

Ministry of Forestry
Forest Department
Tanintharyi Nature Reserve Project



Consultancy Report on Community Forestry

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Acknowledgement

This consultancy report is neither a research nor an academic paper and a mere compilation of the efforts, findings, conclusion and recommendations of the author who is just a self-titled practitioner, with a relative dedication to Community Forestry, and fortunately has an opportunity to extend and exercise what he has learned throughout his career in a four-month consultancy at a new territorial area as another playground for him.

Hence, thanks were due, firstly, to U Soe Win Hlaing, Director General of the Forest Department, who made me inclined to Community Forestry by giving some opportunities to accrue more knowledge and insights on the subject in the country and abroad as well. The author also had a great debt to U Thiri Tin (Project Director, TNRP), U Sein Htun (Director, Planning and Statistics Division) and U Tin Htun (Director, Wildlife and Nature Conservation Division) of the Forest Department for their consensus in consideration of nominating me as an eligible candidate for this consultancy.

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This report also devoted to my family who endured all the hardships encountered in the time of my absence at home.

**Consultancy report on community forestry
for Taninthayi Nature Reserve Project**

Introduction

Taninthayi Nature Reserve (TNR) has been notified as a managed nature reserve to conserve tropical rain forests and their constituent biodiversity in the Taninthayi region of southern Myanmar. In order to implement a cooperative project for the establishment and operation of TNR, the Government of Myanmar represented by Forest Department (FD) has an agreement with Mottama Gas Transportation Company (MGTC) Limited and Taninthayi Pipeline Company (TPC) Limited for planning, establishing and managing the reserve with recognized international best practices, appropriately adapted to the Myanmar situations.

As per aforementioned agreement and international best practices, the TNR will be categorized into different zones with different management options without losing the objectives of the project. At least 75% of the area will be classified as core zone with all ecological processes functioning and unaltered and with no loss of habitat or biodiversity. The remainder of the area will be designated as buffer zone and managed for the protection of core zones, for rehabilitation of degraded areas and for provision of material, cultural and/or spiritual benefits to local residents.

To this end, the Project is committed to ensure the active participation and development of the local population within and adjacent to the TNR, permitting sustainable development in designated use zones in accordance with agreed management principles. As per CLAUSE 5.2 of the Management principles agreed by all parties for the management of TNR, the management goals and principles of the Project shall be to involve local people in management of the TNR, respect and protect traditional, cultural, ecologically sustainable lifestyles, consistent with the overall management objectives for the TNR. Communication with local people in the vicinity of the Project is to be an integral part of the Project.

In 1995, in view of supporting economic development of the country, regaining environmental stability and addressing basic needs of local communities, FD issued Community Forestry Instructions (CFI) in which local communities are guaranteed to have the management responsibilities as well as the right to use resources in sustainable manner with an initial period of 30 years.

Community Forestry (CF) is, thus, seemed to be one of the possible solutions to address the threats to sustainable management of the Reserve and sustainable livelihood of local communities losing their traditional access to natural resources in the protected area, since CFI clearly states that active participation of the local people is the single mean to establish CF in degraded area.

Secondary data reviewed

- 1) Volume I of the Working Plan for the Heinze-Kaleinaung Reserve, South Tenasserim Forest Division for the period of 1926-27 to 1935-36
- 2) Forest Management Plan for Dawei district for the period of 1996-97 to 2005-2006
- 3) Project document, survey reports and other consultancy reports of TNRP
- 4) Data collected from Kaleinaung Sub-township Peace and Development Council, Myanmar Agricultural Service, Settlement and Land Record Department and Immigration and Manpower Department
- 5) Documents related to Integrated Agroforestry farm sponsored by Socio-eco program of Total E&P Myanmar
- 6) Field inspection report 2008 of the Yebyu FD on status of the land allocated for rubber plantation submitted to Kaleinaung Sub-township Peace and Development Council
- 7) Community Forestry Instructions 1995, Forest Department
- 8) Standing orders and instructions for community forestry (Unpublished compilation of ministerial and departmental instructions by COMFORT project, technical cooperation project jointly implemented by JICA and FD)
- 9) Rules for the protection of wildlife and protected areas 2002, Ministry of Forestry
- 10) Integrated plan for eradication of shifting cultivation 2003, Forest Department
- 11) Standing orders and instructions for the management of culturable land, fallow land and waste land 2003, Survey and Land Record Department, Ministry of Agriculture and Irrigation
- 12) Mangrove rehabilitation manual for the forest department frontline staff of the Ayeyarwady Delta 2005, Nippon Koei Co., Ltd. (Outcomes of the grant aid project sponsored by JICA and FD, MoF)

Background

Dating back to British invasion, most of the Reserve area and its provisional mechanical 10 kilometer buffer zone was covered with some tropical forests namely Giant evergreen, Sub-evergreen, Riverine, Hill evergreen, Moist deciduous and Dry deciduous. Giant evergreen occupied all ground between elevation of 500 feet and 3000 feet and beyond the upper limit lay Hill evergreen. Both were inaccessible. Sub-evergreen and Moist deciduous forest covered almost all ground below an elevation of 500 feet. They are all accessible but practically all *ponso*. Prior to the reservation of Kaleinaung reserve taungya cultivation has practiced on all suitable ground along the banks of Dawei river and its tributaries and considerable amount of timber extraction took place from all the more accessible areas. In Kayin taungya area, villagers were granted some rights such as to practise taungya cultivation with proviso that none of the reserved trees be cut, mutilated or destroyed, to graze cattle, to collect forest produce for home consumption and to cut bamboos, timber of unreserved trees of less than three feet in girth and firewood for use *en route* within 100 feet on each side of the roads, to maintain already existed garden land and the right of way along the path since the time of reservation of former reserves, Kaleinaung and Heinze .

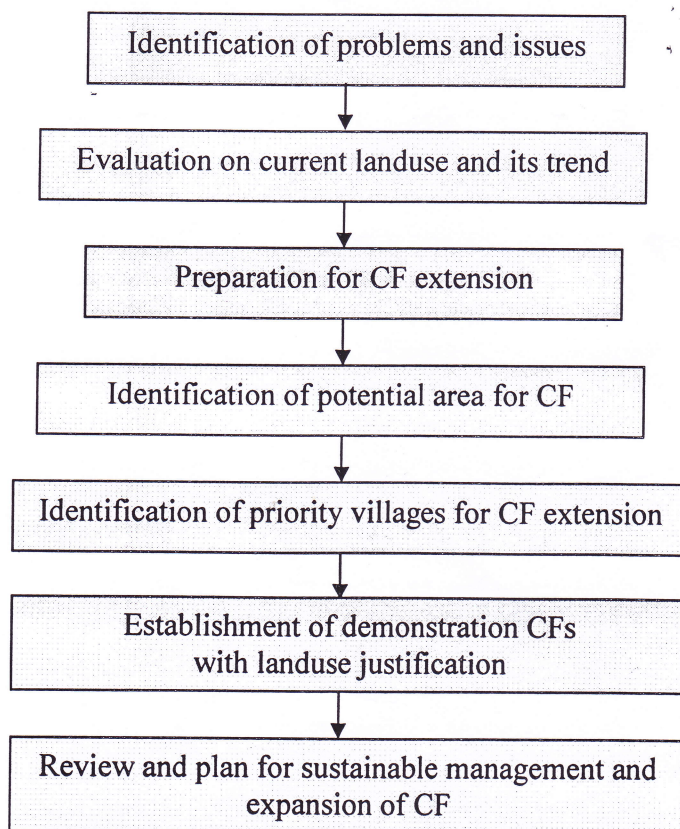
Objectives

- to find out potential area for CF with a purpose to avoid landuse conflicts among the all stakeholders
- to identify village use zone
- to find out priority villages for CF extension
- to ensure active participation of the local communities in the process of establishing CF and its management
- to find ways and means to link CF activities with other community development schemes
- to design an appropriate landuse for target CF area in particular and for designated village use zone in general

Methodology

- 1) Open discussions
- 2) Consultation with authorities concerned as well as other national consultants
- 3) Cooperation with other community developers
- 4) Capacity building for staff of both FD and the Project to expand the CF extension
- 5) Participatory landuse planning in coupled with available information and data

Conceptual Framework



Important Criteria in consideration of CF

Demography

Demographically, the project area could be divided into three zones namely northern Mon area, central Kayin area and southern Dawei area based on their major ethnic residents although there were some intrusions of different ethnic group from these three in each area. Lawthaing and Yaphu (new) were villages of Kayin ethnic in northern Mon area while in central area, Kaleinaung was a town of Dawei ethnic surrounded by originally Kayin villages, Michaunglaung and Zinba, the latter eventually became heterogeneous in ethnicity, and Yebon was a village of both Kayin and Dawei among the Dawei villages in southern part where Mon ethnic were found to be rare.

