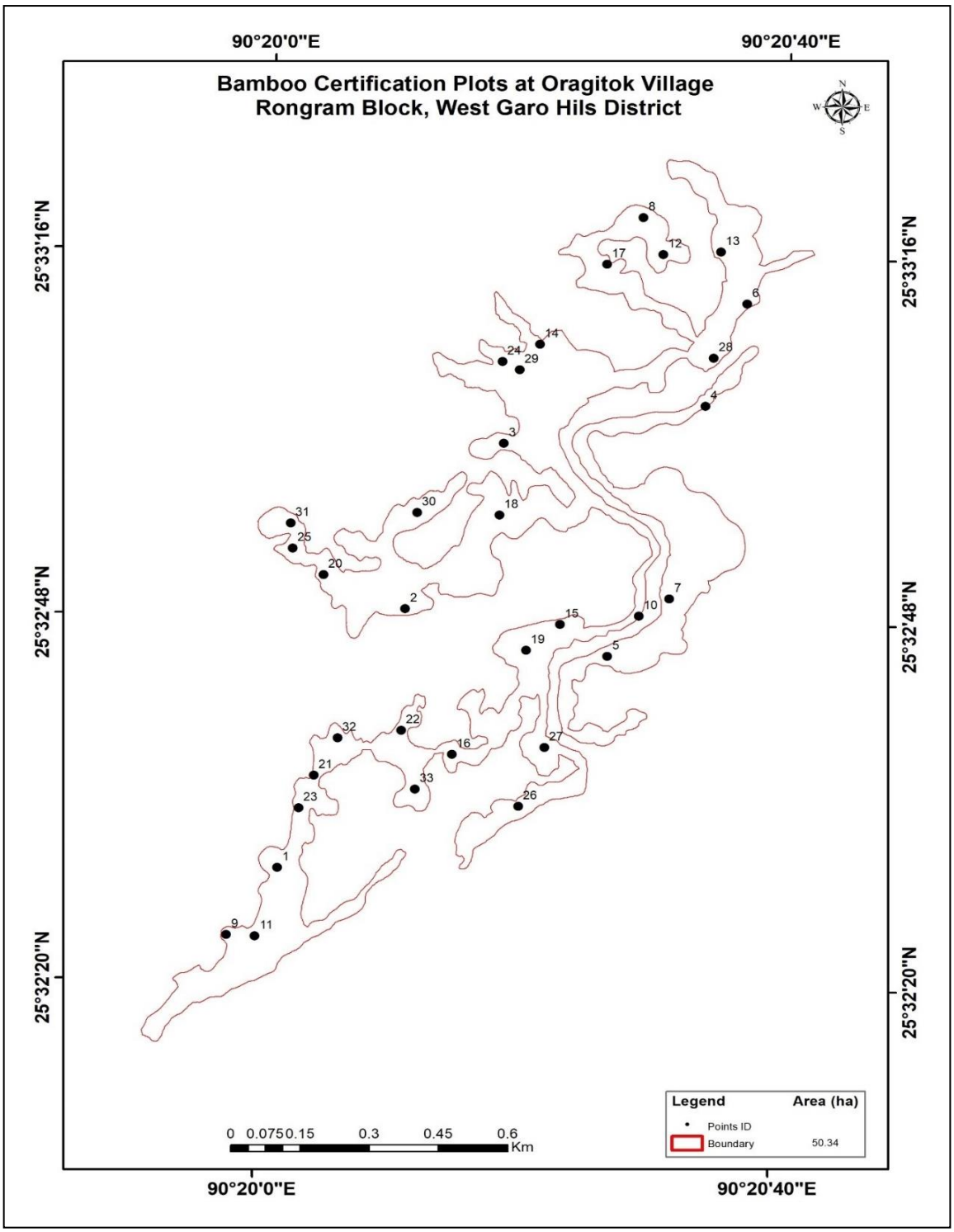


Figure 11: Bamboo Forest map showing the location of sample plots

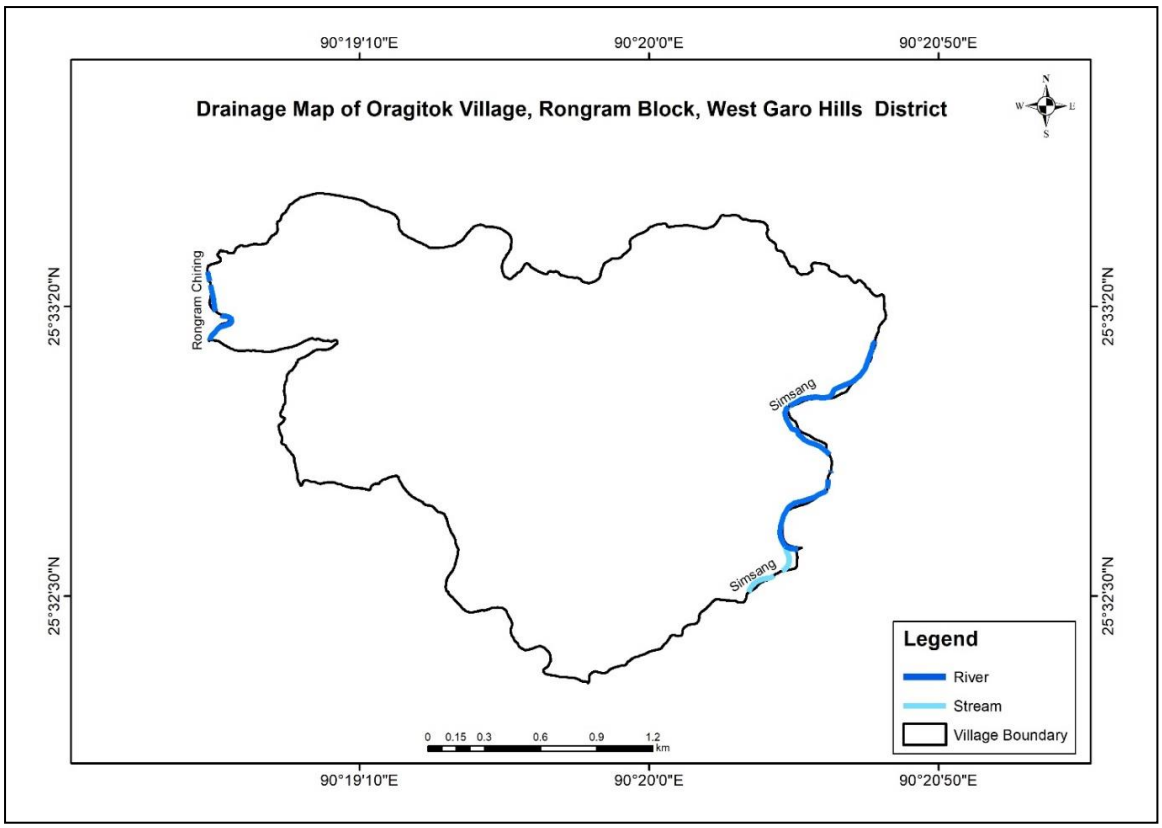


Figure 12: Drainage map of Oragitok village



Figure 13:Bamboo resource inventory exercise at Oragitok village

Annexure– I Self-Declaration of Commitment to FSC Principle

SELF-DECLARATION OF COMMITMENT TO FSC PRINCIPLES AND CRITERIA

I _____, the undersigned smallholder, hereby declare my long-term commitment to adhere to the FSC Principles and Criteria, and to comply with the relevant FSC Policies and Standards within my Management Unit.

