Plan Vivo

Improving livelihoods, restoring ecosystems

2017 Plan Vivo Annual Report

KHASI HILLS COMMUNITY REDD+ PROJECT

Submitted by

Ka Synjuk Ki Hima Arliang Wah Umiam
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Title of Project: Khasi Community REDD+ Project
Annual Report Year: 2017
Summary of Project

Project overview	
Reporting period	1st of January – 31st of December 2017
Geographical areas	East Khasi Hills, India
Technical specifications in use	REDD+ and ANR

Project indicators	Historical (2012 - 2016)	Added/ Issued this period (2017)	Total
No. of smallholder households with PES agreements	0	0	0
No. of community groups with PES agreements (where applicable)	62	0	62
Approximate number of households (or individuals) in these community groups	4,357 (ca. 25,270 individuals)	0	4,357 (ca. 25,270 individuals)
Area under management (ha) where PES agreements are in place	9,270 ha REDD 1,392 ha ANR	8 ha ANR	9,270 ha REDD 1,401 ha ANR
Total PES payments made to participants (USD)	$58,621	$23,047	$81,668
Investment in forest conservation and management	$57,217	$14,251	$71,468
Total sum held in trust for future PES payments (USD)			$ 97,196
Allocation to Plan Vivo buffer (tCO_2)	44,654	9,920	54,517
Saleable emissions reductions achieved (tCO_2)	177,577	39,680	217,257
Unsold Stock at time of Submission (PVC)			
2012			1,644
2014			2,839
2016			27,076
Total			31,559
Plan Vivo Certificates (PVCs) issued to date			118,404
Plan Vivo Certificates requested for issuance (2012-2016 Vintage)			10,000
Plan Vivo Certificates available for future issuance			88,849
Total PVCs issued (including this report) (including 2017 issuance)			128,404

Part A: Project updates

- Forest carbon stock change in degraded open forests increased by 2.93 tCo2 per hectare between 2016 and 2017 based on forest plot surveys. This is considerably greater than the project's initial projections of 1 tCO2 per hectare showing community fire control and grazing protection is facilitating accelerated reforestation.
- With feedback from Plan Vivo, the team revised Table 4 and added a narrative to summarize how the project is meeting its targets and impacts with specific emphasis on the drivers of deforestation.

A1: Key events

1) Community Action to control forest fires (2012-2017) and awareness raising regarding the rapid mobilization to halt outbreaks have been extremely effective in reducing forest fires. The reduction in burnt area is tracked by youth volunteers by measuring the area burned after forest fire. Carbon emissions are thus reduced, allowing for recovery of biodiversity, and improved hydrological function of streams and springs.

2) Home Based Nursery Program is supporting families to establish seedling nurseries with local species. Dozens of household nurseries are producing saplings for the regeneration of open and degraded forests with valuable indigenous species. The nursery program also provides an income generating activity which the households can take up after gaining expertise.

3) The payments from carbon sales also support the community grant program which provides 59 villages out of 62 with a grant of $396 for a development project which the community council chooses. Approximately 20% of the villages choose to improve their captive water sources for various uses e.g. drinking water, washing by building a concrete enclosure around springs and water sources to protect it from pollution and contamination.

4) The project is distributing piglets, poultry and temperate fruit saplings through subsidies from Synjuk, convergence and direct grants with Government departments of Meghalaya and Central Government to uplift the economic status of women through self-help (micro-finance) groups.

5) Energy Transition Program - The Federation is actively engaged communities to facilitate transition to lower carbon emission technology for cooking and heating. In this regard 240 fuel-efficient smokeless *chulas* and 146 LPG cooktops and cylinders were distributed to community members in Tyrsad and Laitkroh. Most of the beneficiaries were dependent on forests and also living below the poverty line.

6) Fruit Tree Plantations – The Project has been working to meet the need of the interested participants for horticulture by procuring the tree saplings from Social Forestry of the

Government of Meghalaya to enable to carried out plantation programme with Umsawmat community, private land owners and school students. About 1,000 trees were planted.

A2: Successes and challenges

Successes:

- Increasing community trust in the initiative and activities of the Synjuk
- More active participation in Synjuk activities
- Community based institutions are becoming stronger
- 50% of women participation in Synjuk activities
- Involvement of many stakeholders
- Quarrying: The Project visited the villages for awareness and meeting with quarry owners and workers to discuss the prospects of alternative means of livelihood while also identifying the pros and cons of abandoning quarrying by the dependent family. All agreed to not expand existing quarries into forest land.
- Nursery activities: The quality of saplings has improved over the years and an increased in survival rate was observed. Management of nurseries and quality has progressed due to consistent monitoring and training programmes.
- State Govt cooperation: The Synjuk has been collaborating with the government programs and they are now looking to upscale such activities. This is a good way of converging Synjuk activities with government run programs.

Challenges:

- Self Help Group/ Farmer's clubs are being supported by the project to address challenges faced by participating households. These include the following challenges:
  - Irregularity of farm-based income.
  - High investment cost for upgrading agriculture and livestock activities.
  - Lack of access to technology and skill development for converting farm and non-farm-based activities into micro-enterprise mode.
  - Lengthy process of borrowing from banks and complicated procedures on private loans.
- Acquisition of land for ANR and early closure is facing a lack of suitable locations that can fit into an ANR criteria. Much of the best available sites for ANR were already treated in 2014 and 2015. As a consequence, the project team has sought locations outside the original project area to implement community-based eco-restoration activities, for those supported by WeForest.

A3: Project developments

Many positive changes can be observed in the project such as 1) a decrease of forest fires in the project area in comparison to the area outside the project and 2) an increase in awareness level of communities and participation regarding the REDD + project and

benefits. In addition, the World Bank and the Japanese International Cooperation Agency (JICA) have made repeated visits to the project and are using it as a model in the design of state-wide loans to the Government of Meghalaya in support of community forestry.

Table 1: Document update

REDD+ and ANR Technical Specifications V.4.0		
	Date	**Short description of update**
Technical Specifications		
Section 10	10/18	Revised Table 20 under Forest Restoration decreasing the number of Hectares with ANR Advance Closure Treatment each year to better reflect available sites within the REDD project area. Decreased projection for full achievement from 200 ha. to 100 ha.
	10/18	Revised Table 21 under Fuel-wood Consumption decreasing the number of fuel-efficient stoves installed due to increase in LPG use as the fuel-efficient stoves still use fuelwood. Decreased projection for full achievement from 250 to 50. Also, decreased projection of LPG stoves from 200 units to 100 units due to funding limitations.
	10/18	Revised Table 22 under Benefit Sharing and Participation increasing the number of families accessing CDGs. Increased projection for full achievement from 600 to 4,000.

A4: Future developments

As explained above, the Synjuk is keen to partner with Indian entities which can support their initiatives in the field. Efforts are being directed towards not only buyers of carbon credits in the international market but also top national buyers. Currently, there is a big opportunity in India with the passing of the Corporate Social Responsibility Bill (CSR bill) which mandates a certain category of companies to invest a portion of their revenue into CSR activities. Closer cooperation with government agencies and their programs for tribal communities are also being explored. This is a good way of integrating Synjuk's activities with government run programs.

PART B: Project activities

Under the Sixth Schedule of the Constitution of India, the forests in the project area are owned by the indigenous communities and clans, so it is important that their institutions and management capacities be strengthened to ensure sustainable management. Indigenous institutions are threatened by internal and external rent seekers who, in many areas of Northeast India, are felling community forests, leasing lands for mining and industrial development. The project has created a permanent sub-watershed federation to provide ongoing support to the participating Hima and Durbar, which is guided by a governing board of hima leaders and other community members.