Some Mon villages along the Ye-Dawei motor road; Kyaukkadin, Kywetalin and Aleisakhan were gazetted, however, newly formed Thayamon and Mile Chauksei were not. Since all these villages were not shown in the map of one inch to one mile scale, printed in 1940s, Mon people were believed to be migrated from the Mon State just in a couple of decade. It was also learnt from the local Immigration and Man Power Department that eight more villages of Mon ceasefire group were there but their exact location was unknown since they were located in the eastern side of Dawei river, where outsiders' visit was strictly restricted by Mon ceasefire group.

Kayin villages: Lawthaing, Yaphu and Michaunglaung were already there at the time of the reservation and some land area around these villages were granted as taungya area or Kayin area where Kayin people from those villages had the right to practice shifting cultivation and use small forest products. Those areas were stated in both the aforementioned maps and the working plan for the Heinze-Kaleinaung reserve. At the moment, all Kayin villages except Michaunglaung were not at the original sites and had to moved to along the Ye-Dawei motor road for security reason despite their orchards were left there unattended.

In southern part where mostly Dawei people resided, all settlements and their environs were excluded from reservation for the purpose of their livelihood, although these area were still cover with secondary forests. Southernmost part of the TNR was Luwaing Reserve and fall in Dawei township and since this part was not considered to intervene in the first phase of the project, no information has collected yet.

Although orchards and homestead gardens were quite common in all three parts, the general approaches to livelihood of each ethnic group were slightly different. Mon people preferred to establish orchards of single cash crop like cashewnut and rubber and settled around their farms while Kayin community lived on shifting cultivation for their staple food and formed homestead gardens of various cash crops and Dawei people earned their living by shifting cultivation and cutting of wood and bamboo in remote upstream area and after the rice harvest they went back to their downstream dwelling sites.

Population data of project area (upper)

No.	Village tract	Village	No. of household	No. of population	Remarks
1	Kaleinaung	Block 1		75	
2		Block 2		121	
3		Block 3		4569	
4		Block 4		10050	
5	Hnankye	Hnankye	134	659	
6		Bamar Shintabi	38	202	
7	Kayin Shintabi	Kayin Shintabi	79	399	
8	Kyaukshut	Kyaukshut	256	1390	
9		Kyaukshutwa	0	0	Gazetted/ deserted
10		Nwelein	0	0	Gazetted/ deserted
11		Yebone	115	656	
12		Heinze	38	178	
13	Zinba	Zinba	216	1179	
14	Yaphu	Yaphu (old)	198	1069	
15		Yaphu (new)	67	391	Not gazetted
16		Mayanchaung	106	496	
17		Kawhlaing	132	657	Not gazetted
18		Mile Chaukse	28	117	Not gazetted
19		Thayamon	113	483	Not gazetted
20		Mon Thonegwa	13	75	Mon ceasefire group
21		Kunkyartein	29	158	
22		Dawei Khayaing	80	423	
23		Myaukchaw	83	471	
24		Naga-aing	39	190	
25	Michaunglaung	Michaunglaung (new)	109	1038	Not gazetted
26		Michaunglaung (old)	77	470	
27	Lawthaing	Lawthaing	113	580	
28		Kyaukkadin	95	454	
29		Kywetalin	100	572	
30		Aleisakhan	244	2122	
31		Ywathit	59	292	Mon ceasefire group
32		Hlegate	24	141	
33		Pa-nan-pon	30	154	

Table 1. Population data of the Kaleinaung Subtownship as of May, 2008

Source: Immigration & manpower department, Kaleinaung subtownship
Impact of the project

Consultancy report on Community Forestry, TNRP

Although shifting cultivation, homestead gardens and the exploitation of bamboo and timber for both domestic use and trade purpose were the general livelihoods of the local people in and around the TNR prior to its formation, those prevailing rights were seemed not thoroughly examined by the forest settlement party due to various unknown reasons. Almost all people randomly selected for questionnaire survey stated they became aware of the existence of the TNR only at the time of awareness talks by project team in their villages, although notification was issued prior to the project; and felt frustrated for their loss of previous access to natural resources due to the restrictions imposed and followed up law enforcement activities of the project.

Such an impact was so evident in central area when security condition and where transportation was favourable for law enforcement intervention, however, very little in northern and southern parts for the security and transportation constraints therein. But when reviewing the landuse and landcover map of TNR, much of the area of those parts even in the TNR were severely affected by loss of vegetative cover.

CF attempts prior to the project

Fortunately, one CF has been certified and established in the area since 2003, prior to the reservation of the TNR; and in order to promote the CF in the area it is better to study the progress of that CF and its impact to the socio-economic conditions of the local people and the environment as well.

However, it is very difficult to acquire the documents related at the township forest office and existing local FD staff has very little knowledge on it. Although the users' group of forty members, with the help of Total E&P Myanmar, applied for 250 acres of forest land to establish CF near the Michaunglaung (old) village along the Ye-Dawei road, Divisional Forest Officer handed over to such users' group a certificate for forty acres only in March 2003.

Members of the users' group, actually they were not aware of their status as members since their farm become privately owned ones, committed that an area of almost 210 acres at the back of initial forty acres of the CF was converted to rubber plantations since many of the members of users' group could not afford to run their land after the wildfire consumed all planted cash crop and forest trees in 2005 and sold their land to new comers.

Users' group was made up of people from five different villages namely Michaunglaung (old), Michaunglaung (new), Kaleinaung, Innbya and Kawlaing; all of them were in the vicinity of the target site. But current members had no idea on the formation of CF users' group.

None of the stakeholders i.e. users' group, FD and Socio-eco program of Total E&P Myanmar, of that CF was no longer interested to make it be in line with CFI and as a result, the whole area have turned into private farm. This was not a showcase for CF promotion in TNRP area.

Consultancy report on Community Forestry, TNRP

This led to coordination with the agriculture branch of Socio-eco program of Total E&P Myanmar. Mr. Adrien PEYRE Adou, the agro/vet supervisor for Socio-eco program and U Yan Lin, an agricultural supervisor, were met on the first day of the visit to the office of Socio-eco program and both of them showed their keen interest in this case. After the very brief discussion, both parties agreed to meet again for further cooperation and more discussions on it.

A visit to District Forest Department at Dawei on 12th October 2008, made clearer view on this CF since very useful and informative documents were found there.

In conclusion, lessons learned from that CF were as followed:

- CF
- 1) it was initially started as fruit trees farm sponsored by Socio-eco program of Total E&P Myanmar (instead of community forestry initiated by collective effort of local community)
 - 2) users' group was formed by those from nearby villages whom were chosen by lots although many more people were interested in (lucky ones might be likely to consider it their asset and not as a common property)
 - 3) farm committee was headed by a patron of Yangon-based section head of TEPM and co-chaired by district forest officer and two supervisors from TEPM with three members- TFO and RO from township FD and township officer from Land Record Department- and two secretaries, both of them were agriculturists from TEPM although 38 farmers included with no clear role (formation of such wide-arrayed committee looks too good to be true because they hardly got together)
 - 4) management committee was formed again with the same members of the said farm committee although the idea was changed to establish CF (as per CFI, it should be done with a consensus of members of the users' group)
 - 5) one more chairman of MC from the members of the users' group signed the application form (but no secretary and members and no clear leadership role)
 - 6) although management plan was signed by chairman of MC, it was not seemingly being formulated by the users' group and did not match the prescribed format mentioned in CFI (nobody knew what must be done and when)
 - 7) local FD had neither proper training nor experience in CF (the latter was proved by the letter from the FD Headquarter to the divisional FD mentioned that certification was just for the users' group and not for the every members of it since divisional FD demanded forty certificates for that group).
 - 8) monitoring was done only once after the head office summoned its progressive report. (no more support from FD due to lack of cooperation)

Other prior attempts for CF in the project area

According to the Dawei District Forest Management Plan for the period of 1996-97 to 2005-2006, no reserve forest were planned for CF and CF was planned only in the once called unclassified forest, actually which was not under the jurisdiction of FD. However, many applications for CF in the reserve forest were found recommended by township FD. Following the CF sponsored by Socio-eco program of Total E&P Myanmar, a couple of attempts for CF were made in the project area. But all were seen pended in the district FD

at the time of consultant's visit to the office; however the reason for so doing was unclear. Table 2 shows some salient information about the previous CF attempts.

