

Evaluation Report

Name of the project

**Restoration of Hilly Bio-diversity through Community
Based Bio-resource Management at Dighinala**

Implementing entity

ANANDO



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December, 2011

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EXECUTIVE SUMMARY

Anando – a Dhaka based NGO has been implementing the project with financial and technical support from Arannyak Foundation, Dhaka for improving biodiversity as well as livelihood of the resettled tribal people of Dighinala upazila in Chittagong Hill Tracts. Duration of the project is June 2009 to May 2012. Anando initiated project activities in June 2009 with two villages (pilot sites) namely, Vairofa Bridge Para and Ghona Para and later another village Bel toli was included in 2010. The project area covers 35 households (14 in Vairofa Bridge Para, 17 in Ghona Para and 4 in Bel toli) with a total planting topography of 105 acres (8 acres in homestead and 97 acres in hills/valleys). Anando has its own office at Dighinala. Project activities included – i) awareness meeting, poster, signboard/promotional board, field day, etc. for creating awareness and mass mobilization; ii) establishment of a nursery at Anando office premise, distribution of seedlings/saplings, and development of community facilities for creating the pilot site conserving forest; iii) skill development training on IGAs, institutional & organizational development (samity formation, savings and revolving fund) and exchange visit for facilitating alternate livelihood; and iv) Technical training, institutional training and study visit for capacity building of project staffs and ‘Anando’ as a organization. An evaluation of the project activities was made through reviewing project documents, bench-mark report and annual & project completion reports and conducting filed visit, FGDs with project staffs and beneficiaries (male and female, separately), and SWOT analysis during 19-20 December 2011.

Progress of implementation of activities targeted for each year of three years project period was satisfactory with an average achievement of 85 percent (up to November 2011). Awareness of the project beneficiaries (male) had increased remarkably regarding biodiversity and forest conservation as they stopped Jhum cultivation and they know well about project objectives and activities. But such awareness was poor among women (wives of male beneficiaries) because of their non-participation in activities like, awareness meeting, *samity*, training, workshops, etc. Anando distributed 40950 seedling/saplings of different fruit and forest species among the beneficiaries for plantation in hills and homesteads. The average survival rate of planted saplings was 97%. The impact of such plantations and no practice of “Jhum” were visible as the selected barren hill/valleys become green with flourishing trees and naturally grown plant species. Anando has established a nursery in its office campus and produced about 33500 seedlings/saplings so far. Efforts made in demonstrating different technologies regarding homestead utilization model like MTO, HBL, vegetable production, normal compost, vermin-compost, etc. were praiseworthy. Topics of the training were relevant with objectives and number of training conducted was quite impressive but not sufficient to improve knowledge and skill of the participants. It was mainly because of duration of the training and many topics were covered in 1 or 2 days. As regards to institutional and organizational development, formation of two *samities* namely, “Akjoda” *samity* in Vairofa Bridge Para and “Uddyogi” *samity* in Ghona Para, savings by group members and the “revolving fund” for providing loan for IGAs was very promising and striking factors from sustainability point of view. Actually sustainability of the biodiversity and forest conservation will largely depend on sustainability of these *samities*. training were chosen appropriately and in line with the objective. Technical and institutional training provided to project staffs greatly improved their skill and knowledge and enhanced capacity of ‘Anando’ as an organization as well. One of the major weaknesses of the project was that though tribal women are more active than men, there is no active participation of women in activities like, meeting, training, samity etc. and there is no female staff in the project. Drop out of skilled staffs, lack of information in bench-mark report, inadequate training management, no/poor data keeping, etc. were some other weakness of the project. However, considering satisfactory progress in implementation of the project activities, promising growth of the plantations in the homesteads and hills, prospective institutional and organizational development of participants, some visible impacts among the participants, competency and commitment of ‘Anando’ as an organization, and above all for sustainability of activities done so far, it is recommended that the project may be extended for next three years.

