Exploring Village Common Forest (VCF): Assessing the Impacts of Climate Change and Sustainable Management through Indigenous Community Participation



Reconnaissance Survey Report

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About the Report

The reconnaissance survey report is the output of the initial survey conducted across the three hill districts of Chittagong Hill Tracts (CHT) region from 30 July – 3 August 2023 under the research titled "Exploring Village Common Forest (VCF): Assessing the Impacts of Climate Change and Sustainable Management through Indigenous Community's Participation" of the CAPRES (Capacity strengthening of multi-actors to limit climate change impacts and enhance resilience) project, supported by SIDA (Swedish International Development Cooperation Agency).

The prime focus of the research study is to identify the climate-induced challenges related to the livelihoods of the local inhabitants of the Chittagong hill tracts region and to understand its influence and dependency on natural resources (such as forest-based resources). Therefore, the reconnaissance survey was initiated to gather the preliminary information and refine the study design. Throughout the field activities, indigenous communities from the three hill districts shared their views regarding the temperature, precipitation pattern changes, seasonal variation and anomalies, and relevant climate-induced challenges affecting their livelihood, agricultural production, income, and overall well-being. The research also focused on identifying the dependency on natural resources, specifically forest-based resources from the VCFs (Village Common Forest) by the local communities amidst the livelihood challenges. Furthermore, the alternative income generation (AIG) sources were also discussed and mapped during this visit through a community-led approach. In terms of dependency on Village Common Forest (VCF) resources as a source of alternative livelihood, the reconnaissance survey identified that the scenario differs across the VCFs. Nonetheless, climate-induced challenges pose a serious threat to the livelihood of indigenous communities, and it leads them to become dependent on forest resources, be it on a small scale or wider scale.



List of Acronyms

AIG : Alternative Income Generation

CAPRES : Capacity strengthening of multi-actors to limit climate change impacts and

enhance resilience

CHT : Chittagong Hill Tracts

FGD : Focus Group Discussion

ICCCAD : International Centre for Climate Change and Development

INGO : International Non-Government Organization

KI : Key Informant

KII : Key Informant Interview

NGO: Non-Government Organization

NTFP : Non-Timber Forest Products

SIDA : Swedish International Development Cooperation Agency

VCF : Village Common Forest

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I. Introduction

I.I Background

The Chittagong Hill Tracts (CHT) region located in the south-eastern part of Bangladesh is recognized for its unique geography, biodiversity, cultural heritage, and natural beauty. The region is home to more than eleven indigenous communities, including the Chakma, Marma, Tripura, Tanchangya, Mro, Lushai, Khumi, Chak, Khyang, Bawm, and Pankhuas (Hossain, 2013). The indigenous communities living in the remote parts of the region shares a divine connection with the forests and rely heavily on forest resources for their sustenance (Jashimuddin & Inoue, 2012). However, the mismanagement of forest resources in CHT over the years has led to deforestation, and loss of biodiversity (Baten et al., 2010). The genesis of this mismanagement can be traced back to the colonial era when the local indigenous communities lost their accessibility to forest resources as four-fifths of the forest land was declared as reserved forests (RF) by the authority in the early 1900s (Roy, 2002). This exclusion and top-down approach to forest management failed to conserve forest resources in the long run, resulting in a conflict of interest between local communities and the forest department (Nath and Inoue, 2010). As a result, the indigenous people embraced traditional resource management practices to safeguard their remaining scarce forest resources, which are known as Mouza Reserves or Village Common Forests (VCFs) (Chowdhury et al., 2018). Given the fact that the government does not acknowledge these VCFs and is subject to tenure insecurity, the common forests are now being degraded due to overexploitation of forest resources through privatizing for agriculture, horticulture, and plantation (Rasul & Karki, 2007).

Additionally, the local communities also frequently confront natural hazards such as landslides, flash flooding, and other climatic anomalies (Ahmed, 2021). Over the last few decades, the weather pattern in the CHT has changed, and there has been a decrease in the frequency of rainfall (Haque et al., 2021). A study conducted by Manusher Jonno Foundation (2020) analyzed rainfall data from 1988 to 2017 and found that the frequency of heavy rainfall (≥89 mm) is decreasing in CHT. Again, both the literature review and on-field study report highlight the rise of temperature and prolonged arid conditions influencing the rainfed agricultural practices of the indigenous communities. The scarcity of water, coupled with prolonged arid conditions is taking a great toll on the livelihood and health of the locals, and degrading the biodiversity (Chowdhury et al., 2017).