By voluntarily participating in the FSC certification process, I confirm my intent to manage my forest resources responsibly, in accordance with the values and guidelines set forth by the Forest Stewardship Council (FSC). This includes environmental stewardship, social responsibility, and economic viability as outlined in the FSC system.

This commitment shall be documented in a publicly available format and made freely accessible to all stakeholders, including community members, regulatory agencies, and certifying bodies.

By choosing to participate in the FSC certification system, the smallholder confirms their conformity with the requirements of this criterion and their active role in supporting sustainable and responsible forest management.

This declaration affirms that I understand and accept the obligations and benefits of being part of the FSC system, and that I will continue to operate in conformity with its requirements.

Name of Smallholder : _____
Location of Management Unit: _____
Signature : _____
Contact Information : _____
ID Proof Details : _____
Date : _____

Annexure– II Judicial System in Garo Hills Districts

Judicial System in the Garo District : The Rules of 1953

Detailed provisions as to the judicial system of the Garo District are contained in the Rules called the Garo Hills Autonomous District (Administration of Justice) Rules, 1953 (hereinafter referred to as Rules) dealing with the administration of justice in that district. Topic-wise discussion of the position follows.

Constitution of Village Councils

In the Garo District, there is a Village Council for each village within the jurisdiction of the District Council. Each Village Council is to be composed of—

(a) the *lasker*[1] of the village, to be recognised by the District Council.

(b) elders, half of whom shall be nominated by the executive committee and the other half elected by the adult members of the village, the number of elders for each Village Council being determined by the District Council.[2]

There is a president and a vice-president of each Village Council. The president and the vice-president shall be elected by the members of the Council from amongst themselves, by a majority of votes.[3]

Every Village Council has a life of five years from the date of its first meeting, unless dissolved earlier by the District Council.[4]

Constitution of courts

There are three classes of courts (as specified below) in the areas

1. *Lasker* is an office-holder resembling the village headman.
2. Rule 4.
3. *Ibid.*
4. *Ibid.*

Annexure– III Meghalaya Societies Registration Act, 1983

Postal Registration No. N. E.—771/2006-2008

सत्यमेव जयते

The Gazette of Meghalaya

EXTRAORDINARY

PUBLISHED BY AUTHORITY

No. 49 Shillong, Friday, May 29, 2015, 8th Jyaistha, 1937 (S. E.)

PART-IV

GOVERNMENT OF MEGHALAYA

LAW (B) DEPARTMENT

ORDERS BY THE GOVERNOR

NOTIFICATION

The 29th May, 2015.

No.LL(B)39/2015/21.–The Meghalaya Local Administration (Empowerement of Traditional Institutions, Traditional Bodies and Headmen in Governance and Public Delivery System) Ordinance, 2015 is hereby published for general information.

MEGHALAYA ORDINANCE NO. 1 OF 2015.

Promulgated by the Governor on the 29th May, 2015.
Published in the Gazette of Meghalaya Extra-Ordinary issue dated 29th May, 2015.

THE MEGHALAYA LOCAL ADMINISTRATION (EMPOWERMENT OF TRADITIONAL INSTITUTIONS, TRADITIONAL BODIES AND HEADMEN IN GOVERNANCE AND PUBLIC DELIVERY SYSTEM) ORDINANCE, 2015.

An

Ordinance

to provide for association of traditional institutions, traditional bodies and headmen in the Government developmental programmes and delivery of public services, wherever required and to the extent necessary, in the interest of public at large and for matters connected therewith.

Annexure– IV Sample Plot Data

Sample Plot Data for Clump-Forming Bamboo

Sl. No.	Plot ID	Latitude	Longitude	Type of Land	Approx. Size of Clump (m)	Species		Number of Culm in different Girth Classes			
						Local Name	Botanical Name	1-15 (cm)	15-30 (cm)	>30 (cm)	Total
1	1	25.541311	90.333798	Community	5.1	Wama	*Bambusa vulgaris*	37	11	0	48
2	1			Community	2.8	Watebok	*Bambusa jaintiana*	36	0	0	36
3	1			Community	4.6	Wama	*Bambusa vulgaris*	3	7	0	10
4	1			Community	3.1	Watebok	*Bambusa jaintiana*	19	0	0	19
5	1			Community	6.2	Wama	*Bambusa vulgaris*	6	17	0	23
6	1			Community	6.9	Wama	*Bambusa vulgaris*	0	40	0	40
7	1			Community	2.5	Watebok	*Bambusa jaintiana*	22	0	0	22
8	1			Community	2.5	Watebok	*Bambusa jaintiana*	17	0	0	17
9	1			Community	2.5	Wama	*Bambusa vulgaris*	0	5	7	12
10	2	25.546861	90.336436	Community	4.6	Wadro	*Ochlandra scriptoria*	0	38	0	38
11	2			Community	5.7	Wadro	*Ochlandra scriptoria*	0	52	0	52
12	2			Community	6.8	Wadro	*Ochlandra scriptoria*	0	60	0	60
13	2			Community	3.8	Wadro	*Ochlandra scriptoria*	0	25	0	25
14	2			Community	7.8	Wadro	*Ochlandra scriptoria*	0	73	0	73
15	2			Community	6.1	Wadro	*Ochlandra scriptoria*	0	54	0	54
16	3	25.550419	90.338486	Community	5.4	Watebok	*Bambusa jaintiana*	78	16	0	94
17	3			Community	6.1	Wanari	*Bambusa vulgaris*	37	20	0	57
18	3			Community	6.6	Wanari	*Bambusa vulgaris*	31	21	0	52
19	3			Community	5.1	Wanari	*Bambusa vulgaris*	32	9	0	41
20	3			Community	4.7	Watebok	*Bambusa jaintiana*	47	16	0	63
21	4	25.551284	90.342816	Community	3.8	Watebok	*Bambusa jaintiana*	29	9	0	38
22	4			Community	3.1	Watebok	*Bambusa jaintiana*	14	5	0	19
23	4			Community	3.6	Watebok	*Bambusa jaintiana*	39	6	0	45
24	4			Community	4.1	Watebok	*Bambusa jaintiana*	24	0	0	24
25	4			Community	4.2	Watebok	*Bambusa jaintiana*	42	4	0	46
26	4			Community	4.2	Watebok	*Bambusa jaintiana*	48	7	0	55

