PARTICIPATORY 3 DIMENSIONAL MODEL in LAND USE MANAGEMENT

The Ukhrul District Experience

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A Collaborative initiative of ENRAP and NERCORMP

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NINGSHILAKHAIRA !!!

(Thank You Very Much)

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EXECUTIVE SUMMARY

The Participatory 3-Dimensional Model (P3DM), as a participatory approach to land use management was introduced in the Ukhrul District Community Resource Management Society (UDCRMS), a project unit of the North Eastern Region Community Resource Management Project (NERCORMP), a joint project of the Government of India (NEC/Ministry of DoNER) and the International Fund for Agricultural Development (IFAD). P3DMs were constructed in the villages of Ngainga, Hundung Godah, Soraphung, Talui and Shirui Kashong range/ cluster, Ukhrul District.

In order to capture the experience of the P3DM in land use management in Ukhrul district, ENRAP together with NERCORMP conducted a systematization process of documentation from 28th February 'til the 6th of March 2006. The general objective is to answer the basic question on how P3DM is used in land use management in villages where they are installed.

The Systematization Documentation Team (SDT) composed of four persons, visited the villages of Ngainga and Hundung Godah. Based on the primary and secondary data/information gathered, the team observed that overall, the P3DM has brought changes to these communities among others, deeper understanding of their village geography, improved village communication and planning capacity, improved land use management, stronger community cohesion, and better access to basic services from line departments. The benefits derived from the P3DM according to the people, outweigh the cost and effort put into the construction of the model.

It was further observed that land use, especially the enforcement of policies to ensure judicious use of natural resources, was effectively carried out with the participation of the people at the village in cooperation with villages at the cluster level together with the active involvement of concerned government line departments.

However, the use of P3DM is not fully maximized. In each community it has become static. Because of the lack of a long term perspective land use plan using the P3DM, its use has been sporadic and on a pragmatic basis. Participatory monitoring and evaluation using the P3DM is absent in both villages.

Based on the interaction with the villagers, the team clearly observed that the P3DM can guide the communities towards strategic land use. The villagers have taken a strong sense of ownership of the P3DM. The good experience on P3DM has also reached other project villages. They requested the project staff to assist them to construct a P3DM. There were also non-project villages that requested the project to provide them with training and help them construct a P3DM in their villages. They expressed willingness to shoulder the cost to be incurred in the construction of the model.

Unless the project takes a more comprehensive perspective on the value of P3DM in land use management and continually equip the staff and the community with the required technical capability to handle P3DM, additional construction of P3DM will not be fully optimized.

The challenge now is how to make P3DM a dynamic approach in land use management. How it can be nurtured to continually contribute to the development of the villages even after Project life.

ABBREVIATIONS USED

CO	Community Organiser
CC	Community Coordinator
DoNER	Ministry of Development of North Eastern Region
DST	District Support Team
ENRAP	Knowledge Networking for Rural Development in Asia/ Pacific Region
FD	Forest Department
FGD	Focus Group Discussion
GoI	Government of India
HQ	Headquarters
IFAD	International Fund for Agricultural Development
MP	Member of Parliament
NaRM-G	Natural Resource Management Group
NEC	North Eastern Council
NERCORMP	North Eastern Region Community Resource Management Project for Upland Areas
NGO	Non Governmental Organization
NMCIREMP	Northern Mindanao Community Initiatives and Resource Management Project
NRM	Natural Resource Management
P3DM	Participatory 3 Dimensional Model
PHED	Public Health Engineering Department
P-NaRM-G	Primary Natural Resource Management Group
PSU	Programme Support Unit
PWD	Public Works Department
SC	Shifting Cultivation
SDATA	Society for Development Alternative in Tribal Area
SDT	Systematization Documentation Team
SHG	Self Help Groups
UDCRMS	Ukhrul District Community Resource Management Society
UNOPS	The United Nations Office for Project Services
VDC	Village Development Council
V-NaRM-G	Village Natural Resource Management Group

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1. INTRODUCTION

> ***"Management of the natural resources has to be addressed within the process of development, not as an after thought because the gap between environment degradation and policy shift is widening daily."***
>
> Natural Resource Management Sector, UCDRMS

The North Eastern Region Community Resource Management Project for Upland Areas (NERCORMP) is a joint initiative of the Government of India (GoI) and the International Fund for Agricultural Development (IFAD). The North Eastern Council (NEC) and the Ministry of Development of North Eastern Region (DoNER) represent the Government of India in the Project set-up. The United Nations Office for Project Services (UNOPS) located in Bangkok is the Cooperating Institution for project supervision in implementation.