1. Introduction

Anando – a non-government organization, has been implementing a project entitled “Restoration of Hilly Bio-diversity through Community Based Bio-resource Management at Dighinala” in Chittagong Hill Tracts (CHT) since 2009 with a view to improving biodiversity of the hilly area as well as livelihood of the inhabitants (returned from India). It has been working with financial and technical support from Arannyak Foundation (AF), Dhaka. During three years of the project period (2009-2011), Anando implemented various activities (pre-set) with community participation for achieving project objectives. An attempt was made to review and evaluate the progress and achievements of the project activities at the end of third year (2011). The ‘Evaluator’ (appointed for this purpose) physically visited the project office of Anando, some homesteads of project participants and tree plantation in some selected hills in the villages Voirofa Bridge Para and Ghona Para. Necessary data/information were collected through FGDs (one with project staffs, one with project beneficiaries and another one with wives of the beneficiaries, separately) using questionnaire/checklist on 20 December 2011.

2. Context and Objectives of the project

The hills and valleys of the Chittagong Hill Tracts (CHT) become almost barren and the biodiversity thereof deteriorated alarmingly due to livelihood pressure of the poor on forest and homestead resources, unplanned “Jhum” cultivation (shifting cultivation), haphazard establishment of households by indigenous people, resettlement of the Bengali community in the planes, valleys and hills, and above all enormous tempt of the power holders. The degradation in biodiversity in the area aggravated by factors like, natural soil erosion, migration of thousands of indigenous people to India for long ware fare situation, and establishment of cantonment and sub-cantonments. However, after the Peace Treaty through 3rd Reconciliation Agreement in 1997, most of the migrated families have returned back and trying to resettle them in their own community with all aspects of previous adaptation. Keeping above mentioned situation in mind, Anando has undertaken this project for achieving the following objectives:

- I. Mass mobilizing for forest and biodiversity conservation
- II. Inputs for creating pilot site conserving location based forest
- III. Improving skills of the community masses towards IGA
- IV. Enhancing capacity building of the individual and Anando- as a community development organization

3. Project Activities and Outcomes

Anando initiated project activities in 2009 with two villages (pilot sites) namely, Voirofa Bridge Para and Ghona Para and later another village Bel toli was included in 2010. The project area covers 35 households (14 in Voirofa Bridge Para, 17 in Ghona Para and 4 in Bel toli) with a total planting topography of 105 acres (8 acres in homestead and 97 acres in hills/valleys). The source of water in Voirofa Bridge Para is “stream”, while that in Ghona Para is “3-water bodies” and there is none in Bel toli.

A bench mark survey was carried out in October 2009 by Dr. Jasimuddin Ahmed, Professor, Chittagong University assisted by project staffs. Findings showed that there were 45 indigenous tree species of which 16 were critically endangered species and there was no exotic species in the area. Population pressure, Jhum cultivation, unawareness, illicit felling, lack of alternate income were the major causes for biodiversity loss.

Two *samity* have been formed in the 1st years namely, “Akjoda” (constituted of 14 members from village Voirofa Bridge Para) and “Uddyogi” (constituted of 17 members from Ghona

Para; and 4 members from Bel toli joined next year). Project activities have been implemented through these *samity* members assisted and supervised by project staffs with overall supervision of the Project Coordinator.

However, observations and learning in light of the progress of implementation of the activities and achievements presented in project completion report, slide show presented at Anando office and through field visit and FGDs are discussed below.

3.1 Project office and staffs

The office of 'Anando' at Dighinala is well established and well decorated. Particularly, demonstrations of different MTO (Multi tire orchard) models, nursery, compost making, etc. in the office premise are very attractive and promising. Project staffs are competent enough and well aware of project activities particularly of biodiversity and forest conservation. There is practice of leaving job by project staffs frequently that might affect proper implementation of activities.

3.2 Activities and outcomes regarding objective -I

[Objective-I: Mass mobilizing for forest and biodiversity conservation]

Table 2: Activities and achievements in relation to objective-I as per project completion report (June'09 – Nov'11)

Activities to achieve objective-I	Target	Implemented	Achievement (%)
1. Institutional and organizational developemnt a) <i>Samity</i> formation	2	2	100
2. a) Awareness meeting on sustainable hill farming and nature conservation b) Community meeting on harmonious living and anti-tobacco campaign	16 (700) -	14 (557) 17 (944)	88 (80)
3. Monitoring & monthly coordination meeting	36	31	86
4. Half & annual output review workshop	06	04	100
5. Signboard (office, project site)	04	04	100
6. Publishing posters and leaflets	Poster 2600	2600	100
7. Field day	1	1	100
8. Inception workshop	1	1	100