27	4			Community	3.1	Watebok	*Bambusa jaintiana*	21	0	0	21
28	4			Community	4.4	Watebok	*Bambusa jaintiana*	35	0	0	35
29	6	25.553473	90.343672	Community	11.0	Wama	*Bambusa vulgaris*	13	39	15	67
30	6			Community	8.9	Wama	*Bambusa vulgaris*	17	32	9	58
31	8	25.555277	90.341392	Community	5.2	Wama	*Bambusa vulgaris*	0	20	9	29
32	8			Community	3.4	Wama	*Bambusa vulgaris*	37	4	0	41
33	8			Community	6.2	Wama	*Bambusa vulgaris*	31	7	0	38
34	8			Community	1.9	Wama	*Bambusa vulgaris*	0	8	9	17
35	8			Community	7.4	Wama	*Bambusa vulgaris*	18	25	8	51
36	8			Community	5.0	Wama	*Bambusa vulgaris*	23	15	10	48
37	8			Community	2.1	Wama	*Bambusa vulgaris*	0	7	12	19
38	8			Community	4.2	Watebok	*Bambusa jaintiana*	38	5	0	43
39	8			Community	4.2	Watebok	*Bambusa jaintiana*	48	3	0	51
40	8			Community	3.6	Watebok	*Bambusa jaintiana*	30	3	0	33
41	8			Community	4.7	Watebok	*Bambusa jaintiana*	43	4	0	47
42	8			Community	5.7	Watebok	*Bambusa jaintiana*	57	2	0	59
43	8			Community	2.9	Watebok	*Bambusa jaintiana*	25	6	0	31
44	9	25.539863	90.332726	Community	5.8	Watebok	*Bambusa jaintiana*	57	21	0	78
45	9			Community	4.2	Watebok	*Bambusa jaintiana*	31	20	0	51
46	9			Community	5.5	Watebok	*Bambusa jaintiana*	47	17	0	64
47	9			Community	4.3	Watebok	*Bambusa jaintiana*	23	16	0	39
48	9			Community	2.3	Watebok	*Bambusa jaintiana*	16	11	0	27
49	9			Community	4.0	Watebok	*Bambusa jaintiana*	21	12	0	33
50	9			Community	4.6	Watebok	*Bambusa jaintiana*	24	18	0	42
51	9			Community	3.2	Watebok	*Bambusa jaintiana*	28	8	0	36
52	10	25.546793	90.341476	Community	8.6	Wama	*Bambusa vulgaris*	5	0	22	27
53	10			Community	7.9	Wama	*Bambusa vulgaris*	0	0	52	52
54	11	25.539839	90.333342	Community	6.5	Wama	*Bambusa vulgaris*	20	43	0	63
55	11			Community	4.4	Wama	*Bambusa vulgaris*	9	27	0	36
56	11			Community	6.3	Wama	*Bambusa vulgaris*	16	29	13	58
57	11			Community	5.5	Wama	*Bambusa vulgaris*	8	38	0	46

58	11			Community	8.4	Wama	*Bambusa vulgaris*	11	21	7	39
59	11			Community	5.7	Wama	*Bambusa vulgaris*	8	9	0	17
60	13	25.554496	90.341833	Community	3.7	Wama	*Bambusa vulgaris*	0	34	6	40
61	13			Community	2.9	Wama	*Bambusa vulgaris*	0	18	0	18
62	13			Community	5.9	Wama	*Bambusa vulgaris*	9	43	4	56
63	13			Community	6.7	Wama	*Bambusa vulgaris*	69	34	6	109
64	13			Community	6.4	Watebok	*Bambusa jaintiana*	53	18	0	71
65	13			Community	4.7	Watebok	*Bambusa jaintiana*	109	54	0	163
66	13			Community	8.8	Wama	*Bambusa vulgaris*	43	15	0	58
67	14	25.552537	90.339216	Community	3.6	Wama	*Bambusa vulgaris*	0	38	10	48
68	14			Community	4.1	Wama	*Bambusa vulgaris*	0	12	26	38
69	14			Community	2.4	Wama	*Bambusa vulgaris*	14	22	0	36
70	14			Community	3.4	Wama	*Bambusa vulgaris*	18	27	0	45
71	15	25.546584	90.339777	Community	4.9	Wama	*Bambusa vulgaris*	2	12	3	17
72	15			Community	3.7	Wama	*Bambusa vulgaris*	2	13	0	15
73	15			Community	7.3	Wama	*Bambusa vulgaris*	18	37	15	70
74	15			Community	5.5	Wama	*Bambusa vulgaris*	6	7	4	17
75	15			Community	2.0	Wama	*Bambusa vulgaris*	3	4	0	7
76	15			Community	2.0	Wama	*Bambusa vulgaris*	27	0	0	27
77	15			Community	3.5	Watebok	*Bambusa jaintiana*	59	27	0	86
78	15			Community	3.0	Watebok	*Bambusa jaintiana*	39	6	0	45
79	15			Community	4.9	Watebok	*Bambusa jaintiana*	16	0	0	16
80	15			Community	4.9	Watebok	*Bambusa jaintiana*	82	23	0	105
81	15			Community	5.1	Wama	*Bambusa vulgaris*	20	7	0	27
82	16	25.54378	90.337509	Community	9.9	Wama	*Bambusa vulgaris*	34	43	26	103
83	16			Community	3.0	Wama	*Bambusa vulgaris*	9	22	0	31
84	16			Community	5.5	Wama	*Bambusa vulgaris*	18	32	0	50
85	17	25.554266	90.340628	Community	2.8	Wama	*Bambusa vulgaris*	4	19	3	26
86	17			Community	2.7	Wama	*Bambusa vulgaris*	7	9	2	18
87	17			Community	1.8	Wama	*Bambusa vulgaris*	3	4	7	14