No.	Users' group	Area (acre)	Location	Date of application	Status
1	U Soe Win and 4	100	Heinze-Kaleinaung R.F Compt. 14 & 17	25-9-2004	Pending
2	U Aung Zeyar Lin and 4	200	Heinze-Kaleinaung R.F Compt. 14 & 17	10-10-2004	Pending
3	U Hone Ngaine and 4	50	Heinze-Kaleinaung R.F Compt. 14	8-10-2004	Pending
4	U Than Kywe and 4	30	Heinze-Kaleinaung R.F Compt. 15	10-10-2004	Pending
5	U Ne Linn and 4	50	Heinze-Kaleinaung R.F Compt. 81	10-10-2004	Pending
6	U Myint San and 4	30	Heinze-Kaleinaung R.F Compt. 19	8-11-2004	Pending
7	U Tun Lwin and 4	70	Heinze-Kaleinaung R.F Compt. 19	22-10-2004	Pending
8	U Tin Maung Oo and 6	80	Heinze-Kaleinaung R.F Compt. 5	18-4-2006	Pending

Table 2. Prior CF attempts in the project area

All of the users' groups were formed with only five members except the last group which was formed by TNRP. Minimum number of the members to form a users' group was not explicitly stated in CFI, but the number of the members of the Management Committee of a users' group must be exactly five. This made many foresters complicated and misunderstood. Actually it is not necessary to determine the number of the members for a particular users' group since the objectives of a particular CF would best determine it. But these objectives should not be against the three-tiered objective of CFI: i) to support the economic development of the country, ii) to regain the environmental stability and iii) to address the basic needs of local communities. If only five people from the local community were eligible for the right to manage and use the particular land and the resources bounded to it, where the rest of the community could enjoy such right was in question. Would the rest go to state forest illegally and would it be worthwhile to happen? Hence proper enquiry is necessary for justification of any application. In terms of appropriate number of users' group, all the abovementioned applications for CF were not likely to fulfill the essence of the CF. It can be concluded that their true objective must be to secure land tenure in the forest land like fruit tree orchard of the Socio-eco program. This conclusion was supported by the finding of same persons applied the surrounding sites again for rubber plantation last year and nothing was done at the time of recent field check by TFO.

Prevailing Landuse

With an aim to evaluate whether community forestry (CF) can be practiced in the project area, it was necessary to review some secondary data, related to project, prior to field visit. Emphasis was put on landuse activity permitted and/or zoning, however, consultancy report on zoning i-e Buffer Zone Management has not yet completed although it was supposed to be completed in the first year of the project according to the project document.

Learning from secondary data

CF can be exercised probably in External Buffer Zone (EB), Integrated Buffer Zone (IB), Village Use Zone (VU) and Sustainable Use Zone (SU) while reviewing landuse activity/zoning matrix of the project document. Landuse activities permitted in those zones are more flexible than that of CFI, for example, any form of mining is not permitted in CFI but open pit/surface mine in EB and underground mine in EB, IB and SU. Dwelling is also permitted in those zones whereas any building, apart from the one for the purpose of protecting CF, is not permitted in CFI.

Landcover is also one of the important criteria to determine the potential area for CF and landcover map has already work out by RS & GIS section of FD, however, classification done is just for general purpose and, more importantly, it is committed that accuracy of its classification in some landcover categories namely horticulture -where the livelihood of local people heavily relied on - and forest plantation is very low. Hence, potential area for CF cannot be detected from such map. Although the data and software, prerequisites for the particular analysis, were available at the field office of the project at Gantgawtaung, Kanbauk, there is no skillful person to work with the software available and consultancy period is too short to work out for the analysis at RS & GIS section of FD.

The written statement of boundary of the TNR was not well defined in the area where two villages located quite close to it and the map attached to the notification did not exactly follow the statement. Moreover, the boundary depicted in the skeleton map developed by RS & GIS section of FD again did not follow the former. The latter seemingly tried to fulfill both the said statement and one of the clauses so stated in the project document that the proposed nature reserve shall be include the pipelines from the Dawei river to the Myanmar-Thai border.

Consultation with local authority and government agencies

Consultancy report on Community Forestry, TNRP

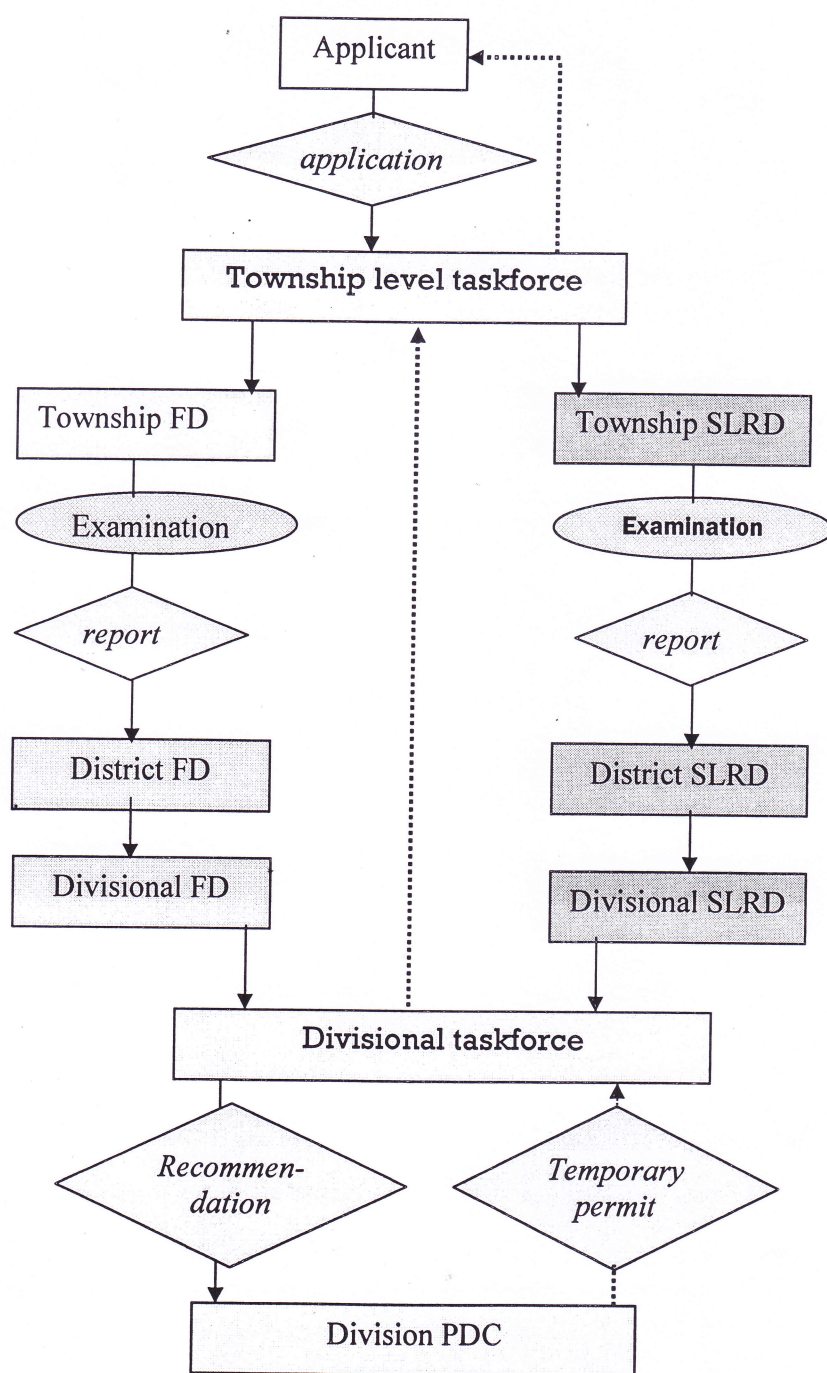
In order to examine the landuse policy of the area and to avoid the possible landuse conflict, consultant tries to discuss with persons in-charge of local government agencies and administrative authority either individually or in group.