The Project is operating in two districts each in the states of Assam, Manipur and Meghalaya, namely Karbi Anglong and North Cachar Hills in Assam, Senapati and Ukhrul in Manipur, and West Garo Hills and West Khasi Hills in Meghalaya.

The overall objective of the Project is *to improve the livelihood of vulnerable groups in a sustainable manner through improved management of their resource base in a way that contributes to protecting and restoring the environment*. The Project attempts to achieve this overall objective through a set of eight specific objectives, one of which is "***to make people more aware of the need to preserve and regenerate natural resources, particularly forests and biodiversity***".

The Natural Resource Management Sector of the NERCORMP, aims to take a strategic approach in agricultural intensification, diversification and system integration within the available production system.

In Ukhrul District of Manipur, inspite of providing several trainings and workshops on resource management, certain issues like - indiscriminate felling and burning of trees and forest, free cattle grazing, erratic jhum practices without fire line protection and insecurity of land holding system - still prevail among the communities. It was realized then that effective land use planning needs to be carried out involving active participation of the community, village councils and line departments at village or micro water shed levels. Thus, Ukhrul District Community Resource Management Society (UDCRMS) introduced the Participatory 3 Dimensional Model to address the above concerns. P3DMs were constructed in the villages of Ngainga, Hundung Godah, Soraphung, Talui and Shirui Kashong range/ cluster.

In order to capture the experience of the Ukhrul district, ENRAP together with NERCORMP came together to conduct a systematization process of documentation of the P3DM as implemented by UDCRMS. This report then outlines the outcome of the systematization exercise conducted on 28th February 'til the 6th of March, 2006.

2. OBJECTIVES

The general objective of this systematization process of documentation is to answer the basic question on how P3DM is used in land use management in villages where they are installed.

Specifically it wants to seek answers to the following questions:

1. How has P3DM helped improve land use management in terms of planning, implementation and monitoring & evaluation?
2. What changes came about due to P3DM?
3. How has P3DM brought about community cohesion/ consensus building?
4. How do the villages use the P3DM after post construction?

3. METHODOLOGY

The Team

The Systematization Documentation Team (SDT) was composed of 4 persons. **Yolando C. Arban**, M&E Officer of the Northern Mindanao Community Initiatives and Resource Management Project (NMCIREMP) of the Philippines facilitated the SDT's work. Other members included **Adrian Marbaniang**, M&E Officer of North Eastern Region Community Resource Management Project for Upland Areas (NERCORMP), **Thingreiphi NG**, Natural Resource Management Organizer of Ukhrul District Community Resource Management Society (UDCRMS) and **Chinaorar Horam**, Community Coordinator of the Society for Development Alternative in Tribal Areas (SDATA).

Tools and Strategies

Considering the time limitation and the areas to be covered, the team came up with a matrix of tools and strategies for data gathering (Annex 1). From a broad topic of NRM and P3DM initially identified by the UDCRMS for systematization process of documentation, the SDT narrowed it down to: looking into the Ukhrul District's experience in using P3DM in land use management. Three key questions were raised which guided the SDT in identifying the indicators, the data to be gathered, the tools for data gathering and the sources of data (Annex 1).

There were two sources of data/information: primary and secondary. The primary data/information were collected from members and officers of the Natural Resource Management Group (NaRM-G), Self-Help Groups (SHG), village authorities, and from the village folks, whom the SDT had encountered. The tools used in gathering primary data/information included focus group discussions, key informant interviews, story telling, transect walk and site verification. The SDT gathered secondary data from the minutes and resolutions of NaRM-Gs and Village Authorities of the villages covered by the systematization process of documentation. The SDT also reviewed and referred to UCDRMS documents and reports. To guide the SDT in discussions and interviews, a Focus Group Discussion (FGD) guide and Key Informant Interview guide were formulated (Annexes 1 and 2).

Data analysis utilized comparative situational observations before and after project intervention. Triangulation method was used in counterchecking data/information gathered from one source with data that came out from other sources.

Areas Covered

Due to time constraint for area visit, the team decided to cover two of the four villages with P3DM. The two areas selected represent an advanced and a weak village as identified by the UCDRMS. This selection criterion approximated a relatively comprehensive picture of actual application of and corresponding effects of P3DM in organizationally advanced or weak village. Ngainga was chosen as the organizationally advanced village while Hundung Godah as the organizationally weak village.