B1: Project activities generating Plan Vivo Certificates

Table 2: Project activity summary

Name of technical specification	Area (Ha)	No. smallholder households	No. Community Groups
Advance Closure for ANR	1,401	3,290	47
REDD+	9,270	4,357	62

Plan Vivo certificates are designed to mitigate important drivers of deforestation and degradation which are present in the Khasi Hills. The technical specifications include avoided deforestation in the dense forest area (REDD+) and Assisted Natural Regeneration (ANR) in t he open forest zones. In 2017, the Federation also expanded the Assisted Natural Regeneration on 8.3 hectares of degraded land for the year 2017 which involves both assisted natural regeneration and enrichment planting bringing the total ANR area to 1401 ha. Deforestation and degradation; the key drivers are forest fires, unsustainable fuel wood collection, grazing, mining, and charcoal making are focused to minimize. See Table 3 below.

Table 3: Area protected for natural regeneration and enrichment planting 2014-2017

Hima/LWC	ANR area added 2014	ANR area added 2015	ANR area added 2016	ANR area added 2017	Total ANR area to date
Mawphlang	24	86	22	8.3	133.3
Laitkroh	7	41	30	NIl	78
Nonglwai	8	Nil	Nil	NIl	8
Lyngiong	11	271	68	NIl	350
Mylliem	95	12	20	NIl	127
Pamsanngut	118	21	116	NIl	255
Nongskhlaw	Nil	20	39	NIl	59
Nongspung	9	4	Nil	NIl	13
Sohra	20	16	205.6	NIl	86
Mawbeh	100	30	7	NIl	137
Total	392	501	499.0	8.3	1401.1

Part C: Plan Vivo Certificate issuance submission

C1: Contractual statement

This issuance is based on the signed PES agreements that the Federation (Synjuk) has established with 62 participating villages in the project area.

According to the findings of the 2016 verification study and SPOT analysis (2010-2016) the project has demonstrated that it has slowed deforestation in the project area when compared to rates from the earlier period (2006-2010).

Table 5: Project impacts that generate ERs

Forest degradation and deforestation from 2010 to 2016	Relative to Baseline Project Activities had the following impact in reducing loss rates
LAND USE CHANGE (2010 TO 2016)	

	by:
Dense to non-forest	20.2%
Dense to open	35.0%
Open forest change to non-forest	28.5%

Table 6: Statement of tCO2 reductions available for issuance as Plan Vivo Certificates based on activity for reporting period 1/16 – 12/17

The project targeted 500 ha for ANR from 2014-2016. An analusis in 2017 showed the actual area under ANR is currently 1,409 ha. While in 2014, 500 ha were targeted for ANR, the actual ANR area for that year was 392 ha. Moreover, the project struggled to find suitable ANR areas for 2017 which has meant the projected targets from 2017 – 2021 have been reduced from 200 ha to 100 ha. As a result, the technical specifications were updated to give a better overview of the actual ha under ANR (version 4, Nov 2018). The saleable ERs from previous periods (60,205 tCO_2) have therefore been adjusted.

	Previous Versio of Technical Specifications (version 3, April 2017)	New Version of Technical Specifications (version 4, November 2018)
ANR (ha) by 2017	1,700 ha	1,409 ha
Overall project benefit by 2017	50,636 tCO_2	49,600 tCO_2
Adjustments of tCO_2		-1,036 tCO_2

Total area (ha)	Tech. Spec	Saleable ERs available (tCO2) available from previous periods vintage 2012-2016	Total ER's (tCO_2) achieved this period (2017)	No. of PVCs allocated to buffer from ER's (2017)	Saleable ERs available (2017)	Issuance request (PVCs) Vintage 2012-2016	ER's (tCO_2) available for future issuances
9,270	REDD+	59,169[1]	44,715	8,943	35,772	10,000	84,941
1,409	ANR	0	4,885	977	3,908	0	3,908
TOTAL		59,169	49,600	9,920	39,680	10,000	88,849

Available for future issuances

Vintage 2012-2016	49,169 tCO_2
Vintage 2017	39,680 tCO_2

[1] Adjusted as per above

C2: Allocation of issuance request

Table 7: Allocation of issuance request

Buyer name/ Unsold Stock	No. PVCs transacted	Registry ID (if available) or Project ID if destined for Unsold Stock	Tech spec(s) associated with issuance
Khasi Hills Community REDD+ Project	10,000	10300000000432	REDD+/AR
TOTAL	10,000		

C3: Data to support issuance request
See monitoring results Annex 1.

Part D: Sales of plan vivo certificates

Table 8: Summary of sales 2012-2017

Vintage	Sale Date	Buyer	No of PVCs	Total $
2012	6/15/2013	Zeromission	2,463	
2012	7/31/2013	C-Level	200	
2012	8/9/2013	Bioclimate	1,306	
2012	9/2/2013	Ceramica Santogostino	1,225	
2012	9/25/2013	Zeromission	501	
2012	4/30/2014	Zeromission	4,474	
2012	6/10/2014	COTAP	283	
2012	7/15/2014	Ceramica Santogostino	360	
2012	5/15/2014	C-Level	200	
2012	3/16/2015	COTAP	674	
2012	6/12/2015	Ceramica Santogostino	340	
2012	6/15/2015	C-Level	500	
2012	7/3/2015	Zeromission	251	
2012	7/11/2016	Shaika Rakshi	1	
2014	11/4/2015	COTAP	269	
2014	10/15/2015	Zeromission	15,000	
2014	12/10/2015	WeForest	2,132	
2014	3/2/2016	Zeromission	6,500	
2014	6/9/2016	Ceramica Santogostino	350	
2014	9/14/2016	COTAP	660	

2015	7/8/2016	WeForest	2,102	
2015	11/24/2016	WeForest	2,075	
2015	11/10/2016	Anima Impreza	20	
2015	12/6/2016	Zeromission	8,099	
2015	5/5/2017	Zeromission	9,727	
2015	6/2/2017	C-Level	850	
2016	9/13/2017	COTAP	1,467	
2016	10/25/2017	Zeromission	250	
2016	12/27/2017	Zeromission	9,718	
2016	3/9/2018	WeForest	1,876	
TOTAL			**73,873**	

Part E: Monitoring results

Table 4 summarises the progress and monitoring results for 2017. The monitoring framework was updated in 2018 to link the project activities more clearly to drivers of deforestation.