In reserved forest (RF), FD has the management control but in case of landuse other than forestry, for example, perennial crop plantation in the RF, application attached with a plan of operation for three years has to be firstly examined by township level taskforce chaired by chairman of TPDC and comprised of representatives from township level FD and Settlement and Land Record Department (SLRD). If the target area is free from any private landuse, whatsoever legal or illegal and not covered with forest plantation or closed forest, application has to be proceeded to Director of the divisional FD through district forest officer (DFO) by township forest officer (TFO). With the recommendation of Director of FD, application has to be again proceeded to Divisional PDC through the divisional taskforce. Meanwhile SLRD follow the same procedure up to divisional taskforce through proper channel. If divisional taskforce has no objection, Division PDC issued temporary permit for prior field operations. Applicant is obliged to carry out the field operations as per his plan of operation for three years. After that, application has to be proceeded to FD headquarter by Divisional FD for long-term lease contract for thirty years. Temporary permit, however, shall be abolished, unless applicant can carry out the plan. This is the standard procedure currently practiced in Taninthayi Division.

Prior to this procedure, SLRD surveyed the area of individual orchards established in the reserve, registered them as non-permanent holdings for individuals and collected some revenues from the farmers. In such a way, many farmers believed that their orchards were legalized and land tenure was secured. However, township SLRD officer said that such procedure has stopped since 2000 in accordance with the instruction from SLRD head office.

In case of land at the disposal of the State, application has to be proceeded to Central Committee for Management of Culturable Land, Fallow Land and Waste Land instead to FD headquarter.

In some unusual cases, applications directly proceed to the Division PDC without any acknowledgement of township level taskforce and temporary permit for prior field operation is sent to township level taskforce through divisional task force. It is learnt, what worse is, sometimes when township level taskforce performs field check for temporary permit, the site applicant have already cleared even before the temporary permit is issued is totally different from where he claimed for. In this case, the applicant seemingly can enjoy both sites because another instruction stated that, in consideration of permit for disputed land, priority has to place on the one who starts land reclamation on ground. It is concluded that permit is deemed to be a sort of land tenure on first come, first serve basis and many outsiders deliberately chase for it. Hence, land tenure security become very difficult for the poor and easy for the richer. Figure 1 shows the standard procedure for temporary permit for prior field operations in the Taninthayi Division.



PDC – Peace and Development Council
SLRD – Settlement and Land Record Department

Fig 1. Procedure for perennial crop plantation currently practiced in Tanintharyi Division



Field observations

Although the whole northern part of the project area - from Kaleinaung to the border sharing with Ye township- falls in Heinze-Kaleinaung Reserve, almost all forests along the Ye-Dawei motor road are replaced by many juvenile rubber plantations; except in Yaphu (new) village where some patches of cashew nut plantation have been established well. Taungya cultivation seems sprawling up to the area where slopes are not suitable for it and many orchards also cover almost all over the accessible areas.

It was believed that as soon as law and orders were restored again in the area, the government laid down the development programmes to turn up the decades-long war-torn area into productive and developed one. These included reconstruction of railways, construction of gas pipelines from the seashore to border area, promotion of large scale oil-palm and rubber plantations for economic purpose and massive deployment of security forces and resettlement of armed ethnic cease-fire groups in easily accessible area for security reason. Figure 2 and 3 were the evidences of rubber promotion along the access roads and large scale oil palm plantation which deprived of the traditional homestead gardens of the individual villagers.

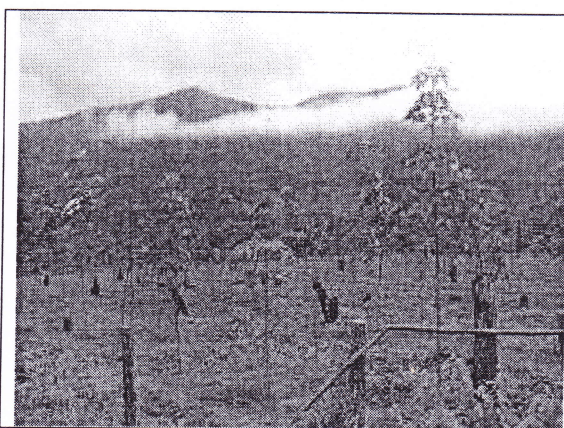


Fig 2. Newly formed rubber plantation along the all access roads



Fig 3. Palm-oil farm of UMEHL expanding toward 10 km buffer zone of TNR

All these changes also almost altered both socioeconomic and biophysical landscape of the area. Small orchard owners along the transportation corridor lost their assets in the name of large scale oil-palm and/or rubber plantations as well as new settlements and turned up into land hungrys while remnants of the secondary forests in the area rapidly disappeared for the said cash crop plantations of both small and large in size. As a consequence of such an agricultural colonization, land hungrys tried to move to area in the vicinity and inside the Reserve - buffer zone- initially for shifting cultivation purpose and occasionally for illegally logging and hunting, although they still like to be owners of the orchards like before. Figure 4 was developed from the discussion with person concerned from Socio-eco program of Total E&P Myanmar depicting the livelihood change and its drivers in the pipeline corridor.

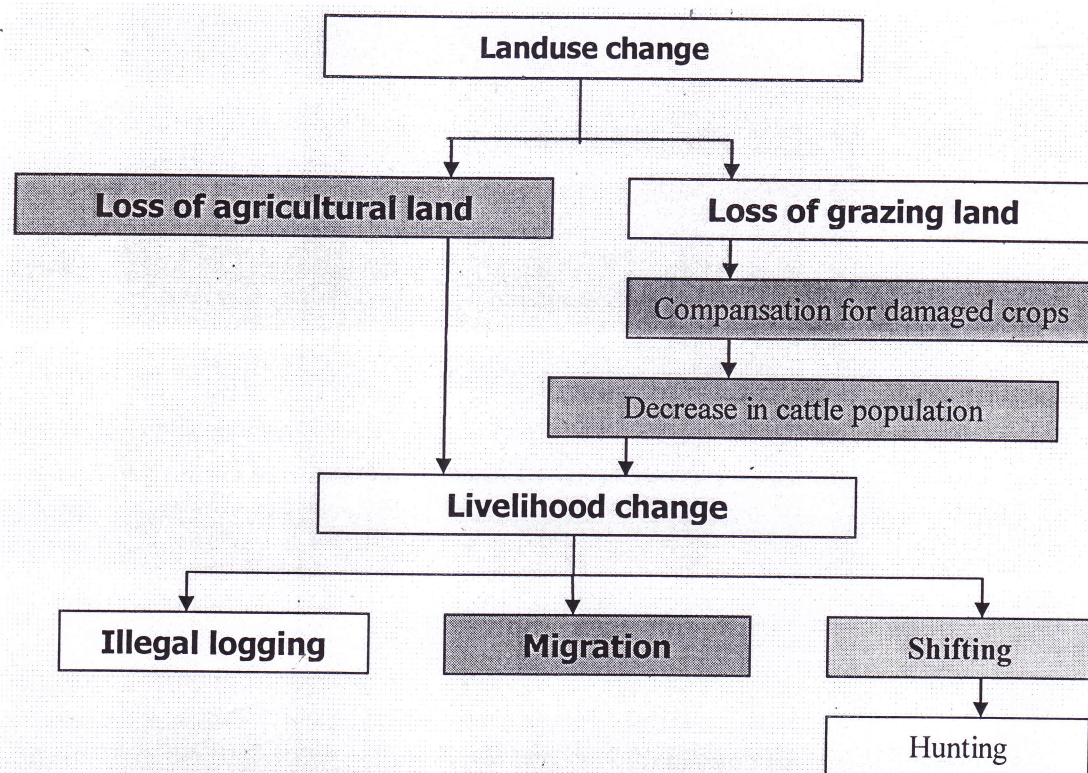


Fig 4. Livelihood change model in Pipeline corridor adapted from Socio-eco program/ Total E&P Myanmar

Homestead gardens/ Orchards

In fact, orchards in this area consisted of multiple cash crops namely betel-nut, cashew nut, *taunghtan*, citrus fruit trees, durian, jackfruit, banana, bamboo, papaya and mango in separated blocks or in horizontal and/or vertical mixture in order to optimize the use of available land of different land suitability for different crop. Generally, the crops do not seem to be grown according to any specific pattern or planting arrangement, but appear to be in a random though intimately mixed pattern (V.J.JACOB and W.S ALLES). But for some cash crop like cashew nut, it required certain extent of space for fruit-bearing branches; many villagers grew them in pure block instead of intercropping with other cash crops. Figure 5 shows the cashew nut plantation in pure block.

The time of harvest for each crop, thus, seemingly covered throughout the year and income was aimed to be distributed in all seasons round the year, provided the weather was normal. To sum up, the economic life of the orchard owner was far better and more stable than that of the taungya cutter who was likely to enjoy his efforts only at the harvest time of the mostly single crop or, in some cases, double crops.