88	17			Community	5.6	Wama	*Bambusa vulgaris*	8	15	15	38
89	18	25.54889	90.338423	Community	2.8	Wama	*Bambusa vulgaris*	0	13	8	21
90	18			Community	2.7	Wama	*Bambusa vulgaris*	0	11	6	17
91	18			Community	4.4	Wama	*Bambusa vulgaris*	32	26	0	58
92	18			Community	5.8	Wama	*Bambusa vulgaris*	69	14	0	83
93	19	25.546025	90.33906	Community	7.0	Wama	*Bambusa vulgaris*	8	26	5	39
94	19			Community	9.0	Wama	*Bambusa vulgaris*	23	27	7	57
95	19			Community	6.3	Wanari	*Bambusa vulgaris*	7	52	0	59
96	19			Community	8.9	Watebok	*Bambusa jaintiana*	30	17	0	47
97	19			Community	3.4	Watebok	*Bambusa jaintiana*	52	7	0	59
98	19			Community	4.7	Wama	*Bambusa vulgaris*	0	5	12	17
99	19			Community	1.3	Wama	*Bambusa vulgaris*	7	0	0	7
100	19			Community	2.7	Wama	*Bambusa vulgaris*	0	3	10	13
101	20	25.547558	90.33466	Community	5.2	Wama	*Bambusa vulgaris*	30	8	12	50
102	20			Community	9.1	Wama	*Bambusa vulgaris*	120	0	0	120
103	20			Community	7.5	Wama	*Bambusa vulgaris*	0	22	16	38
104	21	25.543284	90.334543	Community	11.6	Wama	*Bambusa vulgaris*	11	63	16	90
105	21			Community	7.7	Wama	*Bambusa vulgaris*	12	25	6	43
106	21			Community	4.1	Wama	*Bambusa vulgaris*	4	19	6	29
107	21			Community	4.0	Wama	*Bambusa vulgaris*	0	17	8	25
108	21			Community	4.1	Wama	*Bambusa vulgaris*	2	11	3	16
109	21			Community	8.2	Wama	*Bambusa vulgaris*	5	33	3	41
110	22	25.544275	90.336406	Community	1.8	Wama	*Bambusa vulgaris*	0	14	9	23
111	22			Community	2.5	Wama	*Bambusa vulgaris*	0	12	7	19
112	22			Community	2.4	Watebok	*Bambusa jaintiana*	57	0	0	57
113	22			Community	4.7	Wama	*Bambusa vulgaris*	0	14	7	21
114	23	25.542587	90.334231	Community	7.7	Wama	*Bambusa vulgaris*	16	32	0	48
115	23			Community	6.3	Wama	*Bambusa vulgaris*	11	25	0	36
116	23			Community	4.4	Wama	*Bambusa vulgaris*	9	19	0	28
117	23			Community	5.2	Wama	*Bambusa vulgaris*	5	39	0	44
118	23			Community	11.6	Wama	*Bambusa vulgaris*	27	41	19	87

119	24	25.55216	90.33842	Community	3.7	Wama	*Bambusa vulgaris*	6	44	0	50
120	24			Community	2.6	Wama	*Bambusa vulgaris*	8	30	0	38
121	25	25.54.8110	90.333983	Community	3.0	Wama	*Bambusa vulgaris*	2	15	0	17
122	25			Community	4.7	Wama	*Bambusa vulgaris*	5	20	8	33
123	25			Community	6.5	Wama	*Bambusa vulgaris*	8	17	18	43
124	25			Community	7.4	Wama	*Bambusa vulgaris*	9	24	38	71
125	25			Community	4.2	Wama	*Bambusa vulgaris*	0	9	0	9
126	25			Community	6.5	Wama	*Bambusa vulgaris*	50	10	0	60
127	25			Community	1.9	Wama	*Bambusa vulgaris*	4	6	0	10
128	25			Community	4.0	Watebok	*Bambusa jaintiana*	30	7	0	37
129	25			Community	3.4	Watebok	*Bambusa jaintiana*	30	5	0	35
130	25			Community	3.6	Watebok	*Bambusa jaintiana*	30	4	0	34
131	25			Community	5.4	Watebok	*Bambusa jaintiana*	55	9	0	64
132	25			Community	7.1	Watebok	*Bambusa jaintiana*	84	24	0	108
133	26	25.542703	90.338963	Community	3.9	Wama	*Bambusa vulgaris*	0	33	6	39
134	26			Community	2.6	Wama	*Bambusa vulgaris*	0	12	4	16
135	26			Community	5.6	Wama	*Bambusa vulgaris*	11	33	19	63
136	26			Community	3.4	Wama	*Bambusa vulgaris*	0	16	12	28
137	26			Community	4.8	Watebok	*Bambusa jaintiana*	110	57	0	167
138	26			Community	4.3	Watebok	*Bambusa jaintiana*	37	6	0	43
139	27	25.543965	90.339505	Community	5.0	Wama	*Bambusa vulgaris*	7	8	6	21
140	27			Community	2.9	Wama	*Bambusa vulgaris*	1	5	3	9
141	27			Community	2.5	Wama	*Bambusa vulgaris*	0	37	5	42
142	27			Community	1.7	Wama	*Bambusa vulgaris*	7	11	0	18
143	27			Community	3.4	Wama	*Bambusa vulgaris*	2	26	4	32
144	27			Community	4.9	Wama	*Bambusa vulgaris*	10	30	8	48
145	27			Community	3.2	Wama	*Bambusa vulgaris*	11	20	15	46
146	27			Community	2.8	Wama	*Bambusa vulgaris*	3	18	16	37
147	28	25.552307	90.342974	Community	6.0	Wama	*Bambusa vulgaris*	0	52	11	63
148	28			Community	4.1	Watebok	*Bambusa jaintiana*	32	25	0	57
149	28			Community	7.9	Watebok	*Bambusa jaintiana*	89	45	0	134

150	28			Community	3.3	Watebok	*Bambusa jaintiana*	25	11	0	36
151	29	25.55199	90.33879	Community	7.5	Watebok	*Bambusa jaintiana*	0	88	0	88
152	29			Community	11.1	Watebok	*Bambusa jaintiana*	0	11	54	65
153	29			Community	5.8	Watebok	*Bambusa jaintiana*	12	50	0	62
154	29			Community	5.6	Watebok	*Bambusa jaintiana*	18	75	0	93
155	29			Community	3.3	Watebok	*Bambusa jaintiana*	16	24	0	40
156	29			Community	4.0	Watebok	*Bambusa jaintiana*	27	29	0	56
157	29			Community	4.3	Watebok	*Bambusa jaintiana*	20	58	0	78
158	30	25.548911	90.336648	Community	5.5	Watebok	*Bambusa jaintiana*	0	21	4	25
159	30			Community	2.6	Wama	*Bambusa vulgaris*	0	24	6	30
160	30			Community	6.0	Wama	*Bambusa vulgaris*	0	22	0	22
161	30			Community	6.7	Wama	*Bambusa vulgaris*	19	27	0	46
162	30			Community	4.0	Wama	*Bambusa vulgaris*	0	19	6	25
163	30			Community	2.9	Wama	*Bambusa vulgaris*	0	10	1	11
164	30			Community	7.7	Wama	*Bambusa vulgaris*	27	28	0	55
165	30			Community	4.1	Wama	*Bambusa vulgaris*	0	11	6	17
166	31	25.548644	90.333928	Community	8.0	Wama	*Bambusa vulgaris*	3	18	33	54
167	31			Community	2.8	Wama	*Bambusa vulgaris*	0	15	4	19
168	31			Community	8.4	Wama	*Bambusa vulgaris*	11	36	0	47
169	31			Community	5.4	Wama	*Bambusa vulgaris*	0	14	9	23
170	31			Community	6.0	Wama	*Bambusa vulgaris*	19	13	0	32
171	31			Community	4.0	Wama	*Bambusa vulgaris*	21	5	0	26
172	32	25.544088	90.335037	Community	3.1	Wama	*Bambusa vulgaris*	0	19	8	27
173	32			Community	3.7	Wama	*Bambusa vulgaris*	0	13	17	30
174	32			Community	4.3	Wama	*Bambusa vulgaris*	21	10	12	43
175	32			Community	4.6	Wama	*Bambusa vulgaris*	23	14	19	56
176	33	25.543024	90.336726	Community	2.7	Wama	*Bambusa vulgaris*	0	21	8	29
177	33			Community	2.7	Wama	*Bambusa vulgaris*	0	17	0	17
178	33			Community	3.9	Wama	*Bambusa vulgaris*	0	0	31	31
179	33			Community	5.2	Wama	*Bambusa vulgaris*	0	37	8	45
180	33			Community	4.3	Wama	*Bambusa vulgaris*	0	36	0	36