Table 4: Progress and achievement: Impacts

	Activity	Indicator	Target Achieved			2017
1. REDD Driver Mitigation			Full	Partial	Missed	
Forest fire	a. Fire control	No. of hectares burned	10 ha			Target: < 50 ha
		Length of fire lines constructed	57 km			Target: 60 km
Firewood collection	b. Fuelwood reduction	Smokeless *Chulas*			X	Target:250
		LPG cooktops		80		Target 200
		Reduction in fuelwood use at household level				*
	c. Forest plan	No. of plans produced				*
Charcoal-making	d. Charcoal-making retraining	No. of families				*
Agricultural land-clearing	e. Planning & mapping	No. of village maps produced		1		1
	f. Forest land cleared	No. of ha. cleared	0			Target: 0
Grazing	g Stall-fed livestock	No. of pigs and poultry	288			No set target
	h. Forest closure	No. of ha. closed			8.3	Target: 100 ha
Quarrying	i. Outreach	No. of new mining licenses granted	0			Target0
	j. Retraining	No. of families retrained				*

2. Forest Restoration (ANR)						
	a. Silvacultural operations	No. of ha. under ANR treatment		40		Target: 100
	b. Trainings	No. of trainees	188			Target: 100
	c. Meetings	No. of meetings	20			Target:
	d. Incentive awards	No. of awards	3			No set target
3. Socio-economic						
	a. Benefit sharing & participation	No. of CDGs	59			Target: 62
	b. SHG nurseries	No. of nurseries selling trees	20			No set target
	c. Agricultural/Horticulture	No. of fruit trees	600			No set target
	d. Institutional capacity	No. of trainings	10			Target:10
		No. of families	382			Target:200
	e. Incentive awards	No. of awards	14			No set target
	f. Eco-tourism	No. of visitors walking DST				1,000
		No. of guided tours				50
		No. of tea shops				10
		No. of overnight guests at Resource Center				100
4. Biodiversity						
	a. Surveys	No. of surveys	X			8
	b. Keystone species	No. of keystone species sightings				*
3. Socio-economic						
	a. Benefit sharing & participation	No. of CDGs	59			Target: 60
	b. SHG nurseries	No. of nurseries selling trees	20 units			Target: 5 units
	c. Agricultural/Horticulture	No. of fruit trees	660			No Target Set
	d. Institutional capacity	No. of trainings	10			Target 10
		No. of families	382			Target 200
	e. Incentive awards	No. of awards	14			Target
	f. Eco-tourism	No. of visitors walking DST	1006			No set target
		No. of guided tours	52			No set target
		No. of tea shops	10			No set target
		No. of overnight guests at Resource Center	105			No set target
4.						

Biodiversity						
	a. Surveys	No. of surveys	8			Target: 6
	b. Keystone species	No. of keystone species sightings				6

*New indicators added, data available in 2018.

Land for planting sustainable fuelwood lots is currently in the same general area as where fuelwood is collected. Once this area has been protected from disturbance, planting fast-growing species for fuelwood will commence. The village management map is being developed and these areas will be demarcated in the final version of the map

Impact narrative

1. Drivers of Deforestation

1a. Forest Fire - The Khasis have struggled with forest fires for centuries and have developed a traditional method to control them (*Sainding*) through the clearing of fire lines. These breaks in the forests are cleared by cutting away all vegetation and materials to provide space to stop the fire when they break-out. Unfortunately, in recent decades the practice of *Sainding has* fallen into disuse. Now it is being revitalized under the Khasi Hills Community REDD+ Project.

The impact of fire is in part determined by the length and severity of the dry season. According to the baseline scenario, an average of 172,005 tCO2 would be emitted each year between 2012 and 2021 from all sources. The project scenario reduces these emissions by 40,745 tCO2 per year. By preventing a major forest fire burn on 100 hectares of dense forest alone, an average of 34,755 tCO2 emissions are avoided. Because forest fires have such great potential to contribute to greater carbon emissions, this has become a priority of the project. Between 2010 and 2012, before the project began, 248 ha. of forest burned.

After the project was fully operating from 2015 to 2017, only 28 ha. burned reflecting the dramatic impact of fire control measures (see Table 1 Annex 1). In addition, comparing the incidence of fires in the district as opposed to the project area, MODUS satellite imagery in 2017 show that there were only 3 fires in the project area compared to 221 in the district. Even accounting for the fact that the district is approximately 10 times the size of the project area, the incidence of fires is still far lower in the project area as a result of fire control measures.

Carbon sequestration in the dense forest is taking place at a accelerating rate due to the decrease of forest fire incidents. Dense forests in the project area represent a substantial carbon sink as well as a increased habitat for biodiversity. Over the six years that the project has been operating, carbon stock in the dense forests has increased by an average of 55% for the sample plots. This reflects a rate of 10.3 tC per ha. per year between 2011 and 2018 (see Table 3 Annex 1).

1b. Firewood collection- After testing a variety of fuel-efficient stoves, the Federation began promoting a model that can be constructed on site with locally available cement, rebar, and metal pipes. The stoves cost approximately US$20 and are built by the local youth who are trained by the Federation. In 2016, the Federation introduced the modern technology of LPG to the project area as a new form of clean energy utilizing no fuel-wood. In 2017, the project distributed 240 fuel-efficient *chulhas* as well as 80 LPG stovetops throughout the project area. The impact of reduced fuel-wood use is reflected in the fact that dense forests are sequestering additional carbon at a high rate despite sustainable extraction of fuel wood (see Table 3 Annex 1).

1c. The project team is working with each project team to produce resource management maps that identify production forest areas that will be placed under 30-70 year rotations. After the end of the rotation, fuel-wood and timber will be harvested leaving saplings and younger trees to regenerate. This will allow for the sustainable production of fuel-wood according a traditional Khasi management practice.

1d. Charcoal-making-Some low-income households are engaged in entering community forest areas, felling shrubs and trees to feed small charcoal pits. The resulting charcoal is carried to road heads and sold to middlemen. This method of charcoal making degrades the dense community forest areas and can result in forest fire. The project seeks to help poor households to transition from forest-based charcoal making through the provision of charcoal briquette making machines which can utilize agricultural wastes. This strategy can reduce forest loss and raise incomes. In 2016, a survey of villages dependent on charcoal production was conducted to identify high-priority areas for alternative income generating activities. At the moment, however, the briquette industry hasn't developed as many can't find the alternative raw materials. The Federation will be providing training to communities on how to make charcoal briquettes to stimulate uptake going further.

1e. Agricultural land-clearing- A participatory rural appraisal was conducted for one village in the project area. A map was produced to assist in natural resource land management. No new forest land has been cleared in 2017 in the project area.

1g. Grazing- The project area has 5,280 hectares of degraded, open forest lands with less than 10% canopy closure. The Federation is accomplishing this sequentially, by working with neighboring communities to identify and close selected, high-regeneration potential forests through "social fencing" such as closing access to grazing animals to increase natural regeneration. In addition, families with low-value cattle and goats are assisted to replace them with stall-fed pigs and chickens.

1i. Quarrying-The Synjuk leaders have agreed to limit the expansion of quarries and mines in the project area. Those areas under current lease are being monitored and the lease holders are being advised regarding mitigation actions to reduce their impact on erosion and water contamination. When leases expire, the Hima have agreed not to extend existing leases wherever possible. The closure of small quarries and mines by the State government has resulted in the displacement of several hundred village members engaged in this sector. Some of them have shifted to charcoal production in project area forests. The Synjuk is

working with these families to find alternative livelihood activities. In 2016 and 2017, there were no further quarries or mining leases issued for the project area.

2. Forest Restoration (ANR)

2a. Silvacultural operations- Thinning of Assisted Natural Regeneration Forest Plots - To assist the growth and development of regenerated seedlings and to prevent the seedlings from damage that may be caused when forest fire occurs. Thinning of all the WeForest plots was done during the month of March and October at the rate of Rs 250 per plot. The regenerated saplings growing very close to each other (< 1m) were thinned to maintain adequate space for the saplings to develop. 4 plots were treated in 2017 for a total of 49 ha. In addition, 8.3 ha. of advanced closure of forest was performed ANR operations. The 2017 forestry inventory found that carbon stock increased by 2.8 tC, representing nearly three times the annual projection. (see Table 2 Annex 1).