Figures in parentheses indicate no. of participants

Observations and Learning: Implementation of activities and achievements regarding objective-1 as per project completion report (June 2009 – November 2011) are quite satisfactory. Signboards, promotional boards have been prepared and placed rightly. Contents of the posters were relevant but no leaflet was published. Samities have been formed properly. Fifteen members from both "Akjoda" *samity* and "Uddyogi" *samity* participated in the FGD. All the members were male except one female (widow). They were well aware of biodiversity and forest conservation. According to them, they did not know about manifold contributions of plants to human living and environment. They just cut trees from hills without any hesitation whenever needed to run their livelihood. But now they hesitate to cut a tree as they know its importance through participation in different activities of this project. They are now committed not to cut any tree unwisely/illicitly from the hills rather they will protect trees for better future. It was observed that non-participant people were not very aware of the project activities or biodiversity/forest conservation. So, it might be said that activities implemented so far increased awareness of project participants but not sufficient for increasing awareness of people of the locality at large.

It is notable here that, participation of women in *samity*, meetings, workshops, training, etc. was almost negligible. Project Coordinator mentioned that they had been implementing

activities considering the household as such women were involved in project activities. Thus participation of a male member from a household in *samity*, meetings, training, etc. considered as participation of all members of the household. One workshop was conducted involving both husband and wife from each household where role of each member of a family in project activities was discussed. Women actually feel shy to participate in meeting, workshop, etc. According to the male beneficiaries, there is no discrimination between male and female in their society. If needed, women can also participate in the *samity*.

Comments: Activities selected and implemented were quite relevant for achieving the objective-I. Awareness of the male beneficiaries has improved remarkably regarding biodiversity and forest conservation as they had direct participation. But the level of awareness of women (wives of male beneficiaries) and non-beneficiaries was poor in this regard. Though project participants have stopped ‘Jhum’ cultivation but it is still in practice by non-participants. Community meetings on anti-tobacco campaign implemented so far might have created some awareness among local people but not sufficient to stop it. It means volume of activities were not adequate for improving awareness of people of all categories. For ensuring higher awareness and motivation, such activities like awareness meeting, community meeting, anti-tobacco campaign, field day, *samity* formation (male and female, separately), etc. should be implemented in more number involving more participants (both male and female).

3.3. Activities and outcomes regarding objective-II

[Objective-II: Inputs for creating pilot site conserving location based forest]

Table 2: Activities and achievements in relation to objective-II as per project completion report (June’09 – Nov’11)

Activities to achieve objective-II	Target	Implemented	Achievement (%)
1. Establishment and maintenance of Anando-nursery	Nursery = 1 Seedling = 35000	1 33500	100 96
2. Planting material distribution among participants	42550	40950	96
3. Community facilities development (tube wells, road repairing, etc.)	4 HTW 6 latrines	1 ring well (IGS*) 6 latrines	100 100

*IGS = Infiltration Gallery System

Observations and Learning: One nursery has been established at Anando office premise. There were seedling/saplings of different vegetable, fruit and forest species in the nursery. Growth and performance of the seedlings was very good. Anando produced 33500 seedlings during last 3 years and distributed a good amount (40950) of seedlings/saplings among the beneficiaries for hill and homestead plantation. While visiting homesteads of the beneficiaries, vegetable, MTO, HBL (Homestead Boundary Lines) plantation were found in each homestead. Households already started harvesting of vegetable, pineapple, lemon, etc. from such plantation. They are getting nutrition and also some income from the homestead plantation.

Selected barren hills/valleys have been planted with 18 different fruit and forest species namely, Champa, Gorjan, Arjun, Neem, Amloki, Bel, Jam, Bohera, Kanthal, Hortoki, Jolpai, Ata, Jambura, Peyara, Mahogany, Komla, Chapalish and Kodbel. The plantation covered 100 percent area of 35 hills (97 acre) of Merung Mouza. The survival rate of the saplings of all species was very good in both 1st year and 2nd year plantation and the average survival rate was 97%. Growth of the hill plantations was very good and eye catching. Planting of three critically endangered species Champa, Gorjan and Chapalish is an appropriate initiative and very encouraging. An important lesson learnt by Anando was that, planting of saplings followed by mulching reduces sapling mortality.