Sample Plot Data for Non-Clump-Forming Bamboo

Sl. No.	Block	Village	Plot ID	Latitude	Longitude	Strata	Type of Land	Species		Number of Culm in different Girth Classes			
								Local Name	Botanical Name	1-15 (cm)	15-30 (cm)	>30 (cm)	Total
1	Rongram	Oragitok	12	25.554496	90.341833	1	Community	Watre	*Melocanna baccifera*	1216	0	0	1216
2	Rongram	Oragitok	13	25.554571	90.343076	1	Community	Watre	*Melocanna baccifera*	84	0	0	84
3	Rongram	Oragitok	17	25.554266	90.340628	1	Community	Watre	*Melocanna baccifera*	279	49	0	328

Annexure– V Trainings

TRAININGS

1. Health and safety practices to protect workers

1. The Organization shall implement health and safety practices to protect workers from occupational safety and health hazards. These practices shall, proportionate to scale, intensity and risk of management activities, meet or exceed the recommendations of the ILO Code of Practice on Safety and Health in Forestry Work.

2. The smallholder and his or her temporary workers, employees, family members, business associates and volunteers have safe work practices.

3. The smallholder and his or her temporary workers, employees, family members, business associates and volunteers use appropriate safety equipment.

4. The smallholder or their named representative keeps a record of any accidents.
5. The smallholder changes practices that have caused, or will likely cause, accidents in the smallholder's forest.

6. If hunting or other dangerous activities are part of the forestry activities, the smallholder identifies the dangerous activities and implements safety measures to protect the public where hunting or other dangerous activities related to NTFP activities are carried out

2. Health and safety practices to effectively implement the Management Plan

1. The Organization shall demonstrate that workers have job-specific training and supervision to safely and effectively implement the Management Plan and all management activities.

2. The smallholder provides training and supervision so that temporary workers, employees, family members, business associates and volunteers can work safely and effectively in the tasks that they do.

3. Training on Implementation of the Bamboo Forest Management Plan (BFMP): Horseshoe Method

4. Training on Environmental Stewardship, covering key areas such as:

- Biodiversity Conservation
- Water Resource Management
- Soil Protection
- Forest Fire Prevention and Control

5. Training on the Management Plan

1. The Organization shall make publicly available a summary of the management plan free of charge. Excluding confidential information, other relevant components of the management plan shall be made available to affected stakeholders on request, and at cost of reproduction and handling.

2. If requested, the smallholder provides public information from the management plan to a person who requests it at no cost to the requestor.

6. Training of stakeholders for engaging in the Management Plan

1. The Organization shall, proportionate to scale, intensity and risk of management activities, proactively and transparently engage affected stakeholders in its management planning and monitoring processes, and shall engage interested stakeholders on request.

2. The smallholder informs affected and interested stakeholders about management planning and monitoring.

3. If requested, the smallholder carries out culturally appropriate consultation with affected and interested stakeholders.

7. Training on Monitoring Activities

1. The Organizations shall make publicly available a summary of the results of monitoring free of charge, excluding confidential information.
2. If requested, the smallholder provides results of monitoring to a person who requests them at no cost to the requestor.

Annexure– VI Control Form for Regulating Bamboo Yield

Control Form for Regulating Bamboo Yield								
Village Name:		**Block:**			**District:**			
Year:		**Area of Bamboo Forest:** ha						
Sl. No	**Total prescribed yield for the whole year (Number of culms & weight)**	**Harvesting**					**Number of culms destroyed due to fire or illegal felling etc.**	**Remarks**
		Date	**Number of culms harvested**	**Cumulative number of culms harvested**	**Approximate weight of harvested culms**	**Total number of culms harvested in year & estimated weight**		
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

Annexure– VII Self-Declaration on the Conservation and Restoration

SELF-DECLARATION ON THE CONSERVATION AND RESTORATION OF NATIVE ECOSYSTEMS

I _____, the undersigned smallholder, hereby declare my commitment to the responsible management of forest resources within my Management Unit in alignment with the principles of conservation and ecosystem restoration.

In alignment with FSC requirements, I confirm that:

I support the identification and protection of representative sample areas of native ecosystems within the broader landscape in which my bamboo forest is situated.

However, I acknowledge that the area of my bamboo forest is relatively small and therefore cannot independently contain a representative native ecosystem. Despite this, I remain committed to participating in broader conservation initiatives as part of a collective effort.

This commitment reflects my dedication to sustainable forest management that maintains ecological balance, supports biodiversity, and upholds the long-term health of the environment.

Name of Smallholder : _____
Location of Management Unit: _____
Signature : _____
Contact Information : _____
ID Proof Details : _____
Date : _____

Annexure– VIII Self-Declaration on the Protection of Native Species

SELF-DECLARATION ON THE PROTECTION OF NATIVE SPECIES AND BIODIVERSITY

I _____, the undersigned smallholder, affirm my commitment to the conservation of native species**,** their natural genotypes**,** and the overall biological diversity within my forest area.
In accordance with FSC requirements, I declare that:

I have implemented appropriate measures to control hunting, fishing, trapping, and collection activities within my forest area to prevent any harm to native species and their habitats.

These measures aim to ensure the continued existence of naturally occurring native species and to avoid any loss of biodiversity.

This declaration reflects my dedication to responsible and ecologically sound forest management that safeguards biodiversity for current and future generations.