At this moment, domestic use of small forest produce such as firewood, *taunghtan* (roofing material) and trees of pole-size in the area seems not so problematic since population density is relatively low in the area where some of the secondary forests were still abundant while the demand for timber from the nearby developed area (mainly for construction) was so high that it will be a great pressure for the management of the TNR

only in which trees with the size of producing sawn timber existed. Furthermore, some documents related to the law enforcement activities of the project mentioned that sources of some seized timber were homestead gardens and building materials for personal and community use were still extracted from the homegardens in the area. Much of the landless people survive as casual labourers in orchards and rubber plantations and/or hunters as well as seasonal collectors of NTFPs, and as woodcutters whenever they have an offer from the timber merchants of nearby towns for timber.



Fig 5. Block of cashewnut plantation in orchard near Yaphu (old)



Fig 6. Betnuts planted at the fence of orchard

Shifting Cultivation

Official data collected from Myanmar Agriculture Service of Kaleinaung subtownship indicated that, in the year 2007-2008, within three village tracts (highlighted in the following table) located entirely in the forest reserve, some sixty thousand acres of hill-rice cultivation and some eight thousand acres of rainfed rice cultivation were existed- although their exact locations were unknown- and expected to scale up the area for next fiscal year. Even official data were usually far below the actual ones, total area of such an encroachment in those areas alone was quite threatening to the remaining forests.

Village tract	Area in acre of cultivation in FY 2007-2008		
	Hill-rice	Rainfed-rice	Total
Lawthaing	2309	3295	5604
Yaphu	1994	3067	5061
Michaunglaung	2074	2334	4408
Zinba	404	474	878
Kaleinaung	223	308	531
Kyaukshut	670	849	1519
Kayin Shintabi	472	486	958
Hnankye	612	775	1387

Table 3. Rice cultivation area by village-tract in Kaleinaung subtownship 2007-2008

This type of landuse was practiced by the forest dwelling communities and the poorest of the poor in the communities, since they had no capital other than their own labour. This was the sole mean to secure their food requirements in the area where and for whom there was no place to grow their staple food crop. After the rice harvest they shifted to another place and the process went on. In practice, the extent of the area they used every year was not large since they could not afford to hire outside labourers and their practice was almost subsistence. Even though the size of the land was well proportionate to their food requirement and labour capacity, they became despair in the years of abnormal weather. Since the small-sized farms scattered here and there in all accessible low land, it was difficult to bring them under the control, particularly in such an area where conventional management functions of FD was marginalized by security and accessibility constraints. This custom of shifting cultivation, shall, where feasible and necessary, be prohibited by law, while providing suitable alternative areas for permanent cultivation. Success in this direction largely depends on proper education of the cultivators and gaining their confidence and showing consideration for their needs and wishes (SANDWELL report 1978 on Burma Forestry Feasibility Study).

Normally , in this area, taungya cutters cleared the forested land area for rice cultivation and if the area was not far away from their dwellings and the slope of the area was favourable enough for tree growing, some perennial crops mainly cashewnuts and/or betelnuts were also grown together on the same unit of land. In some orchards, natural stands of valuable tree species were nurtured like previous forest ecosystem. Figure 8 shows more stands of *pyinkado* saplings from coppice in cashsewnut plantation near Zinba village.



Fig 7. Site preparation by shifting cultivator in secondary forest near Zinba village



Fig 8. Coppices of *pyinkado* nurtured in the cashewnut orchard formed after the shifting cultivation.

If with proper management, such landuse practice fulfilled the local needs and sustained the ecosystem. In this area where land resources were still relatively abundant and climatic condition was so favourable for the growth of vegetation, this type of traditional landuse still prevailed for its three pronged advantage: it was ecologically viable since vegetative cover could be appeared again within foreseeable period, economically feasible as it did not require much input and socially acceptable because it has been originated since the time immemorial. The indigenous landuse systems that evolved from

extensive shifting cultivation to forms of sedentary farming, which support a high population density while maintaining soil fertility, are of particular interest for development of ecofarming in the tropics (Berry van Gelder and Phil O'Keefe 1995). Recently, government laid down a policy to eliminate shifting cultivation practices in upland in particular and throughout the country in general since it was view as an age old practice of nomadic people and no longer to be practice any more nowadays and FD developed its own plan to eradicate shifting cultivation with some objectives in which converting such practice into sedentary farming was a priority and CF was one of the countermeasures to be taken . See Box 1.

Box 1. Excerpts from the Integrated plan for eradication of shifting cultivation practice

Objects of the plan

- (a) to convert shifting cultivation areas in highlands into sedentary farms
- (b) to improve current landuse practice with an introduction of modern agricultural techniques so as to promote the income opportunities and mitigate poverty
- (c) to work together with Myanma Agriculture Service in Upland Agriculture Development Plan
- (d) to make, with extension services, local people aware of the negative impacts of the shifting cultivation practice and adopt modern agricultural techniques

Measures to be taken for first phase in the period of 2002-2003 to 2006-2007

- (a) Area inventory on shifting cultivation
- (b) Formation of agroforestry plantations
- (c) Establishment of community forests
- (d) Demonstration for contour-bund construction
- (e) Demonstration for compost making
- (f) Trainings
- (g) Provision of seedlings
- (h) Formation of income generation groups

Source: Planning and Statistic Division, FD

Illegal logging

Illegal logging was wide spread throughout the area for both subsistence use and trade since local FD was inadequately staffed and ill equipped in somewhat insecure area where transportation and communication was below average. Steep slope and distance were no longer be barriers and there was no inaccessible area for loggers in an age of mechanization. The mobile use of chain-saw was extremely much more destructive than conventional sawmill for giant trees of once pristine forests since local operators learnt

how to use it from outsiders who came here in search of Agarwood (*Aquilaria agallocha*) -not only for felling and logging but for sawing. Within some hours, trees of any size turned into sawn timber and sawn timber can be easily transported to the route. Ironically, there was no control measure for the use of chainsaw in forest law, rules and regulations in which many restrictions are imposed on conventional sawmill and sawpit. Hound hell was still at large. Figure 7 and 8 demonstrated both sophisticated and conventional logging practiced in the project area.

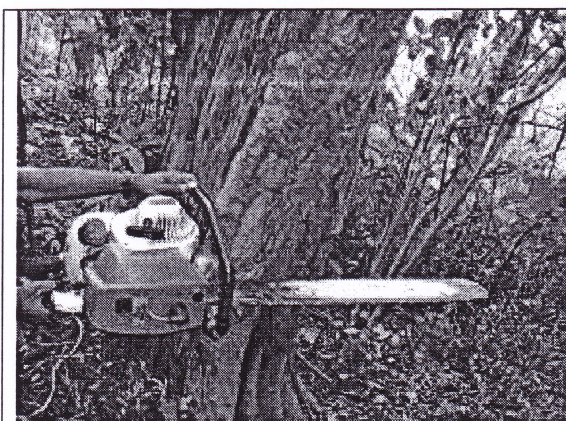


Fig 7. The use of chainsaw is efficient for logging and site clearing but most destructive to conservation and difficult to control for its mobility.

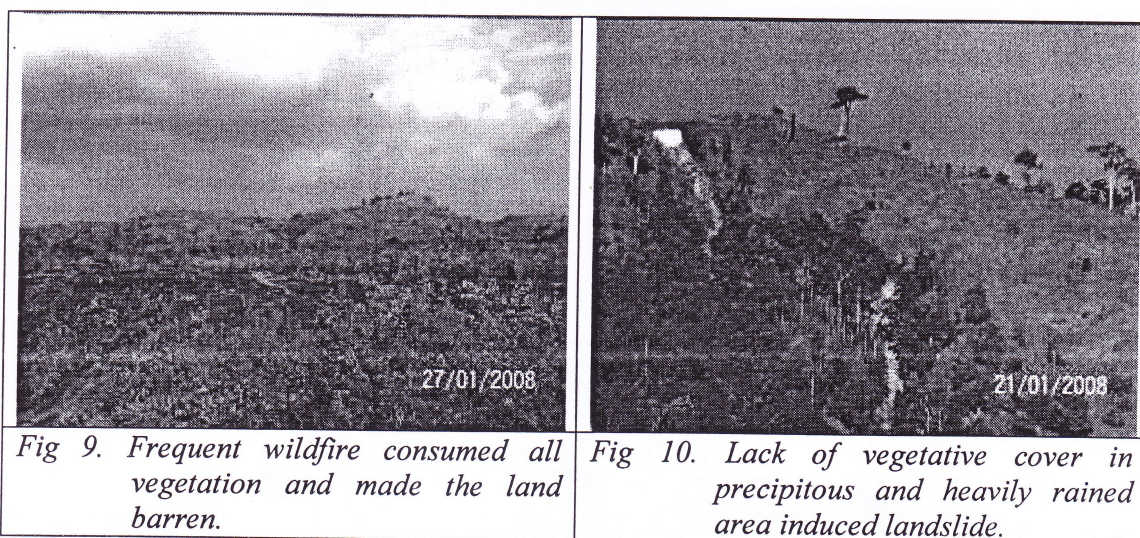


Fig 8. Conventional illegal logging are still common despite law enforcement team was formed by the project.