2b. Trainings - In 2017, the ANR team successfully conducted trainings in silvacultural techniques for enhancing natural forest regeneration. The team coordinated with SHG tree nursery owners and community members to transplant nursery saplings into reforestation plots.

2c. Meetings-The project organized 2 meetings on community REDD awareness across the 10 Hima with community members and village elders and extended information on the REDD project in 2017. Attention was given to identifying areas for forest restoration (ANR); planning of fire line establishment; and understanding community resource problems and priorities. A total of 20 meetings were held.

2d. Incentive awards-Three incentive awards were given to the best-performing LWC for its achievements in controlling forest fire, restoring degraded land, and preparation of community management plans., regularity of meetings, maintenance of records with photo documentation, proper utilization of funds for community development grants (CDGs), and ability to spread awareness in the communities on the importance of ANR (see Annex 5).

3. Socio-Economic

3a. Benefit sharing & participation- An important component of this REDD+ project involves distributing benefits to project communities through the annual Community Development Grant programme (CDG). Each year the Local Working Committee (LWC) contacts each village and requests grant proposals. Each village discusses various project options and finally decides which project to submit. The project then reviews the proposals and budgets after which acceptable proposal receive an award of Rs. 25,000 ($396). In many cases, the village provides the labor and additional materials that may be required.

In 2017, fifty-nine villages received grants through payments that go beyond the calendar year, according to the completion of work. Of the 5,135 households in the project area, 3,471 directly benefited from the development activity. As in 2014-2016, most projects involved improving water resources through the establishment of drinking wells, washing

facilities, and ponds. Increasingly, villages are opting to use their development grant for other environmental purposes such as creating rubbish bins for burning trash, toilet facilities, and ecotourism sites (see Table 5 Annex 3).

3b. SHG nurseries- The Synjuk has organized, trained and funded 20 community tree nurseries, primarily managed by women's Self-Help Groups (SHGs). The home-based nurseries are monitored very closely by the CFs and Youth Volunteers. Endemic tree species are grown to be used for various forest related activities. Annual monitoring is done during the month of September - October with the help of the Technical Team.

3c. Agriculture/Horticulture- Training of women Community Facilitator and women Youth Volunteers regarding REDD+ activities. The objective of this training is to enhance the knowledge for mobilizing and facilitating the people within the community. Training is given on livestock and farming to the SHGs, Farmer's Clubs, and LWC members. In 2017, 118 trainees participated with the Federation distributing 270 chickens, 18 piglets, 600 peach saplings, 60 passion fruit saplings, 4 units of Shade Nets and 1 unit of Vermi composting. At present, there are 382 beneficiaries who have benefitted from the Federation during the year.

3e. Incentive awards-Fourteen awards were given to the best performing and creative SHGs and Farmer's Clubs for regularity of meetings, maintenance of records, monthly savings, flow of internal loaning, active participation in social development, and cooperation with local government programs (see Annex 5).

3f. Ecotourism-The East Khasi Hills is widely recognized as an important eco-tourism area. The historic David Scott Trail, which partially traverses the project area, has been targeted by the project for eco-tourism livelihood development since 2014. In 2017, the project welcomed 1,006 hikers, organized 50 guided tours, and supports 10 tea shops. A Resource Center located at the beginning of the trail provided overnight accommodation for 105 guests.

4. Biodiversity

4a. Surveys- Eight surveys were conducted by the youth volunteers showing a continued variety of healthy indicator species (see Table 4 Annex 2). In 2017, signs of a recovery of threatened wildlife are apparent as forest fragments are regenerating and reconnecting with dense forests along the Umiam river watershed. The project strategy in restoring biodiversity is dependent on this important wildlife corridor. The project is preparing to establish a wildlife baseline indicator system to monitor changes in more detail for 2018.

B2: Project activities in addition to those generating Plan Vivo Certificates

- Increased Staff Capacity - The Synjuk capacity to mobilize community forest protection and restoration increased in 2016 as the young project staff gained field experience. In 2016, the Synjuk increased staff recruitment efforts from project villages to build local capacity and retain staff longer. The introduction of lady CF and youth volunteer in 2017 marked the change in facilitation of the federation from a male dominant perspective to

a more equivalent one. As Khasi women play a key role in the household economy, involving them in the project is viewed as an important step in addressing livelihood needs and mobilizing the energy of community women.

- SHG Knowledge Sharing Platform - The objective of both these programs was mainly to bring together all the SHGs created/adopted by the Synjuk and to learn about their works and progress, the challenges met and to suggest ways and means to tackle the problems. The group shared their experiences to motivate others in working together with cooperation and dedication which will improve their social and economic condition. The groups were provided independent options in income generating activities from farming to production to value addition within their potentiality. Awards have also been given to the best performing SHGs/ Farmer's club and the Lower Working Committee.

- Tree Adoption programme - The tree adoption programme was held for two days, where 79 students of two schools with the youth volunteers and CF of the Hima, assembled on the planting site at Lumpomlum Dympep and Kyiem community Forest. The oath was taken that each student would take care of the tree for three years and till it grows into a big tree. Total number of trees planted was 565 trees.

- Medicinal plants - In 2017, the Synjuk continued to support activities for medicinal plant conservation involving 28 herbal healers. Identification of sites for in-situ conservation of medicinal plants was completed in some of the Hima. The 10 units of nurseries that were established at 4 Himas involving 8 herbal practitioners in 2017, continue to operate under Tambourine Trust. Interviews and capacity building programmes were held at various Hima. A regional conference of traditional healers was planned for early 2017.

Part F: Impacts

F1: Evidence of outcomes

The project has demonstrated a variety of impacts that are directly or indirectly linked to project activities. Information and other evidence that document these outcomes are included in Annex 5. The use of community development grant funds by participating villages to improve water resources and of the 59 communities demonstrates that the project is having an impact on health conditions and the quality of life. More than 2,000 households have benefited in which they have easy access to water resource facilities in the community. Through formation of groups, the members can avail loan within the SHG to start up with livestock activities and micro enterprise to improve their income generating activity. The federation supports the groups through grants for upliftment of the groups.

Part G: Payments for ecosystem services

G1: Summary of PES by year

The primary mode of PES distribution is through the annual Community Development Grant Program. Payments were made to 5,617 households in 59 villages. All payments to communities through the CDG program were paid at the end of the reporting period. See Table 5 Annex 3. Distributions through this mechanism are summarized in Table 12 below:

Table 12: Summary of payments made and held in trust

Reporting year (1/2017 – (12/2017)	Total previous payments (previous reporting periods)	Total ongoing payments (in this reporting period)	Total payments made (2+3)	Total payments held in trust	Total payments withheld
Community Development Grants	$19,762	$19,762	$39,524	$1,563	$1,563
TOTAL	$19,762	$19,762	$39,524	$1,563	$1,563

Part H: Ongoing participation

H1: Project Potential

The project leaders are meeting with village leaders in neighbouring West Khasi Hills, Ribhoi District and Smit area to assess potential interest in expanding the project into their areas.

H2: Community participation

The project strategy is based on the intensive participation of the communities. In 2017, meetings and field activities were taking place daily throughout the project area. Annex 6 includes a table that documents a sample of diverse modes of community participation which occurred in 2017.