Name of Smallholder : _____
Location of Management Unit: _____
Signature : _____
Contact Information : _____
ID Proof Details : _____
Date : _____

Annexure– IX List of Animals, Birds, Tree Species, NTFPs present in Oragitok

List of Animals and Birds

Sl. No.	Animals and birds
1	Snakes
2	Wild Boars
3	Monkeys
4	Bulbul
5	Fox
6	Red jungle fowl
7	Squirrels

List of Tree Species (in Local Language)

Sl. No.	Tree Species
1	Agilek
2	Agileka
3	Agur
4	Aminggok
5	Amingsep
6	Arimu
7	Bolbit
8	Bolbret
9	Bolchim
10	Bolchiring
11	Bolchu
12	Boldak
13	Boldal
14	Boldret
15	Bolkubok
16	Bolpu
17	Bolsil
18	Chagro
19	Chaku
20	Chambil
21	Chambu
22	Chamisi
23	Danasko

Sl. No.	Tree Species
24	Dodikimchong
25	Dokime
26	Gakgil
27	Gambare
28	Gamsele
29	Gue
30	Jengjil
31	Kimbal
32	Komila
33	Letchu
34	Mau
35	Megong
36	Naspati
37	Pakkram
38	Rokra
39	Sante
40	Sawe
41	Segun
42	Siso
43	Tastpata
44	Tegachu
45	Uribol

List of NTFPs

Sl. No.	NTFPs
1	Mushroom
2	Fern plants
3	Bamboo
4	Broom grass
5	Mushroom

Annexure– X List of BFMC Members

List of BFMC Members for Oragitok village

Sl. No.	Name	Designation	Area (ha)
1	Abal Sangma	Member	10.00
2	Miksington Sangma	Member	2.50
3	Rakkanbirth M.Sangma	Member	2.84
4	Hemosh A. Sangma	Member	4.00
5	Hevingstone A Sangma	Member	3.00
6	Winderbirth Sangma	Member	4.00
7	Manring Sangma	Member	6.00
8	Tenderson Sangma	Member	3.00
9	Dinatson Sangma	Member	4.00
10	Simpo D. Sangma	Member	5.00
11	Tabitha Ch Marak	Member	3.00
12	Eppila A Sangma	Member	3.00

Annexure XI Transect Survey Form
Transect Survey Form

Village …….. District …….

Date …….. Area of the Village ……

Sl No	Observation on Plastic Pollution	Burning of Solid Waste	Open Grazing	Manufacturing Units	Water Pollution	Unauthorized falling of trees	Rare threatened Endangered and Endemic Species	Soil Erosion	Sites of Cultural Importance
1									
2									
3									
4									
5									

Annexure XII Non-Conversion of Natural Forest

Community Member Resolution

Date:
Village:Oragitok Village
Block: Rongram Block
District: West Garo Hills, Meghalaya

It is certified that no conversion of natural forest has taken place in the identified bamboo forest after November 1994. The forest has remained intact in the last 33 years.

Headman (Village Authority):

Name: _____

Signature: _____

Members:

1. Name of smallholder: _____

   Signature: _____

2. Name of smallholder: _____

   Signature: _____

3. Name of smallholder: _____

   Signature: _____

4. Name of smallholder: _____

   Signature: _____

5. Name of smallholder: _____

   Signature: _____

Stakeholder Consultation

Resolution

Date: 17th September 2025
Village: Romba Adinggre, Oragitok Village
Block: Rongram Block
District: West Garo Hills, Meghalaya

In a meeting held on 17thSeptember 2025, the Village Council (Nokma) along with other stakeholders discussed and passed the resolution in connection with sustainable bamboo forest management and certification which are as follows: -

1. Formation of Bamboo Forest Management Committee (BFMC):

The Nokma hereby expresses its willingness and commitment to manage bamboo forests sustainably by forming a Bamboo Forest Management Committee (BFMC).

The VBMC will consist of 5-8 members:

- 1 President
- 1 Secretary
- 1 Treasurer and 4 Executive Members (including at least 2 female member)

Members will be representatives from the village households, Self Help Groups (SHGs), and bamboo-based enterprise if any.

The committee shall be entrusted with the responsibility to:

a) Ensure sustainable management of bamboo forest according to the approved Bamboo Forest Management Plan.

b) Oversee and coordinate all bamboo-related management and certification activities in the Village.

c) Collaborate & cooperate with the facilitating agency, government departments, and certification bodies.

d) Ensure transparent decision-making and equitable benefit-sharing from bamboo resources.

2. Commitment to Environmental Safeguard:

The Nokma and VBMC commit to adhere to the principles of environmental and social safeguards, including:

i. Avoidance of adverse impacts on biodiversity, water sources, and ecological balance.

ii. Promotion of practices that align with **climate resilience, ecosystem restoration**, and **carbon sequestration goals**.

iii. Take all measures to prevent forest fires, if forest fires take place, then make all efforts to control the same at the earliest.

iv. Any bamboo-based enterprise/industry established in the Village should not cause air, water, or sound pollution. There should not be discharge of any harmful chemicals/ substances to the water or soil.

3. Commitment to Social Safeguard:

i. Protection of traditional and cultural rights of all community members.

ii. Ensuring inclusive participation of **vulnerable groups like women, and people with disabilities** in decision-making and benefit-sharing.

iii. Women will be given equal representation in the activities of bamboo management, utilization enterprise etc.

iv. VBMC will ensure equitable sharing of benefits from bamboo forest or its utilization.

4. Creating Awareness

i. The VBMC will mobilise community members about the importance of bamboo management, rule and regulation laid out by the them, certification, and its benefit in the village.

ii. Fire safety tips.

iii. Sustainable bamboo harvesting.

iv. Environmental and Ecology

5. Free, prior and informed consent (EPIC)

All the community members of the Oragitok village have been explained about the objectives and management activities including certification. All their queries have also been answered to their satisfaction. All this was done in the meeting held on the 17th September 2025 at Oragitok village. At the end of the meeting the community members offer their consent to the bamboo management initiatives in the village and also to the certification.

Signature	**Signature**	**Signature**
Headman	**Secretary**	**Treasurer**
Oragitok	**Oragitok**	**Oragitok**

List of participants present in the stakeholder meeting with Oragitok Village Council held on the 17th September,

Sl .No.	Name	Male/ Female	Designation	Signature
1	Shri, Bronwinch Marak	M		
2	" Anumsingh N. Marak	M		
3	" Gretingsbirth D. Momin	M		
4	" Hevingstone A Sangma	M		
5	" Phillatson Marak	M		
6	" Chrea ecesol Sangma	M		
7	Smt Rikmera Ch Marak	F		
8	Smt Silphamery Ch Marak	F		
9	" Lucina Ch Marak	F	VEC Secretary	
10	" Armoni A Sangma	"		
11	" Eppilla A Sangma	"		EAS
12	Mikesington Sangma	F		
13	Luther A Sangma	F		
14	Winderbirth M. Sangma	F		
15	Klife Ch Mark	M	(Secy Sec)	
16	Barkesh R. Marak	M	(VCF)	
17	Salnang K. Sangma	M	DPM, MoyLIFE, WCH	
18	Kankhaiya Ch Marak	F		
19	Mikal Ch Marak	M		
20	Tenderson Sangma	M		
21	Rilimkari T. Sangma	M		
22	Jalseng S. Sangma	M		
23	Janjing Ch Marak			
24	Silvera N. Sangma	F	VEC president	
25	Lukjam Ch Marak	F		
26	Manjima A Sangma	F	M	
27	Soshin Ch Marak	F		





Stakeholder Consultation for bamboo Forest Management Plan in Oragitok village
17th September 2025

Annexure – XIV Memorandum of Understanding (MoU)

MEMORANDUM OF UNDERSTANDING

BETWEEN

CoE (NRM & SL)-MEGHALAYA BASIN MANAGEMENT AGENCY (MBMA)

AND

BAMBOO FOREST MANAGEMENT COMMITTEE (BFMC) OF _____ VILLAGE FOR FSC CERTIFICATION OF BAMBOO FORESTS IN MEGHALAYA

This Memorandum of Understanding (MoU) is made and entered into as of _____ day of _____ 2026 ("Effective Date"):

BY AND BETWEEN

1. **Meghalaya Basin Management Agency (MBMA)-Centre of Excellence for NRM & Sustainable Livelihoods (CoE-NRM & SL)** referred to as the "Group Entity/ MBMA-CoE (NRM & SL)".