Although CF might be a possible solution for provision of domestic use of timber and other forest products, it could not compensate the deforestation caused by commercial scale illegal logging.

Fire

Since the livelihood of the local people depended much on homestead gardens or orchards, one of the most threatening factors for their livelihood was so-called wildfire which could severely defect the productivity and/or survival of their orchards in a matter of hours or even minutes. It was so-called wildfire because, quite often, it did not naturally occur but by either indiscriminate uses of fire for site clearing for agricultural purpose by individuals or intentional uses by hunters or both. Once it outbreaks, it was almost impossible to extinguish by individual who has very little capacity, knowledge and no facilities for firefighting. In addition to this, preventive measures usually done for fire were not efficient enough and the need for collective effort was evident although these orchards were privately owned. It was also difficult to impose preventive regulations effectively on the individuals scattered here and there. After repeated burning vegetations were totally wiped out and, precipitous areas in particular, were prone to landslide at the time of heavy rain. Figure 9 and 10 show the recent fire scar and its follow-up impact.



Potential for NTFPs Plantation

As per responsibilities of the consultant stated in the project document, the consultant have to find the way to compensate the loss of access to resources in the core area of the nature reserve in a way to form fuel wood and/or NTFPs plantation wherever possible. In a pool of horticulture farm in and around the villages of the semi-equatorial region, fuel wood supply was not a concern for most of the villagers and it was not worthwhile to form fuelwood plantation in such places where land became scarce item at the moment. More importantly, fuel provision may be only one of many problems rural people face, and is frequently not a priority concern (Berry van Gelder and Phil O'Keefe 1995). On the other hand, NTFPs are alternative source of both food and income for rural people and thus play as integral part of resource use system. However, generally collections of NTFPs are informal and quite often illegal. An important consideration to complement natural stocks is potential for NTFPs production through domestication and intensive cultivation (Min That Zin 2006). In determining the type of NTFPs to be initiated, minimum criteria should be familiarity, ease of management and secure market condition. If it is totally new for the people, considerable amount of efforts and time will be required to become with the new one and if the market for new product is not yet in place all the efforts will be ended fruitless. For instance, Agri-vet section of the Socio-eco program of Total E&P encouraged and assisted villagers to grow cacao (*Theobroma cacao*) plant in their orchard some years ago. At the time of harvest, villagers were frustrated as there was no market for cacao in the area although which had very good world market.

Wa-u (round yam) (*Amorphophallus campanulatus* Blume.) and the cardamom seeds have been collected from the natural forests and market was already in place in the area. But the way they have been produced seemed not in a sustainable manner since different sizes of *wa-u* and unripe cardamom seeds were evident in many observations. It became urgently necessary to study whether they can be grown or not in order to sustain the yield and market. By accident, one processing plant for *wa-u* was found and, from the owner of

such plant, it was learnt that *wa-u* was grown even in the surrounding area as trial but it was noted as successful.

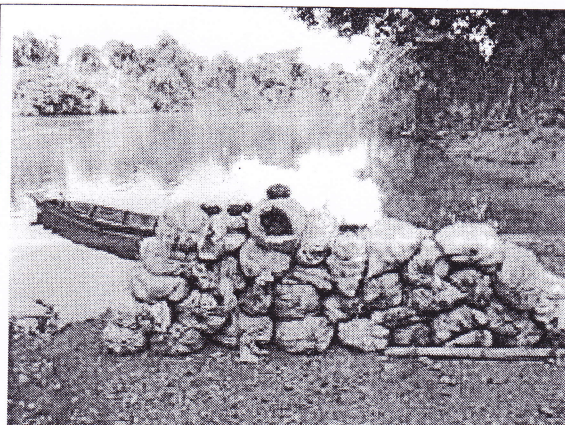


Fig 11. Bags of wa-u collected from the wild were dumped at Michaunglaung village.

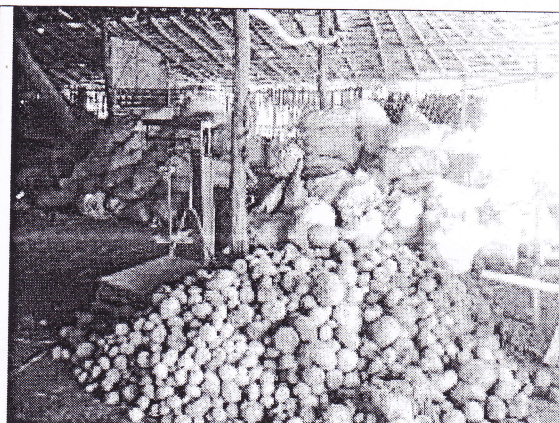


Fig 12. Different size of wa-u at the semi-processing plant

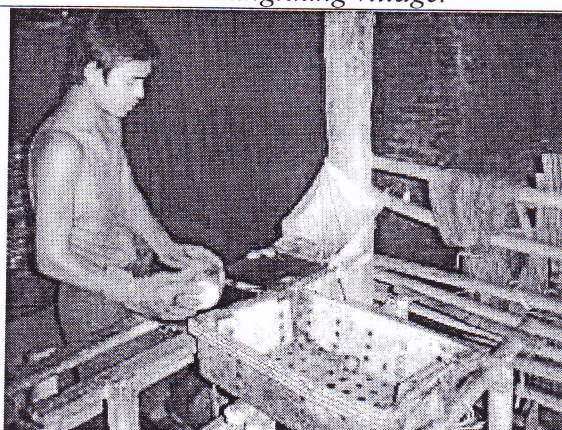


Fig 13. Slicing wa-u after cleaning dirt

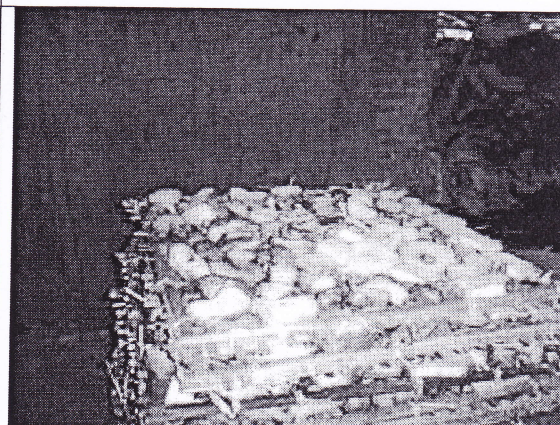


Fig 14. Sliced wa-u were spreaded on the bamboo tray and ready for drying

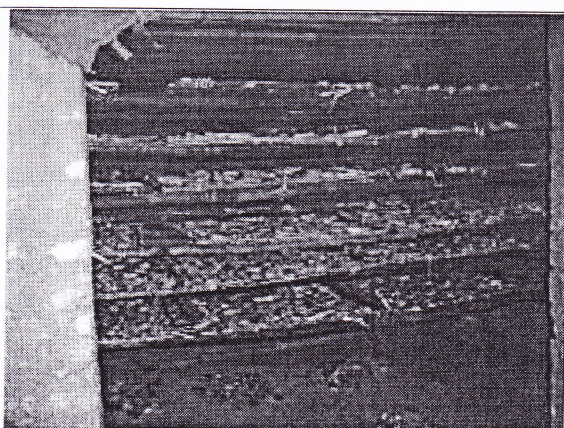


Fig 15. Wa-u dry kiln heated by burning



Fig 16. Successful wa-u plantation under

<i>charcoal</i>	<i>the shade of perennial crop at Zardi</i>
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Trainings

As community forestry was not well understood in the Tanaintharyi division, an introductory course mainly focus on CFI with participatory approach was conducted for project staff with an aim for better understanding of CFI and introducing participatory learning before the onset of field level extension activities. This course was designed for two days and national consultant for Environmental Education (E/E) also contributed a half day lecture in a way to optimize the interest of the participants. Sixteen staff from the project took part in the course.