In the face of livelihood crisis and water scarcity, the VCFs have been playing a vital role. VCFs protect the water bodies, and this community-based conservation approach has been proven to be effective in ensuring the sustainable flow of water (Chowdhury et al.,2017). Furthermore, the VCFs fulfill the environmental, medicinal, cultural, and religious needs of the indigenous people.VCF facilitates conserving forest resources, supporting livelihood, and creating alternative income generation options (Baten et al., 2010, Misbahuzzaman & Smith-Hall, 2015).

In VCFs, need-based resource use and extraction are practiced to protect natural resources from depletion (Roy, 2000; Saha, 2010; Islam et al., 2009). Besides, the VCFs are established based on customary rules and regulations, serving as compelling illustrations of successful community-based forest management practices (Baten et al., 2010; Jashimuddin & Inoue, 2012). A wide range of scholars acknowledge VCF as a sustainable forest management model led by indigenous communities. But with growing social, political, and environmental challenges, the unsustainable resource consumption of VCFs is being observed (Chowdhury et al., 2018).

The communities consider the forest land as sacred ground, but the climatic impacts on agricultural practice and livelihood compel the local communities to choose unsustainable means of resource extraction especially from the VCF's. Therefore, the study aims to identify the interconnectivity from climatic impacts to natural resource depletion and explore the alternative livelihood options along with local adaptation interventions for a comprehensive natural resource management.

1.2 The Objective of the Research

- Identifying the impacts of climate change on the livelihood of the local inhabitants in CHT region.
- Assess and document local perception regarding the dependency on forest resources, governance, and sustainable management of the VCFs.

1.3 The Objective of the Reconnaissance Survey

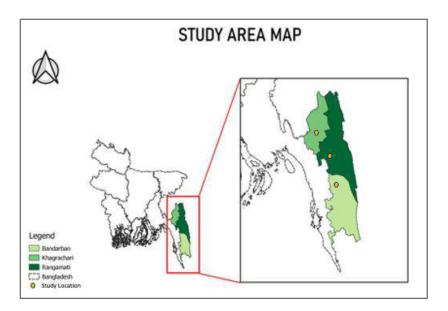
• To validate the literature study and assess the feasibility of conducting the final field activities involving the local communities.

2. Methodology

2.1 Study Area

The reconnaissance study was carried out in Chittagong Hill Tracts (CHT) region; covering the three hill districts Khagrachari, Rangamati and Bandarban. While the local partners from all the three hill districts were interviewed during the study, extensive field research was conducted with the local communities in two VCFs from Khagrachari (Dinomoni Karbari VCF in Komolchari), and Rangmati (Gilachari) districts.

Figure 1: Study Area Map



2.2 Sample Selection and Size

Prior to the field visits, a stakeholder mapping process was initiated as per the expertise relevant to the field. Purposing sampling was carried out to select the Key Informant Interviews (KIIs). Later, based on the suggestion and advice of the KII's the local communities were selected to conduct the Focus Group Discussions (FGDs). During the reconnaissance study, in total 2 FGDs and 8 KIIs were carried out to understand the present challenges that the local communities surrounding the VCFs are enduring in the face of climate change.

2.3 Data Analysis

Data collected from the FGD and KIIs were qualitative in manner, and they were analyzed perusing thematic analysis (Vaismoradi et al., 2013).

KII Data: The perspective of the experts and local organizations were captured through KIIs, and later the collected information was transcribed and categorized [Table I].

FGD Data: During FGDs, the local communities illustrate their perception through ranking, Likert scaling, and mapping. Later the results of the two FGD's were illustrated and digitized [Tables 2 and 3].

3. Initial Findings and Discussion

Table 1: Location Specific Challenges

	_	Locations					
Factors	Category	Khagrachari	Rangamati	Bandarbun			
		Impact Level (High = +++, Medium = ++, Low = +)					
Increase Temperature		+++	++	+++			
Erratic Rainfall	Climatic and	+++	+++	+++			
Flash Floods	Environmental	++	+	+			
Landslides		+++	++	++			
Water Scarcity		+++	+++	+++			
Ambiguous Land Status		++	++	+++			
Elite Captures	Socio-Economic	++	++	++			
Political Dynamics and Instability		++	++	++			
Shifting Tradition to Mono-Culture		+	++	++			
Lack of AIG sources		++	++	+++			
Population Pressure		+	+	++			

Note: The purpose of the research is to identify the impacts of climate disasters on the livelihood and well-being of local community; and perceive how it influences the dependency on the VCFs due to the lack of AlGs. Therefore, the study inclusively considers the climatic and environmental factors and challenges that were documented from the literature review, Klls, and FGDs during the reconnaissance survey and scoping exercise.