An interesting observation was that, there is a practice of producing cross breed of fowl through crossing local hen (*Gallus domesticus*) with *bon morog* or red jungle cock (*Gallus gallus*). These cross breed fowls possess characteristics like *bon morog* that most of the time (day & night) they live on trees. They come down just for taking foods. They are very strong and resistant to diseases.

Anando distributed six latrines among its beneficiaries which would help improve sanitation of the households. One IGS ring well has been constructed instead of distributing 4 HTW (hand tube well). HTW were discarded as boring of pipe for HTW became difficult due to presence of stones in sub-surface layers.

Comments: Activities were relevant and adequate for achieving the objective-II i.e. establishment of a pilot site for development and conservation of hilly forest. Beneficiaries are satisfied with such plantations and looking for a better future. Utilization of homestead area through MTO, HBL, vegetable production etc. found promising as it providing nutrition and some income to the households. Such activities might have encouraged them to give up Jhum cultivation. It is notable that establishment of one such pilot site is not sufficient for creating a greater impact and/or development of the whole area. Besides, there is a need for supervision of the plantations in the pilot site for sustainable growth. Anando should continue its supervision and maintain the nursery and demonstrations of different technologies like MTO, HBL, etc. at its office premise for motivating people even if the project is over.

3.4 Activities and outcomes regarding objective-III

[Objective-III: Improving skills of the community masses towards IGA]

Table 3: Activities and achievements in relation to objective-III as per project completion report (June'09 – Nov'11)

Activities to achieve objective-III	Target	Implemented	Achievement (%)
1. Community meeting	23 (1380)	17 (1020)	74 (74)
2. Skill development training (Institutional development & Organizational management, Habitual restoration and bio-diversity conservation, Multi-tier orchard, Nursery establishment and management, Vegetative propagation techniques, Vermi-compost preparation, Poultry rearing, Cow rearing, Bee keeping, Boundary lines utilization, House cleave, house roof & foreyard utilization, Improved fire stoves, Management of water courses by bamboo plantation, etc.) and Exchange visit.	34 (1015)	25 (588)	74 (58)
3. Institutional and organizational development			
a) Samity formation	2 (35)	2 (35)	100 (100)
b) Samity savings	50400/-	114803/-	228
c) Revolving fund	-	499000/-	-
4. Exchange visit	2	1	50

Figures in parentheses indicate no. of participants

Observations and Learning: According to the report a total of 588 participants received training on 15 different topics which is quite impressive. It is not clear who these 588 participants were? Because, total number of project beneficiaries (group members) was 35. Probably these 35 members participated each of these 15 training programmes each year/time and/or some trainees were other than project participants. There was no information about duration of the training or whether trainings were conducted in consecutive days or in separate dates. However, participants of the FGD mentioned that they received 1or 2 days training on different topics like, rice production, poultry rearing, beef fattening, bee keeping, vermi-compost, nursery management, graft preparation, fish cultivation etc. When asked, none of them could answer rightly to some questions regarding these topics. It

indicates that training received by them were not sufficient to improve their knowledge or skill. It also indicates that they were not practicing all these technologies.

Regarding institutional and organizational development, it can be said that project participants are now well organized through two samity – “Akjoda samity” and “Uddyogi samity” respectively in Voirofa Para and Ghona Para. Interactions and unity among samity members found good. They are interested to strengthen the samity. There is one Chairman, one Secretary and a Treasurer (Anando staff) in each samity. Each members is saving Tk. 40/- per month. A revolving fund has been formed that supporting group members in operating IGAs. Loan is sanctioned after proper verification of the loan proposal and signed jointly by Chairman and Treasure. A member can draw a loan of highest Tk. 10000/- at a time. They have to repay the money in five installments without any interest. Members participated in the FGD mentioned that presently they are getting small amount of loan individually. It would be better if a big amount of loan is provided in the name of the samity so that they can start a business like transportation (bus), big shop/market of their own, small industry, etc. It will help them earn more, strengthen the samity and improve livelihood.