Another course for project staff was conducted again after the formation of some users' groups as a result of a series of village meetings for CF extension. Although it was aimed for formulation of CF management plan, it was merely a monthly programme of the project and the premature one since there was no CF ready to be exercised with what participants have learnt from that course. This course also included lectures on Soil, Agroforestry and Horticulture, all of which were very closely related to and useful for management plan, contributed by the other two national consultants of E/E, Buffer Zone Management (BZM) and an agriculturist from the Socio-eco program of Total E&P Myanmar respectively. This is the very first time of technical cooperation between the project and its funding agencies, Total E&P Myanmar. Horticulture, in which we could learn how to treat the individual tree in order to maximize the benefits from it, is quite new for all foresters who usually only work for the whole crop rather than single tree.

Training courses for staff of local FD were programmed for Yephu and Dawei township as these two local FD were responsible to initiate and take care of CFs around the TNR, however, due to time constraints only one day training course was conducted at the district forest office in Dawei at the time of consultant's visit to district forest officer for discussion on the application of a users' group and review some documents related to previous forest management in the district. Participants were not only from Dawei township but also from nearby townships namely Yephu, Thayetchaung, Launglone and Pulaw. No other national consultant took part in lecture and the focus was just put on CFI with participatory approach.

No.	Type of course	Focus/ content	Duration	Participant
1	Introductory	CFI Case study Discussion to develop pamphlet Participatory approach	2½ days	16 project staff
2	Advanced	Formulation of CF management plan Soil Agroforestry	2½ days	16 project staff
3	Introductory	CFI Participatory approach	1 day	19 staff from local FD

Table 4. Trainings conducted

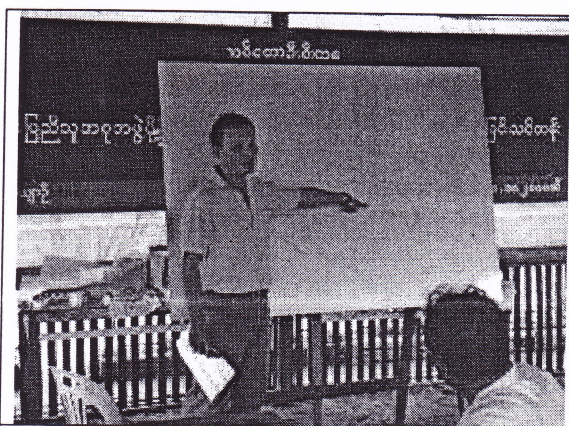


Fig 17. An agriculturist from Socio-eco program voluntarily conducted lecture on horticulture for project staff



Fig 18. Local FD staff in brainstorming session of CF training course at Dawei district FD.

Extensions

Dissemination of information regarding to CF was initially done at the time of first visit to the village-heads or the contact persons before the onset of extension. However, only five villages were visited during the first month of the consultancy period due to security reason and transportation constraints. Almost all villages except in northernmost villages were better aware of the CF through the village meetings organized by village heads within first two months of the consultancy. It was impossible to conduct such meetings in the northernmost area during the entire period of consultancy due to security concerns although same treatment were intended for all communities around the TNR.

Village	Date of first visit	Date of village meeting(s)	Date of formation of Users' group	Date of application for CF
Yaphu old	27 Aug			
Yaphu new		5 Sep		
Tharyarmon		5 Sep		
Mile Chaukse		22 Sep		
Mayanchaung		22 Sep		
Kawhlaing	21 Aug			
Migyaunglaung old	19 Aug	8 Sep	15 Sep	30 Sep
Migyaunglaung new	20 Aug			
Kaleinaung	21 Aug			
Zinba		4 Sep		
Kyaukshat		10 Sep		
Yebone		14 Sep		

Hnankye		20 Sep		
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Table 5. CF extension activities conducted in the project area

Village meetings for CF extension were carried out by the extension team formed after the introductory training course for project staff. Usually extension was carried out by four members of the team in a way the leader of the law enforcement team, firstly introduced himself and his duties, mentioned the prohibitions and liable penalties concerned and unveiled the alternative way to obtain forest products for building materials legally i.e CF. Secondly, in-charge of the concerned Local Operating Unit (LOU) briefed about the definition and the merits of CF and provision of supports for it by FD. Thirdly, other project staff further explained dos and don'ts in CF. Finally, consultant facilitated step by step procedure for the establishment of CF followed by open discussion.

A copy of CFI and a copy of CF Guidelines for villagers were handed over to the village head for further discussion among the villagers. In order to motivate the initiatives of the project staff of each and every LOU, who hardly had an opportunity to use computer in the rural area, hand-drawn prefabricated flipcharts rather than power point presentation were used as visual aids for better understanding. Fig 19 and 20 show how village meeting for CF promotion was conducted.

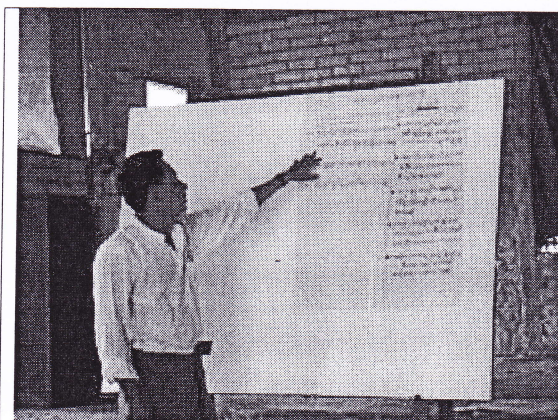


Fig 19. An in-charge of LOU (Yaphu) explained where CF can be established with an aid of flipcharts

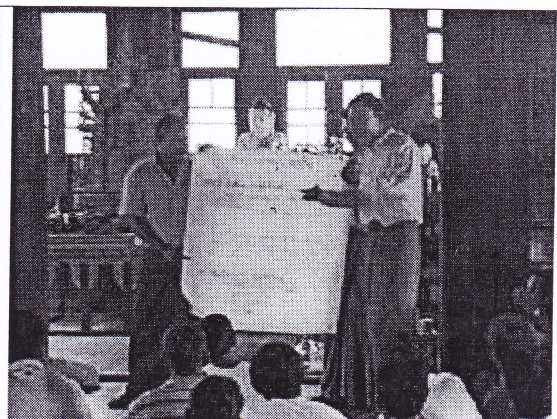


Fig 20. In-charge of LOU (Heinze) assisted his colleague of LOU (Yebon) in elaborating the FD's supports to CF

Prior to all village meetings, each member of the extension team practised in front of the other three and he had to improve his role based on the feedback of the other. Moreover, some salient information regarding to concerned village was shared by the concerned LOU staff and those information were put into consideration for change or modification of the set extension programs with an aim to suit the local reality best. Also present on the village meeting was the in-charge of the other LOU who had to witness the entire process and learn how he would have to do so in his concerned village. And just after the village meeting, all members of the team sat together for evaluation of their performance in their own roles as well as attempts to link with other member and how well the process went on and to find out weak points and means to overcome them for the betterment of next events. Everyone learned from each other and worked together in a

way to compliment each other for a common goal. Participatory approach was so maximized even in the project staff while efficiency of the team and its individual members became improved.

This was the very beginning of the CF extension and once the villagers were hooked, extension team revisit the village and facilitated in the formation of users' group who share the common interest and the selection of members for management committee who supposed to be eligible to serve the responsibilities mentioned in CFI. All the decisions were made by members of the users' group. Next step was defining the target area and its boundary together with villagers for further exploration to obtain the information necessary for application for CF establishment. During the exploration of the target area, information related to the target site was collect while underlying objectives of villagers were verified through the building of confidence between villagers and exploration party of staff from the project as well as local FD.

CF activities of selected villages

Migyaunglaung (old)

Among the villages, Migyaunglaung (old) is the very first one for the national consultant to meet the village-head for CF promotion. Two weeks later, a group of villagers headed by village-head came and contact project nursery to show their interest in CF. One week after that, they met with consultant and openly discuss about their purpose to form village woodlot of approximately 3000 acres for the whole village with an aim to prevent it from outsiders' disturbances on once a part of their ancestral land of some ten thousand acre which gradually shrank due to outsiders' encroachment, resettlement and emergence of cantonment. See box 1. and figure 21 for Karen Taungya Areas granted at the time of reservation of Heinze and Kaleinaung Reserves..