Part I: Project operating costs

Table 13: Allocation of costs 2017

Category	2014 US $	2015 US $	2016 US $	2017 US $
Project Management Team	6,150	7,104	6,475	24,694
Administration	2,712	5,446	3,588	19,505
Adjustment for bank charges	10	92	3	35
Equipment and Supplies	544	2,053	974	882
Forest Conservation Extension Program	12,200	11,024	3,286	14,251
Plot Monitoring	731	1,912	1,729	199

Forest Assisted Natural Regeneration	4,050	6,770	2,000	0
Awareness Raising	5,042	3,634	1,287	494
Small Livelihood Grants	1,658	2,155	2,759	2,018
Village Development Grants	12,750	18,235	18,102	19,762
Total	45,847	58,425	40,203	81,840

ANNEXES

Annex 1: Carbon monitoring results for issuance request

Table 1: Data on annual burn areas

Forest Fire Incidence in the Khasi Hills Project Area: 2010-2017										
Sl.no	Hima	Total Area Burned (in ha) Area in blue before REDD project								
		2010	2011	2012	2013	2014	2015	2016	2017	Total
1	Mawphlang	20	1.7	4	1.5	9.1	0.4	2.75	10	51.05
2	Nonglwai	3	Nil	Nil	Nil	Nil	Nil	Nil	Nil	3
3	Lyngiong	2.4	6.8	2.3	1.6	1.9	Nil	8.2	Nil	25.6
4	Mylliem	Nil	Nil	Nil	5	Nil	0.8	Nil	Nil	5.8
5	Pamsanngut	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
6	Laitkroh	6	7	9	Nil	1.6	4	2	Nil	29.6
7	Sohra	Nil	Nil	43	14	Nil	Nil	0.4	Nil	57
8	Mawbeh	35	75	30	40	107	Nil	Nil	Nil	287
9	Nongspung	Nil	3	Nil	Nil	Nil	Nil	Nil	Nil	3
10	Nongkhlaw	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
		66.4	93.5	88.3	62.1	119.6	5.2	13.4	10	462.05

Table 2: Open forest plot carbon stock change for 2011, 2016 and 2017

Plot No	Carbon (tC/ha) 2011	Carbon (tC/ha) 2016	Carbon (tC/ha) 2017
3	16.95	18.11	21.14
6	3.33	4.14	4.90
7	10.3	9.92	11.75
8	6.32	29.77	32.33
12	19.49	21.96	25.51
13	8.48	9.49	11.16
15	28.37	66.98	72.61
16	54.05	92.02	98.93
17	44.35	67.81	72.61
18	12.03	24.64	28.40
19	8.92	20.99	23.82
20	5.92	4.84	5.69
23	8.17	8.49	9.68
26	24.76	19.03	22.26
27	33.89	38.36	43.32
31	10.31	6.93	6.48
36	11.95	21.97	26.26

39	21.87	26.55	29.46
40	4.42	8.5	9.71
Total	334	501	585.30
Mean	17.58	26.36	29.28

Table 3: Dense forest carbon stock change 2011, 2016, and 2017

Plot No	Carbon (tC/ha) 2011	Carbon (tC/ha) 2016	Carbon (tC/ha) 2017
1	156.05	174.76	174.23
2	97.06	188.23	202.77
4	86.67	120.23	128.80
5	57.9	211.87	224.14
9	160.23	216.39	208.51
10	108.95	122.03	125.40
11	100.11	122.05	98.07
14	144.82	174.07	178.58
21	87.37	166	155.11
22	151.68	179.06	184.83
24	125.92	169.32	180.36
25	21.14	42.32	105.23
28	75.79	85.74	124.38
29	140.21	164.05	164.10
30	209.87	344.96	385.03
33	62.98	100.55	152.03
34	119.84	163.32	173.46
35	49.91	87.95	144.71
37	213.21	247.32	288.51
32	63.49	63.49	100.07
38	142.31	155.83	170.12
Total	2,376	3,300	3,668.44
Mean	113	157	174.69

Annex 2: Conservation monitoring results

The Biodiversity Survey provides a record of sightings of flora and fauna in the project area. The survey is kept by the Community Facilitators (CFs) to the best of their capability through the inputs of the Youth Volunteers and resident villagers to get a glimpse of the status of the faunal diversity in the area. Photos on the next page.

Table 4: Biodiversity survey 2017

Hima Lyngiong			
Name	Date	Place	GPS
Kbeit	2017	Umkaber	25°24.985' N 91°41.891' E
Spathoglotiss pubescens Terrestrial orchid	2017	Umsawmat	25° 24.702' N 91°41.661' E
Panax sp Ginseng	2017	Umkaber	25°25.021' N 91°41.799' E

Hima Sohra			
Name	Date	Place	GPS
Owl	2017	Mawstep	25°22.264 'N 91°44.614' E
Orchid*, Eria coronaria*	2017	Jathang	25°22.313' N 91°44.621' E
Anonectochilus sp. Filigree orchid	2017	Mawkma	25°19.912' N 91°43.947' E
Hima Mawphlang			
Name	Date	Place	GPS
Sein sla	2017	Lumlaitlynding	25°26.913' N 91°45.142' E
Wild dove	2017	Nongrum	25°26.742' N 91°45.532' E

Annex 3: Community impacts

Table 5: Community Development Grants provided to 59 participating villages 2017

Hima	Cluster	Village	Activity	No of HH	No of HH benefitted through CDG
Mawphlang	Nongrum	Mawkohmon	Construction of canal at Pung Shyngiar	220	220
		Mission	Purchasing of cooking materials	85	85
		Ladumrisain	Construction of footpath from Ing Kong Prin Syiemlieh to Pynbianglang Blah House	124	124
		Nongrum	Purchasing of village materials (kettle and street light)	136	136
		Dongiewrim	Purchasing of 100 plastic chairs	168	168
		Lyngkien Sunei	Purchasing of plastic chairs	82	82
	Wahlyngkien-Ramklang	Umtyrnuit	Construction of drinking well	88	20
		Mawmyrsiang	Construction of drinking well	63	15
		Wahlyngkien Ramklang	Purchasing of cooking materials	102	102
		Kyiem	Construction of toilet at community hall	114	114
	Phanniewlah	Phanniewlah Neng	Purchasing of 4 tarparlin and 50 plastic chairs	98	98
		Phanniewlah Rum	Purchasing of 4 tarparlin and 6 screens (jain screen)	78	78
		Umkaber	Purchasing of PA system and tarparlin	81	81
	Laitmawhing	Kyndong Laitmawbah	Construction of drinking well	42	10
		Lawshlem	Purchasing of cooking materials	42	40
		Thainthynroh	Construction of burning garbage dustbin	80	16
		Laitmawpen	Construction of drinking well	86	20
		Laitmawhing	Construction of drinking well	60	16
	Lyngdoh Phanblang	Lyngdoh Phanblang	For purchasing of cooking materials	98	98
		Perkseh	Construction of fencing at children park	75	75
		Laitsohphlang	Construction of washing place	32	31