NGAINGA VILLAGE
This Village is located in the western part of Ukhrul district, which is approximately 18 kms away from the district headquarter. The village has three P- NarM-Gs under V-NaRM-G and 5 SHGs under a village federation. It has a total area of 2348.17 Hac. The highest altitude is 1991 metre a mean sea level and lowest altitude is 1125 metre a mean sea level. Presently 160 households reside in this village. The people depend mostly on agriculture, forest produce and weaving. The Project came to this village in January 2000 and the P3DM was constructed from 1st -5th Nov 2004.

HUNDUNG GODAH VILLAGE
Located in the southern part of Ukhrul District, 65 km. away from the district headquarter is the Hundung Godah village. This village consists of 52 households, of which 45 households are in the NaRM-G. The total area is 2205 sq hac. The lowest and highest altitude is 520 metres and 1560 metres a mean sea level; the primary mode of cultivation is shifting cultivation. The main source of income comes from honey, poultry, wild vegetables and wild animals. The project entered the village in 2001 and formed one NaRM-G and three SHGs.
P3DM was introduced in Februarv 2005.

Respondents

There were a total of 55 participants in the focus group discussion and 14 key informants in the key informant interviews.

Table 1: Number of Participants in the FGD by Village

Representation	Village		Total
	Ngainga	Hundung Godah	
NaRM-G	10	12	22
Village Authority	6	2	8
Self Help Group	5	7	12
Church	4	1	5
Youth	3	0	3
Lead Farmer	5	0	5
Total	33	22	55

Table 2: Number of Key Informants Interviewed by Village

Representation	Village		Total
	Ngainga	Hundung Godah	
NaRM-G Committee	3	2	5
Village Authority	2	2	4
Self Help Group, Chairperson	2	1	3
Church	1	0	1
Youth	1	0	1
Total	9	5	14

4. P3DM APPLIED

Mobilizing the Community: Overcoming Apprehensions

The UDCRMS introduced the P3DM to selected villages for a better land use management. Since P3DM is a participatory approach, the concerned villages were involved through the NaRM-G's established by UDCRMS.

The NaRM-Gs were informed that UDCRMS was going to assist them in constructing a P3DM. In the beginning the communities were apprehensive of the P3DM because of the strong insurgency problem in the region. They were afraid that the army would confiscate it if they would know that such a model existed.

To overcome problems of constructing a P3DM, UCDRMS focused on issues relating to NRM and how the P3DM could assist the communities towards better land use planning and management. In H. Godah village the people were interested in the P3DM because it would help them understand and identify the forest area, terraceable area, location of rivers and streams and water sources. In H. Godah village, they readily accepted the P3DM as the project was more aware as on how to deal with the community from its past experience in Ngainga.

Getting the Work Done

The project staff of NERCORMP were trained on P3DM for twelve days by the Philippine Association for Intercultural Development (PAFID) from the Philippines. Two staff of UDCRMS also participated in the training, which was conducted in Satsagre village in West Garo Hills district in Meghalaya under NERCORMP. The training was split into two, the theoretical part and the practical uses part.

The UDCRMS first carried out a weeklong training programme on P3DM to partner NGOs. Through the NGOs, villages were identified for the construction of the P3DM. Elders from the selected villages were invited to the Development Support Team Office at Ukhrul to discuss further issues related to and the mechanics how to develop the P3DM. During this time they were asked to demarcate their village boundary on a topo sheet map, which thereafter was blown up ten times. The box below shows the process of constructing the P3DM as experienced by the selected villages:

5.

In the construction of the P3DM, the blown up map was laminated. Carbon pasting was done by the people in the community who marked the contour lines unto the rubber sheet. Each contour line was traced into separate rubber sheets starting from the lowest to the highest altitude. Once the lines had been traced the next step was to cut along the contour line of the sheets**.** The cut sheets were then pasted and nailed over a table starting from the lowest to the highest altitude. When the pasting was completed the rubber sheets were sand papered and a paste (mixture of lime and fevicol glue in the ratio of 2:1) was applied over the surface of the model.

The model was painted white after it dried. Thereafter; the community folks started marking the village boundary with a string or yarn. Then other land uses were marked using different colors. The community folks calculated the total area of the village and the areas of the different land uses from the model. The scale used to find the area was on the basis of 2 sq. cm = 1 hectare.