AND

2. The **Bamboo Forest Management Committee (BFMC)**, also functioning as the Resource Management Unit (RMU) for the designated area of _____, hereinafter referred to as the "BFMC/ RMU".

1. BACKGROUND AND PURPOSE

Meghalaya is endowed with rich bamboo resources, covering a significant portion of its geographical area. This resource is deeply intertwined with the indigenous communities of the State and although it is a rapidly renewable resource, increasing market demands has led to unscientific harvesting, over-exploitation and supply chain fragmentation. In this context, it becomes essential for a globally recognized, community-aligned framework to validate sustainable management practices so that the resource may serve as a long-term benefit to the communities.

By introducing Forest Stewardship Council (FSC) certification to Meghalaya's bamboo sector, the State can systematically transition from unregulated extraction to a scientifically backed, traceable, and economically rewarding green value chain

The primary objective of this MoU is to establish a collaboration for achieving and maintaining FSC Certification for Bamboo Forests in Meghalaya. This agreement outlines the mandatory internal monitoring, audit protocols, and governance standards required to ensure strict compliance with FSC sustainability principles.

2. SCOPE OF COLLABORATION UNDER THE MOU

i. The Group Entity (GE) will guide, supervise, train and hand-hold the RMU in all matters related to FSC Certification and follow-up actions.

ii. Conduct a routine internal monitoring audit of the BFMC/ RMU at least once every calendar year.

iii. Conducting comprehensive, district-wise resource mapping to identify key commercial bamboo species and estimate harvestable stock.

iv. Establish clear guidelines to align FSC requirements with community-centric land tenure systems, identifying community forests, clan lands and village council-managed areas.

v. Adapting the FSC Standard for India to the local socio-ecological context of Meghalaya, ensuring zero conversion of natural forests and the preservation of biodiversity.

vi. Mapping the custody chain from the bamboo forests to the transit point for collection by the vendors.

vii. Internal monitoring officials designated by CoE (NRM & SL)-MBMA will conduct comprehensive site visits to evaluate operational compliance.

3. ROLES AND RESPONSIBILITIES

3.1. CoE (NRM & SL)-MBMA/ Group Entity shall:

i. The GE acts as the body that officially holds and renew the Forest Management (FM) certificates on behalf of the Resource Management Units (RMUs).

ii. The GE is responsible for ensuring that all group members comply with FSC RFSS-Forest Management standards.

iii. It shall act as the liaison between the BFMC/ RMU, the certification body (FSC) and other outside agencies.

iv. Thoroughly conduct internal audits, document and report on the following parameters during their routine visit:

a. Maintain written procedures for managing the group and a public policy of commitment to FSC Principles and Criteria.

b. Verify whether all bamboo harvesting and forest management activities are strictly aligned with the approved management plan.

c. Assess the implementation of all community rights protections, fair labour practices and occupational safety measures for forest workers.

d. Inspect account books, vouchers and financial ledgers to ensure proper, transparent bookkeeping is actively maintained.

e. Verify that biodiversity protection measures, soil and water conservation efforts and waste management practices are observed as prescribed.

f. Review whether any complaints regarding malpractice (such as illegal felling of bamboo, financial discrepancies, unauthorized trade, etc.) have been received, and evaluate if the BFMC took timely, suitable corrective action.

g. Inspect general office registers, verify transit/ depot check-gate management workflows, and assess the implementation of training schedules for local communities.

h. Translates technical standard requirements into everyday language, training farmers on sustainable harvesting techniques, ecosystem preservation, and safety standards.

i. Help in formulating long-term forest management and environmental impact assessment strategies tailored to local bamboo species.

3.2. BFMC / RMU

To maintain eligibility within the FSC certification cluster, the BFMC/ RMU agrees to:

i. The RMU is expected to follow all the directions and advisories issued by CoE.

ii. The RMU is responsible to implement sustainable forest management practices on behalf of members, ensuring compliance with FSC Principles and Criteria.

iii. Ensure that their management units are not included in any other FSC certificate.

iv. Maintain updated registers for accounts, grievance logs, and daily forest operations.

v. Provide unrestricted access to forest sites, maintain administrative records and provide necessary support during internal audit by the GE.

vi. Act immediately on any non-compliance or corrective action requests issued by the GE.

vii. Implementing a documented, regular (annual) monitoring and internal audit system to verify that management units continue to comply with FSC requirements.

viii. Establishing a tracking system to ensure that non-certified material is not mixed with FSC-certified material, and that all bamboo can be traced from the forest to the point of first sale.

ix. Ensuring all forest workers and community members operating in the RMU receive necessary training, supervision, and safety protection.

x. Maintain records of forest management activities, including harvest volumes, planting, and sales of FSC-certified material, for at least five years.

xi. Actively engaging with local communities and other affected parties to identify and resolve conflicts over tenure, use rights, and management impacts.

xii. Report every matter whenever deviations from the BFMP or any significant matter in connection with certification process.

4. BREACH AND MALPRACTICE CONSEQUENCES

If an internal audit reveals evidence of unaddressed malpractice—including but not limited to financial discrepancies, ecological damage or standard safety violations—the GE reserves the right to recommend corrective measures or even suspend the specific BFMC/ RMU from the FSC Certification Group until formal remediation is verified and, in the extreme, terminate the MoU.

5. VALIDITY AND AMENDMENTS

This MoU shall remain valid for a period of **10 (ten) years** from the date of signing. It may be amended, modified, or extended at any time by the mutual written consent of both Parties.

IN WITNESS WHEREOF, the Parties hereto have signed this Memorandum of Understanding on the day, month, and year first above written.

6. SIGNATURES AND WITNESSES

For the Group Entity (MBMA-CoE):

Name: _____

Designation: _____

Signature: _____

For the BFMC/ RMU:

Name: _____

Designation: _____

Signature: _____

In the presence of Witnesses:

In the presence of:

1. _____

2. _____

Annexure – XV Participatory Rural Appraisal (PRA) for HCV

Participatory Rural Appraisal (PRA)

High Conservation Value (HCV) Questionnaire

Village: Oragitok Block: Rongram

District: West Garo Hills Date: 17/7/2026

No of Participants: 13

A. Rare, Endangered, Threatened Plant Species

1. Are there any rare or endangered plant species found in the village forest or its vicinity?

Citrus indica (Indian Wild Orange)

2. What are their local names?

Memang narang

3. Where are these plants usually found?

Trees: *Schima wallichii, Grewia species, Gmelina arborea, Eurya accuminata, Toona ciliata*

Shrubs/ Herbs: *Phyllanthus species*, Samitchip, Mana muni.