		Umsawmat	Construction of washing place at Umdiang	106	6
		Kukon	Construction of football ground	19	19
Nonglwai	Nonglwai	Nonglwai	Construction of washing place at wahbah	180	23
		Mawlum Khongsit/Tyrsad	Construction of water tank	90	70
		Kyrphei	Construction of washing place	135	80
		Umlangmar (M)	Construction of drinking well	73	10
Mylliem	Mawlum	Mawspong	Construction of drinking well	20	20
		Nongmadan	Construction of dustbin	95	35
		Nongwah	Renovation of washing pond	145	60
		Pamsanngut	Construction of washing bath	50	30
Pamsangut	Pamsanngut	Tyrsad Umkseh	Renovation of washing pond	206	50
		Mawliehpoh	Construction of washing place	60	21
		Mawrohroh	Construction of check dam	72	72
Nongspung	Umlangmar (N)	Umlangmar (N)	Construction of washing place	32	32
	Mawmyrsiang	Mawmyrsiang	Construction of water tank at Madan Mawmyrsiang	202	100
	Laitkynsew	Laitkynsew	Construction of drinking well at Wah u Bar	182	80
Laitkroh	Nongthymmai	Nongthymmai	Construction of drinking well at Wah Shait Shait	118	**150**
		Mawbeh	Purchasing of PA System and construction of drinking well at Synrang Marpna	135	135
		Mawkalang	Construction of washing place	21	21
		Laitsohma	Renovation of Community Hall	29	29
	Mawbeh	Steplakrai	Purchase of 10 school chairs and desks	32	32
		Synrangsohnoh	Construction of drinking well at Mawlynniew	34	6
		Wahstew	Construction of waiting shed	52	52
		Laitumiong	Cleaning the boundary of Law Adong	13	13
Mawbeh	Wahstew	Laitthemlangsah	Construction of washing place	20	20
Sohra	Jathang-	Jathang	Construction of washing	42	20

	Mawstep		place at Synrang Lyngngi		
		Mawstep	Renovation of Village dorbar Hall	48	48
		Rngidiengsai	Purchase of plastic chairs	15	15
		Pyrda	Purchase of 55 plastic chairs and 1 table set	53	53
	Dympep	Dympep	Construction of view point at Dympep Tourist View Point Duwan Sing Syiem Bridge	70	70
		Laitsohpliah	Construction of dustbin at Tyngam Masi Tourist Spot	65	65
		Umdiengpoh	Construction of dustbin	75	38
	Ladmawphlang	Ladmawphlang	Construction of washing place at Wah Khlaw	100	89
		Mawmihthied	Renovation of drinking water pond	109	9
	Laitlyndop	Mawkma	Purchasing of 100 plastic chairs	234	234
		Laitlyndop	Construction of check dam at Them Wah Shoh Maw	110	20
Nongkhlaw		Sohrarim	Construction of drinking well at Wah Bah	139	15
TOTAL				5,135	3,471

Annex 4: Community participation in meetings and events 2017

Hima	Villages	Meeting(s)	Description	Outcome
Mawphlang	Nongrum, Dongiewrim, Lynkien Sunei	11/07/2017	Reporting of the village activities completed during 2016, plan estimation of purchasing 10 tube lights and 20 kettles, Dongiewrim decides to purchase chairs, selection of lady youth volunteer from each village.	To meet the needs and requirements of the project for the welfare of the community.
Mawphlang	Umtyrnuit, Mawmyrsiang, Wahlyngkien Ramklang, Kyiem	05/07/2017	Discussed about the existing work implemented by the project, renewed membership, plan estimation on CDG's activities, organise forestry survey on forest fire, fuel wood consumption reduced.	Villagers better informed and community more enthusiastic about participating in regeneration of forest and biodiversity.
Lyngiong	Mawponghong Nongthymmai neng Nongthymmai Rum Kyndong Laitmawbah	24/07/2017	To prepare LPG documentation for connection, discussed eco-tourism within Hima Lyngiong and the seating fees for LWC members, encouraged to continue preserving and conserving the environment, discussed together the theme of cleanliness within the Hima in relation to eco-tourism.	Preservation of natural resources for sustainable development and eco-tourism.
		14/09/2017	Equality and equity of activities to be implemented. Private forest ownership expresses their needs, discussed about the SHG formation so also to strengthen the SHGs.	Developed the feeling of ownership in the community.
Lyngiong	Phanniewlah neng Phanniewlah rum Umkaber	26/06/2017 14/09/2017	Good management of Community Development Grant, Silviculture, New ANR in Lewkor Phudiawkma forest.	Welfare of the community and improvement of forest cover.
Lyngiong	Laitmawpen Laitmawhing Thainthynroh Lawshlem	12/07/2017 14/09/2017	New ANR, Fruit trees sapling beneficiaries to be selected, interaction with stone collection family members seeking ideas for replacing ways of earning their livelihood in future.	Restoring forest cover and alternative livelihood activities in the community.

Lyngiong	Lyngdoh Phanblang Perkseh Laitsohphlang Umsawmat		Construction of smokeless chulha should be inside the home where all the cooking process happens, released fish saplings.	To reduce fuel wood consumption and restore biodiversity
Nonglwai	Nonglwai	Nil	Nil	Nil
Mylliem	Mawlum Khongsit/Tyrsad Kyrphei Umlangmar (M) Mawspong	28/07/2017 28/10/2017 20/11/2017	Selection of beneficiaries to avail plum and peach sapling, selection of beneficiaries for piglets, chickens, smokeless *chulha* and L.P.G by WE Forest and Plan Vivo. Disbursement of CDGs, those who wanted to do community home nursery will inform the CF, silviculture on the ANR area will be identified by the forestry team to improve forest growth, the members need to convey any messages to the village Dorbar for the New ANR area.	Strengthening livelihood activities for upliftment of the SHGs and regenerate forest cover. Prevention and protection of forest in ANR area for regeneration.
Pamsanngut	Nongmadan Nongwah Pamsanngut Mawsawrit Tyrsad Umkseh	05/07/2017 22/12/2017	Nil	Nil
Nongspung	Mawliehpoh Mawrohroh Umlangmar(N)	12/08/2017 02/12/2017 016/12/2017	Distribution of 10 Smokeless Chula 4 L.P.G, New ANR – Mawrohnoh Community forest, Nongspung, discussed on private land ownership, formation of SHG which will be supervised by the CF, Carbon plot – Planting of trees at Mawsahnoh, 30 Households in Umlangmar earn livelihood through quarrying.	Reduced fuel wood consumption and deforestation, implementation on alternative livelihood activities for improving the economic condition of families.
Laitkroh	Mawmyrsiang, Laitkroh	06/07/2017	The LWC decides to construct water tank at Mawmyrsiang ground, selection of LPG connection beneficiaries, Renewal of membership, LWC planned to conduct tree plantation in Lum Laitthynru in the meeting.	Clean and safe drinking water facilities and forest restoration.
Laitkroh	Laitkynsew, Laitkroh	20/06/2017	The LWC decides to construct drinking well	Clean and safe drinking water facilities.

Laitkroh	Nongthymmai, Laitkroh	01/07/2017	Discussion on CDG's for constructing drinking well, selection of female youth volunteer.	Clean and safe drinking water facilities.
Mawbeh	Mawbeh Mawkalang Laitsohma Steplakrai	03/07/2017 26/08/2017 31/10/2017	Create awareness among people in the community on REDD+ project, LPG connections preference will be provided to the LWC members.	To enlighten the community on preservation of the forest.
Mawbeh	Synrangsohnoh Wahstew Laitumiong Laitthemlangsah	24/06/2017 26/08/2017 21/10/2017	Plan an estimation for CDG, women youth volunteer training, Monitoring of poultry, piggery and peach saplings, selection of LPG connection beneficiaries, details and clarifications on Weforest and Plan Vivo task.	Upliftment of livelihood activities and reduced forest dependency.
Sohra	Jathang Mawstep Rngidiengsai Pyrda Kukon Sohr	12/07/2017 21/10/2017	CDG's plan and estimate, selection of smokeless chula beneficiaries, discussed on selection of youths for training and SHG's in working with the Synjuk. Disbursements of CDG, the growth of forest cover is regenerating in comparison to previous year, fuel wood monitoring to all villages to be carried forward, working together will create good atmosphere.	Improved Community natural resources. Improved and strengthened relationship between the community and the Synjuk in community development.
Sohra	Dympep Laitsohpliah Umdiengpoh	14/07/2017 14/10/2017 15/12/2017	CDG's plan and estimate to be implemented properly, selection of beneficiaries for smokeless chula, distribution of peach saplings, to get new ANR area. Completion of tree plantation of 431 numbers, the implementation of CDG to maintain good construction, protection of forest fire, trees and looking after the improvement of forest thickness, the fuel wood monitoring, to provide fencing at laitsohpliah in the area where tree plantation occurred.	Improved forest cover through alternative activities for the well-being of the community as a whole.