During the whole process there was active participation from participants drawn from the NaRM-G, SHG, Village Council, church and the youth.

Overall, the P3DM as applied in the villages of Ngainga and Hundung Godah has brought to these communities a deeper understanding of their village geography, improved village communication and planning capacity, improved land use management, stronger community cohesion and access to basic services from line departments. The benefits derived from the P3DM by the villages outweigh the cost and effort put into the construction of the model. However, its use is not fully maximized. The P3DM in each community has become static.

Changes in the Villages

The following section discusses the changes in the communities before and after the project as narrated by the respondents and confirmed by the team as it went over the village records.

5.1.1 Deeper understanding of the Village Geography

In the two villages visited inter-village marriages have been practiced. The team discovered that there were several women from other villages who had been residing in these villages for the last fifteen to twenty years. These women were not aware about the village geographical area. It was only after the P3DM, that these women learned the spatial information of the village. The bright colors of the P3DM also attracted children in the village who from time to time inquire from the village elders about the model, particularly its uses. Today, villagers are able to identify areas around the village and have known the names of the creeks, rivers, forests; water shed areas, owners of jhum plots, the altitude and areas of household settlements.

Those involved in the construction of the P3DM immediately discovered the village boundary, the location of forests, water sources, rivers and areas ideal for terrace construction. At a glance they could see now the entire village. Before the village leaders knew their land but could not identify nor name the exact location of rivers, forests and village boundary. The P3DM has helped the communities know the altitudes of every slope, hills and mountains and consequently, guided them in aligning the roads and even locating water sources.

5.1.2. Improved Village Communication and Planning Capacity

Before the project's intervention, communication generally comes from the village authority represented by clans. In this scenario information hardly reached the common man. With the introduction of NaRM-Gs where representation of both husband and wife is required from each household, information is now available practically to all village members. Village council authorities in all project villages visited are members of the NaRM-Gs.

The P3DM has become a reference for interaction among the village council, NaRM-G members and SHG members. A particular SHG group in H. Godah for instance, requested the village council for a plot of land for their banana plantation. The village council sought the help of the P3DM to identify a suitable area for the SHG's banana farm request.

The P3DM has also brought the village authorities and the NaRM-G to a common understanding towards better resource management. Whenever the NaRM-G's

makes certain policies like control of cattle grazing, the village councils are most accommodating. With a clear visualization of the land through the P3DM the community today know where exactly to construct terraces, roads, areas for settlement, conservation of forests/ watershed/ water source, demarcation of village boundary, fire line and jhum plots.

5.1.3. Improved Land Use Management

Basically the P3DM has improved the communities' capacity in natural resources use in terms of jhum and terrace cultivation, conservation of forest and watershed, plantation of bamboo reserves and kitchen gardens. New policies to protect and conserve their natural resource were also formulated.

5.1.3.1 Natural Resource Use

The table below shows the situation of the natural resources use in the villages of Ngainga and H. Godah before and after the projects intervention:

Table – 3: Natural Resource Use Before and After the Project

Natural Resource Use	Before		After	
	Ngainga	**Hundung Godah**	**Ngainga**	**Hundung Godah**
Jhum	Random cultivation, one time plantation	15 jhum plots, one hectares per household	121.58 hectares, prolonged cultivation up to three years with the support of bio compost	Reduced plots, 1 plot assigned for banana cultivation, 1 plot reserved for forest conservation
Terrace Cultivation	Mono crop plantation	12 households	Mixed cropping	12 households and plan to increase
Forest reserve	131.80 hectares	1 jhum plot	142.92 hectors, introduced thatch reserve	2 jhum plots
Water conservation /Water shed reserve	Cultivation around the area, unable to distribute water to all households, Awareness level was low	Cultivation around the area	No cultivation in the area, distribution of water supply to all households Awareness level is high	Planted wild banana around the catchment areas
Bamboo reserve	Unorganized bamboo plantation	Plantation around households	142.92 hectares of Ngatha bamboo reserve	Planted around 1 hectare in compact area
Kitchen garden	Existed around households and practiced single cropping	Cultivation in small area	Practice multi cropping and maintain medicinal herbs in their kitchen gardens	Increased the area of vegetable production, surplus is sold in the local market and maintain medicinal herbs in their kitchen gardens

a. *Jhum Modification* – Previously slash and burn cultivation was practiced randomly in both villages. Households shifted from one jhum plot to the other on a yearly basis. During the team's visit, the villagers confirmed that they have modified jhum

practices as a result of their awareness on natural resource uses. Some of the modifications are as follows:

- Prolonged cultivation in a single jhum plot for at least up to 3 years. This practice is being complimented by bio composting to retain soil fertility.
- New crops like banana, potato and cabbage have been introduced.

b. *Terrace Cultivation* – The importance of terrace cultivation encouraged the villagers to be more conscious to plan the construction of terrace areas with the help of the P3DM. However villagers especially in H. Godah were not able to pursue their plan because irrigation is not available. In order to convert the targeted areas into terrace cultivation, the villagers have to construct 6 kms. of minor irrigation. In the case of Ngainga where water is readily available, the villagers have expanded their terraces and have started mixed and winter cropping in the given area.

c. *Forest reserve* – After constructing the P3DM the community realized that their forest is diminishing and that there is a need to protect, conserve and restore some forest areas. Around 20,000 trees both local and introduced species had been planted with the support from the forest department and local contributions in Godah village. In Ngainga the elders and the young were engaged in planting trees covering approximately 11 hectares.

   While on transit walk in Ngainga, the team came across to a group of old women on their way to collect wild vegetable plants for the Tangkhul Baptist Churches Association conference. The presence of wild vegetables is an indication that the forest is still producing more than enough wild edible plants.

d. *Water conservation /Watershed reserve* – In Ngainga, the team experienced having a good bath and clean low cost latrines. This was made possible because of proper distribution of water supply to all households. Awareness level on water conservation drastically increased and today the communities have started to conserve the catchment areas by not cultivating around it. In Godah the communities planted wild banana trees around the water source.

   The pastor of Ngainga, Mr. Ramthing, was proud to say that for the first time the village would be able to host the Tangkhul Baptist Churches Association conference for a period of three days with around 3000 expected delegates from Ukhrul district. Mr. Ramthing was very confident that hosting the conference will be successful because water is available in the village.

e. *Bamboo reserve* – Bamboo has always been an important species for the tribal communities because of its many uses in the household. In H. Godah, the community has planted over a hectare of bamboo which will be used to reconstruct houses in the new resettlement area.

   In Ngainga, the people see more and more the importance of bamboos not only for household use but also for community functions like construction of the stage, tents and church ceiling. They also use bamboo for handicraft like baskets, mats, handle of dao (knife). The bamboo shoots are used as food. They cultivated different bamboo species widely used by the villagers. Understanding the importance of bamboo, the people of Ngainga have passed a resolution prohibiting the selling of bamboo to and extraction by outsiders.

f. *Kitchen gardens* – In each of the villages visited, there is a variety of vegetables served during meals which were harvested from the kitchen gardens. To some extent certain households sell their garden produce in the local market. In Ngainga, the SHG members organized a market day where they sell their garden produce. The undertaking happened only once because there were no buyers from the village. The SHG Federation has discussed this issue and is hopeful that it will be able to organize a market day in the district headquarter at Ukhrul.

Prior to the project's intervention kitchen gardens were small, unorganized and practiced single cropping. Presently, the households have increased the area of the gardens and are practicing multi cropping: planting onions, cabbage, potatoes, peas, mustard leaf, coriander leaf and garlic. Vegetables are made available all year round.

5.1.3.2 Policies and Mechanisms for Enforcement

For the indigenous communities, forest is key to their survival. For generations the forest has provided them with food, water and medicine. It is not surprising that policies to protect the forest did exist before the project. Among the policies the team discovered are the following:

Table- 4: Policies on Natural Resource Use Before and After the Project

BEFORE		**AFTER**	
Ngainga village	**Hundung Godah village**	**Ngainga village**	**Hundung Godah village**
Restriction to: • Cutting of timber by outsiders • Control setting of forest fires • Land committee to deal with inter village boundary disputes & other cases relating to the land.	• Reserved forest • Control of forest fires • Wild life sanctuary	• Planted 5 tree saplings on forest per day by each NaRM-G member. • Have resolved to plant trees along the road side. • Carry out jhum cultivation in compact areas • Raised a nursery of local tree species • Water supply management committee • Forest management committee • Conservation of water source • Policy on jhum management • Control of cattle grazing • Banned the use of poly bags, chemical fertilizers, pesticides and weedicides. • Road committee	• Control of timber logging • Extension of reserved forest • Fish and wild life sanctuary • Water source conservation • Regulation on hunting • Conservation of trees along the water ways • Banned the use of pesticides, chemical fertilizer, weedicides. • Raising of nurseries of both local and other species • Kitchen gardens in all households.