3.1 Climate Change and Water Scarcity

Like different regions of Bangladesh, people from the Chittagong Hill Tracts (CHT) region also perceived climate change as a formidable challenge that has significantly influenced their way of life. During the FGDs, the local communities expressed their concern about rising temperature since the last two decades [Figure 2]. The most noticeable alterations are observed in rainfall patterns, and the increasing occurrence of droughts. The differences drawn by local people show a major decline in rainfall levels, coupled with a surge in drought occurrences. The lack of rainfall exacerbates the existing water scarcity issues within the CHT region, with many streams drying up for extended periods throughout the year; even during the monsoon season as rainfall pattern has shifted.

Table 2: Hazard Calendar Prepared by the Local Communities (Reconnaissance Survey, 2023)

Hazards	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperature	•	•	••	••	•••	••	••	••	••	••	••	•••
Rainfall	•	•	•	••	•••	•••	••••	••••	•••	••	•	•
Drought	•	•	•	•••	••	•	•	••	•••	•	•	•
Landslide					•	•	•••	•	•			
Storm				•••	•	•						

Current20 years back

Note: Each dot represents the frequency of occurrence where one dot means low occurrence. The absence of a dot denotes 'No Occurrence'.

Figure 2: Community-Led Vulnerability Assessment and Hazard Mapping





3.2 Water Resource Management and Challenges

From extensive literature review and FGDs, it was recorded that the local people mainly conserve the VCFs for watershed management. They believe, if they conserve the VCFs they could get water continuously from the waterfalls. However, in the last few years there has been less water flow through the streams due to the erratic and decrease in the rainfall pattern. Besides, they have also blamed the rapid deforestation and stone extraction to be the other major reasons for this phenomenon. Consequently, many local communities had to migrate to other places in quest of water to ensure their livelihood and survival. Another issue that came to light during the survey, was the issue of menstrual health and hygiene management of women in that area. It was reported that, drying up streams bear negative consequences for reproductive health of women. Besides, the women need to walk for miles to fetch fresh water which impacts their physical health, reduces their leisure time, and increases the intensity of unpaid care work.

Figure 3: Water Pit to Collect Stream Water



3.3 Water, Agriculture and Livelihood

The population study opined that, over the years the temperature had increased, and the rainfall pattern has become erratic with the water reserves drying up simultaneously. Due to this, the irrigation facilities are hampered. It was reported that the agricultural yield dropped from 50 Aari (A Measurement Unit of the local communities, I Aari = 8-10 Kilo gram) to 20-25 Aari from I Aari seed in recent times. Such decline has greatly deteriorated their income earning capacities and livelihood of the local communities.

5 2 0 VCF's Forest's Jum **Fruits** Livelihood Agriculture resource Resource Cultivation Garden Diversity Dependency Dependency Past Practice Current Practice

Table 3: Climate Change Impact on Livelihood Perceived by Local Communities (Reconnaissance Survey, 2023)

3.4 Livelihood, Natural Resource Extraction and the States of VCF

For centuries, the indigenous communities in the CHT have depended on forest resources for their livelihood. They have been collecting bamboo, medicinal plants, fruits, and wild animals for food and other needs. However, due to limited accessibility to state forests, they are now increasingly dependent on the resources of Village Common Forests (VCFs) [Figure 5]. Since VCFs are managed by the communities themselves, the rules for resource extraction vary from VCF to VCF. In some cases, all non-timber forest products (NTFPs) are allowed to be extracted, while in others, only a limited number of products are permitted. Bamboo is typically harvested from VCFs, but other resources are extracted according to the needs of the community and the decisions of the Karbari (traditional community leaders) and village Headman.

3.5 Social Challenges: Greed, Illegal Practice, Migration, and Conflicts

As VCFs are not acknowledged by the government, these forest resources are subject to exploitation, and degradation by both internal and external forces. Besides, now the local communities are shifting from their traditional cultivation practices to monoculture practices considering the economic benefits. However, this practice in turn threatens the ecosystem. Furthermore, teak and rubber plantations are widely observed. Though they are economically profitable they bear negative consequences by consuming too many nutrients from the soil and lowering the water table. This is leading to the loss of local species and influencing the stream flow. Moreover, climate-induced displaced people settling in CHT, increase the population pressure that results in depletion of VCF and increasing conflicts between Bengalis and indigenous groups.

4. Way Forward

The findings of the reconnaissance survey suggest that climate change has negatively impacted the livelihood of indigenous communities and influencing the dependency on VCF resources. However, the scenario varies from VCF to VCF. Additionally, a detailed study is required to understand and co-relate the aspects extensively.

5. Acknowledgement

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7. Annex

I. Key Informant Details

Key Informants	Rationale
UNDP Bangladesh	"Chattogram Hill Tracts Watershed Co-Management Activity"
Arannayk Foundation	Arannayk: Chittagong Hill Tracts (CHT) Communities Forest Landscape Restoration (CFLR) Project
Zabarang Kalyan Samity	https://zabarangbd.org/
Taungya	https://taungya.org/
Thazingdong	https://www.tahzingdong.org/
CRDC: Community Resource Development Center	CRDC works focusing on indigenous community of Bandarban.