Sohra	Ladmawphlang Mawmithied	13/07/2017	CGD's plan and estimate, selection of beneficiaries for LPG and smokeless *chula*, selecting the youth volunteer and training programme according to their skills, request the village to inform for new ANR. Silviculture will take place in Mawmihthied. Follow-up the beneficiaries to improve work plan.	Equality and equity of availing the benefits
Sohra	Mawkma	11/07/2017 16/10/2017 19/12/2017	Planned for CDG's, distribution of Smokeless chula, new ANR, Reporting of utilization of LPG and smokeless chula, the tree plantation at laitlyndop ANR, the implementation of CDG to complete within January 2018 and to maintain good construction, related to forest fire was informed to carry forward fire line annually, Measurement of new ANR area at Mawkma of 19.9 hectares, fuel wood monitoring to be done, It is very important to evaluate the work done by the Synjuk to see how successful the project are on-going.	Developed new ANR areas for restoring the forest through mutual understanding between the communities and the Synjuk. Reduced dependency on forest.
Nongkhlaw	Sohrarim	14/10/2017	The CDG should be implemented soon and it requires good construction, the MOU should be signed by the headman, Completion of tree plantation at Sohrarim of 5,430 saplings and LPG distribution. The practice of fire line construction must be carried forward as usual, fuel wood monitoring to be done.	Regenerate forest cover through social fencing.

Annex 5: Incentive awards 2017

ANR

Criteria: LWC

1. Regularity of meetings
2. Maintenance of records with pictorial documentation
3. Active participation of members towards conservation and preservation of forest and development in the community
4. Proper utilization of funds for Community Development Grants
5. Ability of spreading awareness in the communities for availing ANR areas
6. Helping the community people to avail grants for alternative livelihood in reducing dependency on forest

Awards for best LWC

- 1st Prize – Mawlum Khongsit/ Tyrsad cluster
- 2nd Prize – Lyngdoh Phanblang cluster
- 3rd Prize - Mawbeh cluster

Socio-Economic

Criteria: SHG/Farmer's club

1. Performance of the SHG/Farmer's club
2. Good maintenance of records
3. Activities implemented: regularity of meetings, monthly savings, group activity and individual activity
4. Flow of internal loaning
5. Involvement with the Organization
6. Active participation in the community in social development
7. Convergence with other Government Department

Awards: Tyrsad side

- 1st Prize – Bankiewshaphrang SHG, Kyrphei of Hima Mylliem.
- 2nd Prize – Iatreilang Lawsubah SHG, Nongmadan of Hima Pamsanngut.
- 3rd Prize – Myntoilang SHG, Nongwah, Hima Pamsanngut.
- Consolation Prize – Perkseh Farmer's Club, Perkseh of Hima Lyngiong.

Awards for Creative works

- 1st Prize – Pynroilang Women SHG, Mawlum Khongsit of Hima Mylliem
- 2nd Prize – Tyrsad Umkseh SHG 1, Pamsanngut of Hima Pamsanngut
- 3rd Prize – Iakyrshanlang Women SHG Mawlum Tyrsad of Hima Mylliem

Awards: Laitkroh side

- 1st Prize – Maishaphrang SHG II, Laitkynsew of Hima Laitkroh
- 2nd Prize – Nangkiewshaphrang SHG, Umdiengpoh of Hima Sohra
- 3rd Prize – Iainehskhem SHG, Laitkynsew of Hima Laitkroh

- Consolation Prize – Senglang SHG, Umdiengpoh of Hima Sohra

Awards for Creative works

- 1st Prize – Mawmyrsiang Farmer's club, Mawmyrsiang of Hima Laitkroh
- 2nd Prize – Nongthymmai SHG I, Laitkynsew of Hima Laitkroh
- 3rd Prize – Nangkiewshaphrang SHG, Tiewlieh of Hima Laitkroh

Annex 6: Minutes from Technical Advisory Committee meeting 2017

Technical Advisory Committee Meeting 2017

Welcome Address: The Project Director of Khasi Hills Community REDD+ Project Shri Tambor Lyngdoh welcomed all the members of the second Technical Advisory Committee Meeting which was held at Sylvan House, Department of Forests and Environment, Government of Meghalaya. The welcome address was followed by the Project Director introducing Mr. Michael Govindraj, Trainer and Financial Consultant to Ka Synjuk Ki Arliang Wah Umiam Mawphlang Welfare Society, Dr.A.K. Tripathi, Head, Social Science, ICAR who represented the Director ICAR and Dr.A. Sen, Principal Scientist, Animal Health, ICAR. Subsequently, in the self-introductory round the Technical Advisory Committee members, staff of Rilum Foundation and Ka Synjuk Ki Hima Arliang Wah Umiam Mawphlang Welfare Society introduced themselves.

Agenda: The agenda for the 2nd Technical Advisory Committee meeting and the minutes of the 1st Technical Advisory Committee meeting held on November 2016 was read out by the Project Director Shri Tambor Lyngdoh. The agenda included the presentation on the progress by the Forestry and the Socio-Economic Team and the follow-up of the recommendations of the Technical Advisory Team in the first meeting held in November 2016. Also, it was decided that the Technical Advisory Committee meeting will be held every quarter.

Teleconference with Prof. Mark Poffenberger: In his address, Prof. Mark Poffenberger greeted all the members of the Technical Advisory Committee and wished a successful outcome of the second meeting. He also expressed regret for inability to be present in the meeting. It was conveyed that Khasi Hills Community REDD+ Project has undergone the annual verification and has received third-party verification from Rainforest International in April 2017. The entire team was congratulated by Prof. Mark Poffenberger for the achievement of this milestone by the Khasi Hills Community REDD+ Project which is also Asia's first REDD+ project managed by the community.

The implication of the validation received is that the Carbon generated by the project has been approved. The leadership in the techno-managerial aspect provided by Dr. S. Ashutosh, IFS, in his capacity as Additional Chief Conservator of Forests and Environment was acknowledged with gratitude by Prof. Mark Poffenberger and also thanked the team of Dr. Rocky Pebam, Scientist, North East Space Application Center, Umiam and Dr. Th. Sanggai Leima, SIRD for their technical contribution. Also, the valuable contribution of Prof. B.K.Tiwari, Head of Department of Environmental Studies, North Eastern Hill University as the technical expert and as a supporter of the project received appreciation.

The entire team including the TAC was thanked and sought continued contribution and collaboration for moving the project forward into the future. It was mentioned that the project should make attempts to find market of the Carbon generated among the Indian buyers. The contribution of ICAR, Government of Meghalaya and other agencies towards convergence was appreciated and also the important role played by the Rilum Foundation received acknowledgement. Emphasis was given towards convergence to save the water in the river Umiam through watershed management.