5. Are these plants becoming less common over time?

No

6. Are there any rare orchid species in the forest?

No

7. Are there any medicinal plants that have become difficult to find over a period of time?

Neem, Sisuchi.

B. Wildlife and Biodiversity

1. Which bird species are commonly found?

Red jungle fowl, Barbet, Black drongo, White-crested laughingthrush, Swiftlet

2. Are there any rare or migratory birds?

None

3. Which wild mammals occur in the forest?

Wild boar nest, porcupine footprints, yellow-throated marten scats, civet.

4. Are snakes, monitor lizards, or geckos present?

Common green pit viper, chameleon.

5. Have you sighted wildlife or observed footprints, scats, burrows, nests, or feeding signs?

Wild boar nest, porcupine footprints

6. Are there wildlife corridors or important habitats?

Simsang river area

C. Cultural and Historical Sites

1. Are there any sacred forests, sacred groves, or sacred trees? And how old these trees are?

'A.song Kosi' is found near Simsang river

2. Are there old churches, monuments, memorial stones, or traditional worship places or remains of them?

None

3. Approximately how old are these sites?

Not applicable

D. Water Resources

1. Are there natural springs, streams, rivers, or wetlands?

The natural springs found in the area are Chianing. The natural streams are Malsam, Wa.ge, Dilwang, and Sokua.

2. Are they perennial or seasonal?

All the water sources are perennial

3. Have any springs dried up?

None

4. Are there water scarcity or water quality issues?

The community has mentioned that due to a decrease in forest cover, the water availability has decreased.

E. Invasive Alien Species

1. Are invasive plant species present?

Yes*. Mikania macrantha, Mucuna, Lantana camara.*

2. Which invasive species are common?

Mikania macrantha, Mucuna, Lantana camara

3. Do they affect bamboo growth or forest regeneration?

Yes, Mucuna species is said to affect bamboo growth or forest regeneration.

F. Non-Timber Forest Products (NTFPs)

1. Which NTFPs are collected?

Honey and wild fruits- *Baccaurea ramiflora, Haematocarpus validus*

2. Which of them are most important for household income?

The household incomes are mostly obtained from shifting cultivation and wild fruits

3. Has availability declined over time?

It is the same.

G. Hunting and Wildlife Pressure

1. Does hunting occur in the village?

No, due to the strict rules laid by the Forest and Wildlife department.

2. Are there village regulations on hunting?

None. But the community follows the rules laid by the Forest and Wildlife department.

H. Additional Environmental Concerns

1. Are there landslides, soil erosion, gullies, illegal logging, or mining impacts?

Yes, there are minor impacts due to landslides and soil erosion. Illegal logging mostly happens due to theft from neighboring villages.

2. Is bamboo regeneration satisfactory?

Yes, it is satisfactory.

I. Community Conservation Practices

1. Does the village protect certain forest areas?

None

2. Are there community conservation rules?

No selling and felling of logs. It is allowed only for community consumption.

3. How are these rules enforced?

The community reserves and fish sanctuaries are protected through the Headman and its members. A fine of INR 20,000 is imposed for cutting and the witness is given a compensation of INR 1000 per case. The witness informs the community Headman or the volunteers.

J. Community Conservation Practices

1. Is there any kind of pollution in the village?

Yes.

2. If so, what are the causes?

The pollution observed in the village of Oragitok village is air pollution from shifting cultivation and developmental activities as road construction.

3. Do you see that Bamboo Forest Management in the village will cause any kind of Environmental damage in the village?

None.

Annexure XVI Participatory Rural Appraisal (PRA) for EI
Participatory Rural Appraisal (PRA)

Environmental Impact Assessment Questionnaire

Village: Oragitok Block: Rongram District: West Garo Hills

Date: 17/7/26 No. of participants: 13

A. Soil Erosion

1. Is soil erosion observed?
   Yes/No Answer: Yes observed
2. Main causes
   Answer: Rain, wind, uprooting of mature trees, slope
3. Conservation measures
   Answer: None

B. Mining / Quarrying

1. Mining/quarrying present?
   Answer: None
2. Type

Answer: No

3. Environmental impacts

Answer: No

4. Legal/Illegal

Answer: No

C. Forest Fire

1. Occurred in last 5 years?

Answer: Not observed

2. Frequency

Answer: No

3. Area burnt

Answer: No

4. Causes

Answer: No

5. Resources damage

Answer: No

6. Fire prevention measures
   Answer: None

D. Landslide

1. Landslide occurrence

Answer: Yes

2. Frequency

Answer: Low

3. Causes

Answer: Heavy rain

4. Damage

Answer: Roads

5. Mitigation measures

Answer: None

E. Shifting Cultivation

1. Whether practiced?

Answer: Yes, shifting cultivation is practiced

2. Number of Households involved Answer: 50 households practice

3. Area (ha)

Answer: 150 ha

4. Current cycle in years

Answer: 7-8 years

5. Previous cycle

Answer:

6. Environmental impacts

Answer: Increase in temperature, more erosion in jhum area

F. Any Plant/ Small-scale Industries

1. Type

Answer: No

2. Industries

Answer: No

3. Employment

Answer: No

4. Environmental impacts

Answer: No

G. Charcoal Making

1. Whether practiced?

Answer: No

2. Households involved

Answer: No

3. People involved

Answer: No

4. Raw material source

Answer: No

5. Production

Answer: No

6. Market

Answer: No

7. Environmental impacts

Answer: No

H. Overall Environmental Impact Ranking

Issue	High	Medium	Low	None
Soil erosion			✓	
Mining				✓
Quarrying				✓
Forest fire				✓
Landslide			✓	
Shifting cultivation			✓	
Small industries				✓
Charcoal making				✓

I. Community Recommendations

a. Major environmental problems

Increase in temperature, monoculture of arecanut species, decrease in no of mature trees

b. Suggested mitigation measures

Plantation of native trees, fruit-bearing species; livestock farming can decrease jhum activity

c. Organizations to support

MBMA, State departments- Agriculture, Horticulture, Soil department

d. Other suggestions

Reduce plastic pollution by local tourists through sensitizing and setting up waste bins.

Annexure XVIII Photos of Participatory Rural Appraisal (PRA) and transect survey fieldwork for High Conservation Value (HCV) in Oragitok Village








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ORAGITOK





Water bodies in Oragitok villages



Rongram chiring (Stream)



Domesal chiring (Stream)

The Centre of Excellence (CoE) for
Natural Resource Management & Sustainable
Livelihoods (NRM & SL) under the
Meghalaya Basin Development Authority (MBDA)
is an institution devoted for strengthening
Natural Resource Management (NRM)
in Meghalaya and beyond.

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