To enforce these policies both villages have instituted mechanisms like:

- For failure to abide by the rules and regulations set by the NaRM-Gs, fines ranging from RS 500 to 20,000 have been imposed. Specific amount of fines varies from village to village depending on the gravity of the issue and extent of damage.
- The neighboring villages which are not under the project are informed about the rules and regulations. (For example: To conserve the rivers that pass through many villages, the NaRM-Gs addresses the issue at the cluster level.)

- All policies of the NaRM-Gs are first shared with the village councils for further suggestions and approval before they are finalized.

Community Enforcement of NRM Policies: Case Story from Ngainga

In Ngainga, the village authority exacted a fine of RS 18,000 to 5 youths from a neighboring village for setting the forest on fire. The villagers strictly adhere to their natural resource protection policy.

These 5 young men on their way home from Ukhrul were having fun by setting fire on the forest of Ngainga. A small boy nearby who was tending his cattle, informed the young men that setting the forest on fire is not allowed in the village and that offenders will be heavily fined. But, these adventurous young men did not pay attention to the small boy and went on setting the forest on fire. The act destroyed a big portion of the whole pine forest of Ngainga.

The boy reported the incident to the youth club. After listening to the details of the story from the boy, the club decided to exact a heavy fine of RS 20,000 to the offenders for burning the forest and for not listening to the boy's advice. Club members were taken aback by the act of these 5 young men who knowingly burned the forest.

Negotiations were made between the parents of the offenders and the case to the village council. Since the case was already at the village council level, the village council of the neighboring village was called for a resolution meeting. Again, the parents requested for a lower fine. The village council agreed that the fine shall be reduced to RS 18,000.

With that incident, Ngainga has never experienced forest fires again.

5.1.4 Stronger Community Cohesion

The P3DM in Ngainga village, aside from raising the people's awareness about their local geography, has also brought the community together to learn how to protect and preserve their area. In the past, most of the decisions were confined to a few individuals in the village council mostly represented by clans. However today through the NaRM-G all households are made aware of and are involved in the decisions being made.

In the case of H. Godah, the P3DM has assisted the community in locating areas for resettlement of each household with enough space for a kitchen garden, low cost latrine, sheds for domestic animals and poultry. Thus, the household's dream of settling in one area is in the process of being fulfilled.

A Community Leader Tells His Story: Realizing a Dream of One Community

"If there is no unity and peace, there is no development" begins Mr. L. Leishisan, the local community organizer of the Hundung Godah Village***. "I spent my 66 years in this village and it is my dream that we settle in one area".***

Mr. L. Leishisan donated 12 acres of his banana farm for the new settlement. The presence of two settlements prompted him to give a portion of his treasure. According to him, for 26 years there was a sort of "tug-of-war" between the two areas in the village. The village head literally transferred his house from one area to another to attend to his people. With this, the village head together with the village folks decided to resettle in a common area.

The P3D model helped illustrate their dream. Through it, they located the best area to resettle which is close to the main road and where supply of water is abundant. Everybody agreed to the new area of settlement.

5.1.5 [illegible]ce

The project has brought about the creation of village level committees such as road and forest committees. Through the project's facilitation, these committees have been linked to the Government line departments such as the Forest Department (FD), Public Works Department, Public Health Engineering Department (PHED) and also to the Member of Parliament (MP) fund.

In Ngainga, the committees have been able to access seedlings from the FD, road alignment assistance from the PWD and technical support for water supply from PHED. In H. Godah they were able to access seedlings from the FD and assistance for road construction from the MP funds.

Both villages used their knowledge generated from the P3DM in road alignment.

5.2 Sustaining P3DM

The P3D model in both villages has been static. The data attached to it since its construction has not been updated. Although the P3DM has brought about changes in the villagers perspective of land use management and in initiating activities to protect and preserve their natural resources, it was not regularly updated and enriched. It was also observed that there was no long term land use perspective plan where progress can be monitored and evaluated on a regular basis. The project has not explored the potentials of the P3DM in the long term land use management.

Based on the interaction of the team with the villagers, it surfaced that the P3DM can guide the communities towards strategic land use. The villagers have taken a strong sense of ownership of the P3DM. The experience inspired other project villages to undergo a similar endeavor and have requested the project to assist them construct a P3DM. It was learnt also that there were non project villages that have requested the project to provide them training and assistance to construct a P3DM in their villages and expressed willingness to shoulder the cost.