Responding to the query of Dr.S.Ashutosh, IFS on identification of three priorities for the project Prof.Mark Poffenberger highlighted the need for Open Forest Regeneration, Forest Inventory and to showcase the project as a platform for improvement in forest health. He urged upon the increase in budgetary allocation for field-based activities, co-ordination with different agencies and schemes, benefits accrued to households through interventions, reduction of forest product consumption, generation of feedback from non-participating villages and development of strategy for expansion by the Technical Advisory Committee Team.

Presentation of Additionality to Stakeholders and Prospective Carbon Buyers: The Project Director Shri Tambor Lyngdoh conveyed about the expansion of the project into West Khasi Hills and Ri-Bhoi where Participatory Rural Appraisal on Socio-Economic and Forestry Mapping was conducted in Hima Myriaw and Hima Nonglum on 21st April 2017 and 24th April 2017 respectively. The expansion strategy was adopted in collaboration with WeForest. The importance of showcasing the additionality component of the project was conveyed by the Project Director who also mentioned about the successful completion of the calculation of biomass through change of the previous bio-mass equation and the distribution of about 900 LPG annually to the beneficiaries. All the activities in the Forestry and Socio-Economic components of the project is required to be documented in a proper way so that the additional benefits generated are presented. The Project Director identified the strategy of the use of bamboo or bamboo-based applications as a substitute of charcoal in the villages to reduce dependence on forests.

Ujjala Scheme and Monitoring: To address the need for decreasing the dependence on forests as a source of fuelwood, Prof. B.K. Tiwari said that the UJJALA Scheme maybe explored to source LPG Cylinders for distribution among beneficiaries. As a suggestion to complement the monitoring of the rain gauges installed in the four villages, he said that two research students from North Eastern Hill University maybe deployed at the sites before the 3rd Technical Advisory Committee meeting scheduled in July.

Estimation of Bio-Mass: In response to the issue of using the appropriate equation for calculation of the bio-mass generated by the project as cited by Dr. Rocky Pebam, the utility of the volume equation and taking the bio-mass above soil and below soil as sample was suggested by Dr. S. Ashutosh, IFS. Recommendations by the Additional Chief Conservator of Forests and Environment, Government of Meghalaya and Deputy CEO, MBDA was that the strategy of choosing random sample plots should be adopted and the strata chosen should include Open and Dense Forests. The plot sizes adopted are of 0.1 ha in India. He said that the method adopted for the estimation of biomass is in conformity with the standardized protocols except for the variation in the plot size which as quoted by Dr. Rocky Pebam was 0.01 ha. It was suggested that the team should revisit the plot sizes and try to conform to the national and international standards. The Additional Chief Conservator of Forests and Environment offered to train the technical team, ideally comprised of 4-5 people, to cover 30-40 random plots in one day.

In response to the suggestion of Dr. S. Ashutosh, IFS to adopt the random sampling, Dr.Rocky Pebam, Scientist, NESAC enquired if random plot measurement will lead to variation in the measurement. It was conveyed by Dr. S. Ashutosh, IFS that randomness is desirable as Standard Error is a good measure of preciseness of the calculation. Measurements confined to permanent plots may give biased estimates of the Carbon stock.

Strategy and Decision Related to Sampling: The Additional Chief Conservator of Forests and Environment, Government of Meghalaya stated the need for generating 300 sample plots and suggested that he will help to generate 400 sample plots through the official resources available at his disposal. He said that a time period of one month maybe allocated for the generation of the 400 sample plots. He said that measurements of Carbon stock done in Random Sample and Permanent Sample will be compiled to quantify the Carbon stock. He said that the data generation related to the inventory of sample plots should be completed by January 2018 and reports submitted by February 2018. The two pools identified as underground biomass and over ground biomass should form the population for quantifying the Carbon stock. This strategy should be successful in determining and quantifying the accrual of Carbon credits.

In reference to the query of Dr. Rocky Pebam, Scientist, NESAC on choice of volume equation, Dr. S. Ashutosh, IFS said that the equation is designed to deliver results for measurements done on trees which are 10 cm and above in diameter. It was discussed that the technical approach should be foolproof so that stakeholders at International levels are convinced about the methodology adopted for measurement of Carbon stock.

Presentation of Additionality: The Project Director Shri Tambor Lyngdoh expressed the pressing need for showing the additional benefits generated by the project since inception and the steps which needs to be adopted for presentation. In this regard, Dr. S. Ashutosh, IFS suggested about estimating/measuring the Carbon content per unit area in open and dense forests in the periods prior to the project and measurement of the Carbon content after the project intervention. The additionality then can be shown as the trend line of Carbon stock in the event of absence of the project and how the project intervention has been successful in arresting the decline of Carbon stock. It can also be shown as the conversion of open forests to dense forests in the project area after the commencement of the Khasi Hills Community REDD+ Project.

Decision related to Additionality: The Additional Chief Conservator of Forests and Environment, Government of Meghalaya has offered to generate the information on quantifying Carbon content in the years 2000, 2005, 2010 and 2015. This task has been set a timeline of 3 months in this regard.

Decision regarding scattering of the sample plots has also been taken and it was proposed that REDD+ team should undertake the responsibility. The responsibility for training of the technical team for taking measurement of Carbon in scattered random plots has been undertaken by Dr.S. Ashutosh, IFS. Data Entry responsibility has been delegated to the Forestry Team of REDD+ team. The responsibility to calculate the Carbon stock has been taken up by Dr. Rocky Pebam, Scientist, NESAC. It was proposed that the additionality features of REDD+ project can be proven by November 2017.

Interventions in Socio-Economic Sector and Suggestions: It was suggested by Dr. A Sen, Principal Scientist, Animal Health ICAR that as intervention in Socio-Economic sector the project should focus on starting

- Production Clusters for creating sustainable source of Germplasm for Pig Rearing
- Pig Breeding Clusters
- Primary Processing Units in the Piggery Sector for Value Addition and Branding as Naturally Farmed Pork as a niche product
- Develop low cost feed

The Head of Social Science, ICAR, Dr. A.K. Tripathi asked if there were SHGs which were operating with focus on conservation of nature and flora and fauna. It was mentioned that there may be convergence opportunities for SHGs working in the domains of conservation of flora and fauna. It was suggested that the PRA reports of Khasi Hills Community REDD+ Project may be shared with Dr. A.K. Tripathi for additional inputs. Additional suggestion was also regarding exploring the possibility of establishing projects of ICAR in the REDD+ project areas and Dr. A.K. Tripathi highlighted that additionality can also be represented in terms of improvement of agriculture in the project areas. He also offered that ICAR can organize to conduct Training on Socio-Economic Documentation of the REDD+ Socio-Economic Team in June/July 2017.

The Project Director of Khasi Hills Community REDD+ Project has stated that the Carbon generated has not been monitored properly since 2011 and for the purpose of mapping the Carbon content an expert is required. He also said that baseline sampling of livestock in the project area is a necessity and also convergence can be used as an indicator of additionality.

With regards to mapping the forest fire the Technical Advisory Committee has agreed on the need to quantify the size of the forest fire areas and to document the fire affected areas. The representative of RILUM Foundation Smt Lumlang Nengnong stated the need for documentation of increase in forest cover in the project areas.

The meeting was adjourned and ended with a Vote of Thanks from Shri Tambor Lyngdoh, Project Director, Khasi Hills Community REDD+ Project