II. Hazard Mapping and Disaster Ranking Led by the Communities





III. Sample Questionnaire (Reconnaissance Study)

Segment A: Stakeholder perception: Climate-induced impacts and local needs

- I. What is the significant climate-induced changes you have observed in Chittagong Hill Tracts (CHTs)? (পার্বত্য চট্টগ্রামে জলবায়ু জনিত উল্লেখযোগ্য পরিবর্তনগুলো আপনি কি কি লক্ষ্য করেছেন?)
- 2. How does climate change impact the lives and livelihood of the indigenous communities? (জলবায়ু পরিবর্তন আদিবাসী সম্প্রদায়ের জীবন ও জীবিকাকে কীভাবে প্রভাবিত করে?)
- 3. In your opinion, what are the primary and alternative income sources of indigenous community? Does climate change pose any threat to these sources? (আপনার মতে, আদিবাসী সম্প্রদায়ের প্রাথমিক ও বিকল্প আয়ের উৎস কী কী? জলবায়ু পরিবর্তন কি এসব উৎসের জন্য কোনো হুমকি?)
- 4. How is the community adapting to such changes? (সম্প্রদায় কিভাবে এই ধরনের পরিবর্তনের সাথে থাপ থাইয়ে নিচ্ছে?)
- 5. As forest-based resources support the communities to fulfill their needs, how does climate change affect the forest resources? (যেহেতু বন-ভিত্তিক সংস্থানগুলি সম্প্রদায়গুলিকে তাদের চাহিদা পূরণে সহায়তা করে, জলবায়ু পরিবর্তন কীভাবে বন সম্পদকে প্রভাবিত করে?)

Segment B: Addressing challenges through project

- I. What are the objectives behind undertaking this project? (এই প্রকল্প গ্রহণের পিছনে উদ্দেশ্য কী?)
- 2. What are the project activities that you have been undertaking to address the challenges faced by the indigenous communities? (আদিবাসী সম্প্রদায়ের মুখোমুখি হওয়া চ্যালেঞ্জগুলি মোকাবেলার জন্য আপনি কী কী প্রকল্প কার্যক্রম গ্রহণ করছেন?)

Segment C: Community involvement

- I. How did you identify the needs of the communities and inform the community regarding the project initiatives? (আপনি কীভাবে সম্প্রদায়ের চাহিদাগুলি সনাক্ত করেছেন এবং প্রকল্পের উদ্যোগসম্পর্কে সম্প্রদায়কে অবহিত করেছেন?)
- 2. What was the process of identifying the beneficiaries? What was the ratio of male/female beneficiaries? (সুবিধাভোগীদের চিহ্নিত করার প্রক্রিয়াটি কী ছিল? পুরুষ/মহিলা সুবিধাভোগীদের অনুপাত কত ছিল?)
- 3. How did you involve the community during the project? (প্রকল্পের সময় আপনি কীভাবে সম্প্রদায়কে সম্পৃক্ত করেছিলেন?)
- 4. How did the project consider indigenous knowledge in designing the initiatives? (প্রকল্পটি উদ্যোগ নেওয়ার ক্ষেত্রে আদিবাসী জ্ঞানকে কীভাবে বিবেচনা করেছিল?)

Segment D: Project Evaluation

- I. What are the indicators for evaluating the project outcomes? (প্রকল্পের ফলাফল মূল্যায়নের জন্য সূচকগুলি কী কী?)
- 2. What are the objectives that have been achieved through the project so far? (এই প্রকল্পের মাধ্যমে এখন পর্যন্ত কী কী লক্ষ্য অর্জন করা হয়েছে?)
- 3. What is the framework used to monitor and evaluate the project? (প্রকল্পটি নিরীক্ষণ এবং মূল্যায়নের জন্য ব্যবহৃত কাঠামোটি কী?)

Segment E: Learnings and way forward

- What kind of challenges did the project team face while undertaking the project?
 প্রেকল্পটি গ্রহণ করার সময় প্রজেক্ট টীম কী ধরণের চ্যালেঞ্জের মুখোমুখি হয়েছিল?)
- 2. How do you plan to disseminate the project learnings? (আপনি কীভাবে প্রকল্পের শিক্ষাগুলি মানুষকে অবগত করার পরিকল্পনা করছেন?)
- 3. Is there any plan to scale up the project initiatives? If so, then how do you plan to do it? (প্রকল্পের উদ্যোগ বর্ধিত করার কোনো পরিকল্পনা আছে কি? যদি তাই হয়, তাহলে আপনি কীভাবে এটি করার পরিকল্পনা করছেন?)