Comments: Topics of the training were very relevant with the objective and number of training conducted is appreciable. But adequacy and effectiveness of skill development trainings is questionable. Covering large number of topics in one or two days training would create some interest and awareness but not enough to improve knowledge and skill of the participants. Training on IGAs should be provided based on need and interest of the participants. Of course, there is a need of conducting training/workshop repeatedly on topics like, Institutional development & Organizational management, Habitual restoration and bio-diversity conservation, Multi-tier orchard, Boundary lines utilization, House cleave, house roof & foreyard utilization, Management of water courses by bamboo plantation, etc. for motivating people and bringing a change in their mind set towards conservation of forest and biodiversity. As regards to institutional development, formation of two samities, savings by group members and revolving fund for providing loan for IGAs was very promising. Actually sustainability of the biodiversity and forest conservation will largely depend on sustainability of these samities. It is possible, if members continue their savings, amount of revolving fund can be raised to BDT 25,00,000 (Taka twenty five lac), proper management of the fund and proper utilization of the loan through IGAs can be ensured for alternate livelihood.

3.5 Activities and outcomes regarding objective-IV

[Objective-IV: Enhancing capacity building of the individual and Anando- as a community development organization]

Table 4: Activities and achievements in relation to objective-IV as per project completion report (June'09 – Nov'11)

Activities to achieve objective-IV	Target	Implemented	Achievement (%)
1. Project orientation, planning and implementation strategy workshop	2	2	100
2. Technical training (Bio-diversity conservation, watershed management & agro-forestry)	2	1	50
3. Institutional training (Facilitation skills, CBO's development, PRA, Wildlife monitoring, Value chain analysis, etc.)	6	4	67
4. Study visit	3	2	67

Observations and Learning: Except the “Project orientation, planning and Implementation strategy” workshop, implementation of other activities was not up to the mark. One workshop was participated by husbands and wives from each of the families in the pilot site where discussions were made on how to proceed for bio-conservation, what would be role of family

members, role of neighbours, how to collect and transplant seedlings in the hills and its management. Such workshop is very important for creating awareness among local people and ensuring their cooperation and participation in implementing project activities. The technical and institutional trainings for project staffs were conducted mostly by PROSHIKA. However, Project Coordinator mentioned that rest of the training and study visit will be implemented in remaining six months of the project.

Comments: Activities i.e. training were chosen appropriately and in line with the objective. Technical and institutional training provided to project staffs greatly improved their skill and knowledge and capacity of 'Anando' as a organization as well, reflected through different activities (nicely set demonstrations on MTO, HBL, nursery, vermi-compost, normal compost, vegetable production, etc.) implemented in the office premise. Project staffs found to have good conception about project objectives and activities particularly of biodiversity and forest conservation.

3.6 Observations and Learning regarding Gender Issues

A FGD was conducted with wives of the male beneficiaries. A total of 10 women participated in the FGD. Women were not much aware either of biodiversity and forest conservation or project objectives and activities. They just know that the project is for planting trees/plants in the homesteads and hills. In fact women attended only one workshop where responsibilities of the family members in project activities discussed. Women mentioned that participation in samity, meetings, workshops, etc. is somewhat sophisticated work which is suitable for men. They don't like to waste their time in such activities as they have to do more works than men. Men usually work in the fields or hills but women perform both household works (both agricultural and non-agricultural) and field works.

According to women there is no gender discrimination in their society. Both men and women take equal amount of nutritious foods, they usually make decisions jointly, no discrimination in education, no violence against women and no restriction on women's movement. There is no existence of dowry, but there is a provision that mother of bridegroom is to pay some money to mother of bride as a cost of brought up her daughter. Later mother of bride returns double of that money secretly to mother of the bridegroom. Men usually purchase things needed for their family but women can purchase their personal items according to their choice. After purchasing daily essentials, men hand over rest of the income to their wives. Women have no or little income but they help husbands in income earning activities. Women are very interested for earning income. They are interested in different homestead based IGAs like, *Komor Tant*, handicrafts with bamboo, poultry, vegetable and fruit production, small industry like making jam, jelly from fruits, petty business (shop), etc. According to most of them '*komro tant*' is very profitable but presently they can not run it due to lack of capital, high price of cotton and other raw materials.