Unless the project takes a longer and comprehensive perspective of P3DM in land use management and continually equip themselves with the required technical capability to handle P3DM, additional construction of P3DMs will remain not fully optimized. In addition, it would be beneficial for the project to construct a P3DM at the cluster or ecosystem level.

The challenge now is how to enrich the P3DM, transform it into a dynamic approach in land use management, and how it can be nurtured to continually contribute to the development of the villages.

6 LESSONS LEARNED

Through the systematization process of documentation the team realized the following:

- The P3DM is an effective participatory method in land use management. It should be taken as a dynamic approach that has to be regularly updated for effective and efficient use.
- For effective implementation of the project, project structures like the NaRM-G and SHG have to be incorporated into the village traditional institution.
- Enforcement of policies on natural resource use cannot be put into effect without people's participation.

- Management of natural resources should go beyond village boundaries. It should take a cluster or ecosystem approach regarding outlooks, plans, policies and enforcement.
- Development of natural resources should also have the active participation of the government line departments.

Other lessons learnt on systematization process of documentation is the use of a framework simplified in a matrix form. The introduced matrix provided direction to the team as to what data to gather, how to gather and where to gather them in a systematic way. Through the matrix, the team was more focused in the task. When done systematically, documentation of field experiences can be completed within a short time frame.

7 CHALLENGES AND OPTIONS

7.1. Towards a Dynamic Use of the P3D Model

It is suggested that the Project, together with the concerned villages will work on the following:

a. Strategically – To come up with a perspective land use plan on a long term basis. From this plan, development can be monitored or evaluated on an annual basis. There are two options in conducting participatory monitoring and evaluation to identify changes in the spatial data /information. It can be through the
   - Use of **transparent plastic sheet**; or
   - Use of **high resolution digital photography** combined with **on screen digitizing** (Participatory Geographical Information System or PGIS).

   Whichever option the Project shall adopt, the staff and the communities should be trained.

b. Operationally – The use of the P3DMs can be maximized in both villages. One, it can be used as a learning tool for understanding the local geography and resource use. This can be incorporated into the local school curriculum where the elders who were involved in the construction of the P3DM can act as resource persons. Second, the P3DM can be used to continually raise the awareness of the community on natural resource management and in keeping track of natural resource issues like land holding. It would be helpful to make a standard operating procedure that visitors shall be oriented to the P3DM before moving to the area.

7.2. Towards Improving some Project Strategies on Natural Resource Use

There are some issues raised by the two villages that need the project's attention. The villagers are in search for additional technical knowledge and skills on bio-organic fertilizer production and its appropriate application to the type of soil in their jhum plots or kitchen gardens. They also need assistance in better ways to market their surplus from the kitchen gardens and products from jhum plots.

While, there is an increased awareness on the expanding construction of terraces, the villagers see the need for minor irrigation. The project, together with the community have to find solutions using indigenous knowledge and skills and locally available resources to

address this concern. Probably, the use of bamboos as pipes can be considered in constructing the minor irrigation.

8. CONCLUSION

The P3DM is a user friendly participatory approach in land use management. In the villages visited, P3DM has brought about changes in the villagers' life in terms of acquiring a deeper understanding of their village geography, an improved village communication and planning capacity, an improved land use management, a stronger community cohesion and better access to basic services from line departments. However, the use of the P3DM has become static. Because of a lack of long term perspective land use plan employing the P3DM, its use has become sporadic and on a pragmatic basis. Participatory monitoring and evaluation using the P3DM is absent in both villages.

The P3DM is strongly owned by the villagers and it can guide them in strategic land use. Unless the project takes a longer perspective on the use of P3DM in land use management and to continually equip the project staff and communities with the required technical capability to handle P3DM, the existing and additional construction of P3DM shall not be fully optimized. The challenge for the Project is to take P3DM as a dynamic approach in land use management that can be used by the communities even after the Project life.