Though both men and women mentioned that there is no gender discrimination, but information given by them and as found in the bench mark report indicate that gender discrimination existed there. Normally women work 17 hours/day while men work 14 hours. There is no restriction on women's movement but their extent of mobility is very low. Women's participation in decision-making is very low. Their participation in marketing of produce and purchasing of household items is negligible. Wage rate of female labour is lower than men. Most of the women have no income of their own. In some way or other practice of dowry is present. So it can be said that women as well as men in the project area are not aware of gender issues.

4. Impacts

It is early to measure at this stage the actual impact with respect to biodiversity restoration and livelihood. However, some impacts as generated through activities of the project are as follows.

- Project participants become much aware of biodiversity and forest conservation as they have stopped Jhum cultivation and illicit/unwise cutting of plants/trees from the hills. It can also be realized through their statement that they now hesitate to cut a tree as they know importance of a tree for maintaining better livelihood and environment.
- Participation in different skill development trainings and study visit certainly improved skill and knowledge of the participants to some extent as some of the beneficiaries utilizing training experience in IGAs.
- Almost barren hills and valleys become green with plantation of different tree species by project participants and naturally grown plant species (trees, shrubs and herbs) as owners (project participants) of these hills did not practice 'Jhum' or collected plants for fuel since their involvement in the project. Biodiversity in these hills increasing naturally as different types of birds, small animals, reptiles likely to make habitat there.
- A positive impact on livelihood of the beneficiaries could be realized as 100 percent of the FGD participants mentioned that their income, nutrition intake, children's education, availability of fire wood and access to credit had increased slightly, while access to training, technical knowledge & skill, participation in IGAs, access to project office increased moderately and only participation in group meetings increased highly.
- Beneficiaries are now organized through two *samity* namely, "Akjoda" *samity* and "Uddyogi" *samity*. They are interested to strengthen the *samity* and thinking to do something collectively for improving their livelihood.
- Anando Dighinala office premise itself has become a model of bio-resource management unit along with its skilled project staffs.

5. Sustainability potentials

- Different fruit and forest species as planted in the selected hills and in the homesteads if grow and conserved properly certainly will increase plant-biodiversity in the area which in turn will increase total biodiversity (both plant and animal) in the hilly area.
- Formation of *samity*, savings by group members and the revolving fund are the most striking events with respect to sustainability. It can be said that sustainability of the biodiversity and forest conservation will largely depend on sustainability of the *samity*. Group members are dreaming a better future particularly of alternate livelihood through their *samity*.
- Skilled members/groups on different IGAs and bio-resource management developed such that they can continue the project activities after termination of the project.
- Anando – as an organization to develop as a promotional and supervising entity along with financial, technical and input support capabilities for biodiversity and forest conservation in CHT.

6. Weakness/Areas that need to be strengthened

An attempt was made for determining the weakness and strength as well as opportunities and threats regarding the project through SWOT analysis. Findings are presented below in tabular form.

	HELPFUL (for your objectives)	HARMFUL (for your objectives)
INTERNAL (within organization)	<p>Strengths</p> <ul style="list-style-type: none"> • Well set project office • Project coordinator technically sound (Agriculturist) • Skilled project staffs • Good team spirit • Staff support from Anando's other project • Activities are relevant to respective objectives • Provision for capacity building of project staffs • Fund and technical support from Arannyak Foundation 	<p>Weakness</p> <ul style="list-style-type: none"> • Gender balance not maintained among project staffs • No participation of women in training, meeting, <i>samity</i>, etc. • Skilled staffs leaving job mainly for low salary • Insufficient skill development training for beneficiaries • Inadequate training management • Inadequate bench-mark information particularly regarding livelihood assets, gender issues, animals and birds present in the area, etc. • No data regarding production, consumption and income from homestead production (after intervention)
EXTERNAL (Outside organization)	<p>Opportunities</p> <ul style="list-style-type: none"> • Arannyak Foundation – for financial and technical support • PROSHIKA – for supporting human development • BARI, DAE, DOF, CHT Board – for providing input (seed/seedling) support • Krishi Bank – for credit support • Local government – for administrative and legal support 	<p>Threats</p> <ul style="list-style-type: none"> • Socio-political unrest prevailing in the area • Conflict between tribal & Bangali • Flash flood • Tobacco cultivation • Jhum cultivation

7. Recommendations

Considering satisfactory progress in implementation of the project activities, promising growth of the plantations in the homesteads and hills, prospective institutional and organizational development of participants, some visible impacts among the participants and above all competency and commitment of 'Anando' as an organization, it is suggested that the project may be extended for next three years provided following recommendations are taken into account.

- Project activities are now at a stage that trees planted in hills and homesteads are just flourishing; some plantations in homesteads like pineapple, papaya, etc. coming into production; above all *samity* members (beneficiaries) are trying to earn income through different IGAs for maintaining livelihood out of Jhum cultivation. So, withdrawn of project support and supervision may be harmful towards achieving the ultimate objectives of the project.
- There is lack of information in the bench-mark report regarding livelihood assets (human capital, physical capital, social capital, financial capital, etc.), animal biodiversity and gender issues. Data on total plant-biodiversity is also lacking. Another baseline survey is needed in the present pilot site for generating data in these regards that can be used for measuring impact on livelihood and changes in animal biodiversity afterwards.
- Attempt should be taken to collect and multiply planting materials of all endangered plant species and grow them in all possible places including the hills/valleys and homesteads.
- It is well known that tribal women are more active and do more work than men. Hence, active participation of women in all project activities i.e. meeting, workshop, training, study visit, activity implementation, etc. should have to be ensured for sustainability of the project activities. A female "Extension worker" may be appointed for ensuring women's participation in project activities.
- Separate *samity* can be formed for women to organize them and involve them in IGAs along with supervised credit and technical support. IGAs like, komor tant, handicrafts with bamboo, pickles, jam/jelly, etc. may get priority in this case.
- A study may be taken for measuring tribal women's level of empowerment and their extent of participation in IGAs which will help measuring changes in their level of empowerment and extent of participation in IGAs due to project interventions.
- Attempt should be taken from project side and also by beneficiaries to increase the amount of the "revolving fund" as much as possible and ensure proper utilization of the fund for IGAs.
- Trainings should be given to beneficiaries in more organized and effective way. In case of training on IGAs, participants to be selected on the basis of their interest and feasibility for particular IGA. A training need assessment can be done prior to this. Duration of training on each IGA should be such that participants can learn it properly. However, training/workshops on topics like, Institutional development & Organizational management, Habitual restoration and bio-diversity conservation, Multi-tier orchard, Boundary lines utilization, House cleave, house roof & foreyard utilization, Management of water courses by bamboo plantation, etc. should be repeated each year involving all participants.

- Skilled project staffs are strength of an organization and essential for efficient implementation of the project activities. So, appropriate measures should be taken to stop drop out of skilled staffs.
- Best performer among the project staffs and beneficiaries may be sent to India or Nepal for gathering experience on bio-resource management and hill farming.
- Data recording on different aspects particularly on production, consumption or utilization and sale of homestead produces (both agricultural and non-agricultural) is very essential. Project staffs should visit each of beneficiary households at least twice a week for recording data.
- Measurement of biodiversity using Shanon-Wiener index (H) or Simpson index (D) would be needed for a better scientific presentation. Proper data collection is required for computing such index. Training can be provided to project staffs on biodiversity measurement and data collection procedure.



FGD with project staffs



Visiting Voirofa Bridge Para pilot site



Participants in FGD



FGD with women



The barren hill now become green



Homestead utilization



Seedling raising at homestead



Multi-tiered orchard



Homestead boundary utilization



Homestead boundary utilization



Seedling raising in the nursery at Anando office premise



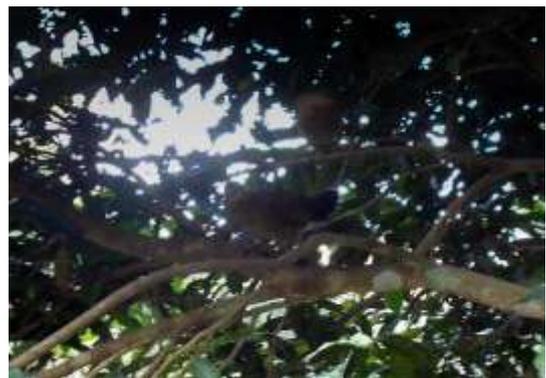
Vegetable production at Anando office premise



Cross breed fowls with bon-morog



Bon morog (*Gallus gallus*)



Cross-breed fowls living on tree