9. ANNEXES

Annex 1: P3DM Matrix of Tools and Strategies for Data Gathering

Experience/ Achievement	Area to be Covered	Indicators	Data to be Gathered	Tools	Sources
103 covered by the UDCRMS					
Villages covered by the Project 1. Ngainga- 2004 2. H. Godah- 2005 3. Soraphung- 2005 4. Shirui Kashong Range- 2005 5. Talui- 2006	***How has P3DM helped improve land use management in terms of planning, implementation and monitoring & evaluation.***	Community Resource Management plan and budget	Process of structuring of P3DM.	Story telling	From NaRM-G, SHG & Village council members.
			Level of community participation in planning & implementation of CRM	Review of secondary data	From NaRM-G records (Attendance and labor record), Project monitoring/ audit reports
		Community Resource Management projects implemented and sustained	Number of Community Resource Management projects implemented & sustained	Focus group discussion	From NaRM-G, SHG & Village council members.
			Factors that sustained	Focus group discussion	From NaRM-G, SHG & Village council members.
			Problems faced and how they overcame them	Focus group discussion	From NaRM-G, SHG & Village council members.
			Level of satisfaction of the community of their Community Resource	Story telling	Key informants

			Management plan and projects implemented		
	What changes came about due to P3DM on: 1. Jhum modifications	Reduction in jhum practices	• Number of jhum areas reduced • Number of new terraces developed • Number of households practicing jhum	Key informant interview Focus group discussion Transect walk/ site verification	From NaRM-G, SHG & Village council members.
	2. Forest conservation (Catchment reserve water shed management, conservation of water source,)	Area reserved for forest, water source, bamboo forests Policies at the village level	• Number of hectors conserved towards forest conservation. • Types/ number of policies enforced, mechanism to enforce policies at village level and cluster level	Focus group discussion Review of secondary data records	Information from village/NaRM-G /cluster records. Types / number of
	3. Settlement area.	Households resettled (Including area for kitchen garden)	• Number of households resettled. • Agreed area for resettlement • Problems encountered resettlement and how they overcame them	• Review of secondary data records • Focus group discussions • Site verification	

	How has P3DM bring about community cohesion/ consensus building	• Agreements on road construction, laying of water pipe lines. • Sharing of resources for community use	• Number and types of agreements on resource sharing & infrastructure construction • Problems encountered in resource sharing • Over come problems	• Review of secondary data records • Focus group discussions • Story telling	Village records From NaRM-G, SHG & Village council members. Form key informants
	How do the villages use the P3DM after post construction?	Post construction activities	• Number and type of activities conducted through P3DM • Villagers involved and type of involvement	• Focus group discussions	From NaRM-G, SHG & Village council members.

Annex 2: FGD Guide

Village _____ Date Conducted _____

Questions	Data to be Gathered	Before Project Intervention	After Project Intervention	Remarks
1. Can you briefly describe to us your village?				
- Total households	# of households			
- Households covered by the Project	# of households benefiting the Project			
2. When did you start and complete the P3DM?	Year			
3. Who were involved in the process of making P3DM? What was their involvement?	Type of people involved, and their involvement			
4. What was the situation of the following:				
- jhum area	# of hectares			
- terraces	# of terraces			
- forest reserve	# of hectares			
- watershed reserve	# of hectares			
- watersource conservation	Community efforts towards watersource conservation			

- bamboo reserve	# of hectares			
- household settlement	# of HHs resettled			
- kitchen garden	# of HHs having kitchen garden			
- policies	# /type of policies developed: village, cluster			
	# /type of policies enforced: village, cluster			
	mechanism for enforcement: village, cluster			
5. Was there land use planning?	Affirmation			
6. How has P3DM improved your land use planning?	Examples			
7. As a result of P3DM, what activities did you	Examples			

undertake or you are now undertaking?				
8. Are these activities sustained? If yes, why? If no, why not?	Factors that sustained or not			
9. What problems did you encounter in implementing these activities?	Examples			
10. How did you overcome these	Examples			

problems?				
11. What have you benefited from the P3DM?	On community cohesion, Other benefits			
12. Are you still using your 3D Model? If yes, in what way? If not, why? Can it still be used? For what?	Present usage/ Reasons for not using' Future use			

Observations:

Annex 3: Key Informant Interview Guide

Village _____ Date Conducted _____

Guide Question	Response
1. Can you describe to us the overall natural resource management in your village before and after the introduction of P3DM/Project? in terms: - jhum modification - forest reserve - watershed reserve - water source conservation - bamboo reserve - resettlement - kitchen garden - wildlife/fish sanctuaries	
2. Can you describe to us how P3DM helped build community cohesion? Community agreements on natural resource management?	
3. Can you tell us benefits of the P3DM? How can you continue using P3DM?	

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