Box 2. Karen Areas in Kaleinaung and Heinze Reserves

24. There are three Karen areas in the Kaleinaung reserve and one in the Heinze reserve.

Reserve	Name	Karen area	
		Acres	Sq-miles
(1)	(2)	(3)	(4)
Kaleinaung	Lawthaing	5587	8.73
	Yabu	7306	11.83
	Migyaunglaung	10570	16.52
Heinze	Eindayaza	12312	19.24

Source: Volume I, Working Plan for the Kaleinaung and Heinze Reserves, South Tenasserim Forest Division for the period of 1926-27 to 1935-36

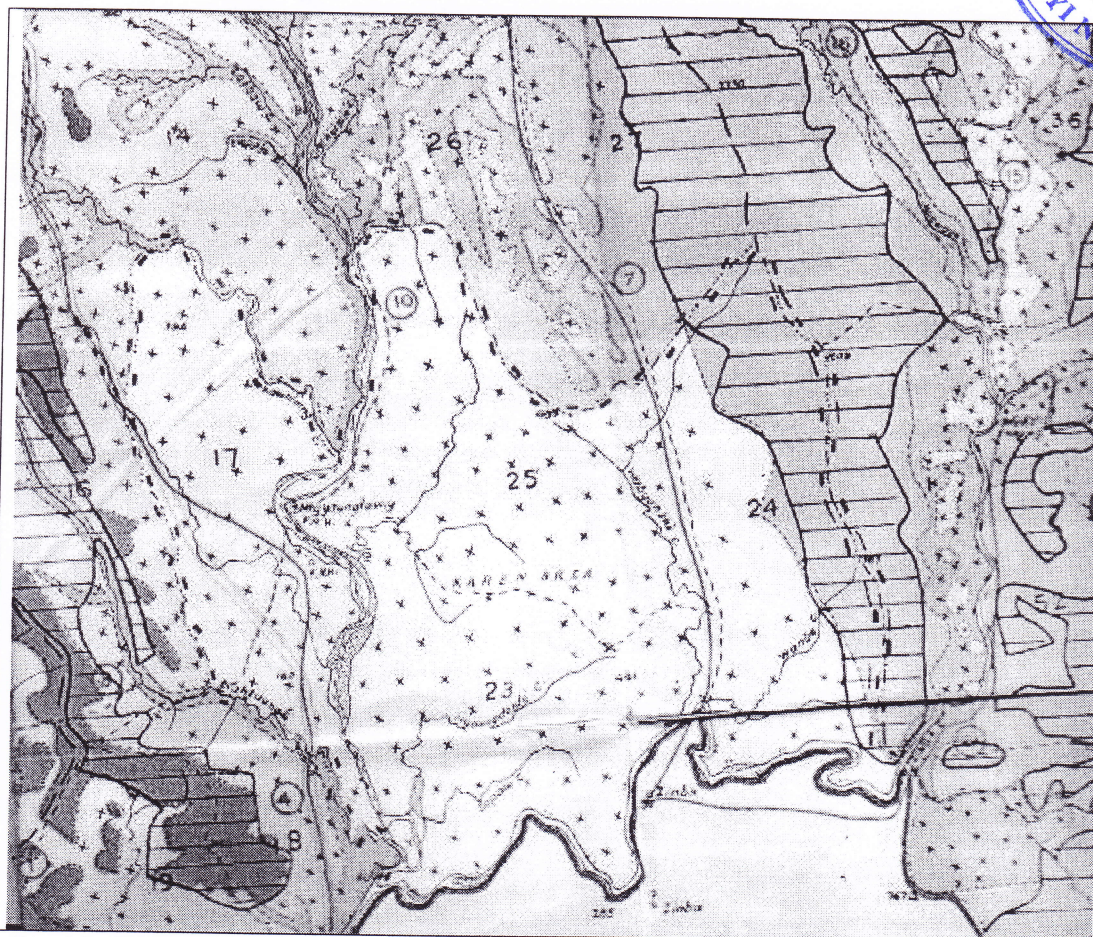
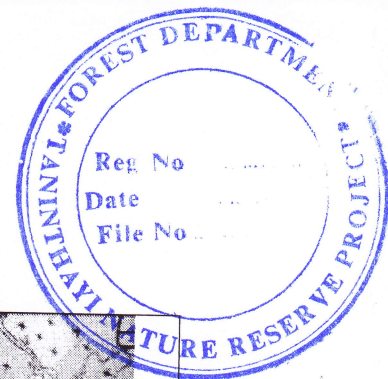


Fig 21. Stock map of the Heinze-Kaleinaung Reserve as of 1926 shows Karen area for Migyaunglaung village, where taungya practice and extraction of small forest produces for domestic use were permitted, made up of compartment 17, 23, 24 and 25.

Source: Planning & Statistic Division, FD

Within days a village meeting was held at the village chapel and CF extension was conducted by extension team of the project followed by open discussion. A week later, village meeting was called again for the formation of the users' group comprising all 76 households in the village. On 24th of September 2008, a group of villagers as well as foresters from both project and local FD explored the target area to examine its boundary and status of the forest in it. Application for establishment of CF was sent together with the exploration report by range officer concerned. The process for land approval has proceeded up to Division FD through proper channel. Meanwhile target area was surveyed by the survey team comprised of project staff and a staff from local FD and a group of seven members of the users' group also contributed their labour in survey works for ten days. The consultant and members of the users' group frequently met and discussed for the important issues related to formulation of CF management plan, a prerequisite for the issue of certificate for CF establishment. What more encouraging for

the consultant was the active participation of women, once silent speakers to outsiders in almost homogeneous Kayin Christian community (See in following village profile), in resource mapping and building consensus for choice of species to be planted.

Profile of Michaunglaung-old village

- Village : Mi Chaung Laung (old) village
- Household : 81
- Population : 423
- Ethnic : Karen
- Religion : Christian
- Occupation :
 - 50% odd-job workers
 - 30% have own land for agriculture
 - 20% teacher, nursery farm workers and company staff
- Mi Chaung Laung (old) village was established since last 200 years ago with few farmers families.
- The name Mi Chaung Laung came from Pa Saw Law

“Snow dew” in Karen language.

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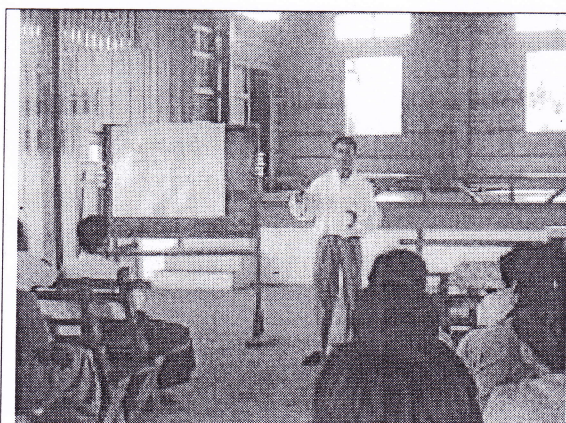


Fig 23. First village meeting for CF extension

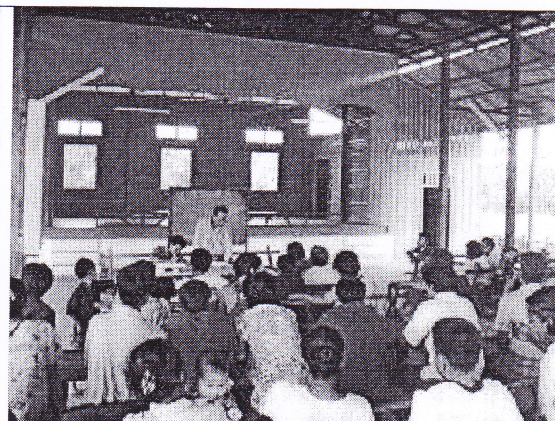


Fig 24. Users' group meeting for formulation of internal rules

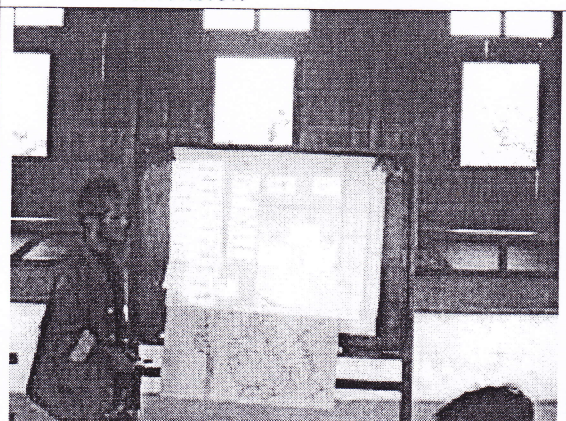


Fig 25. Building consensus for choice of species to be planted in CF

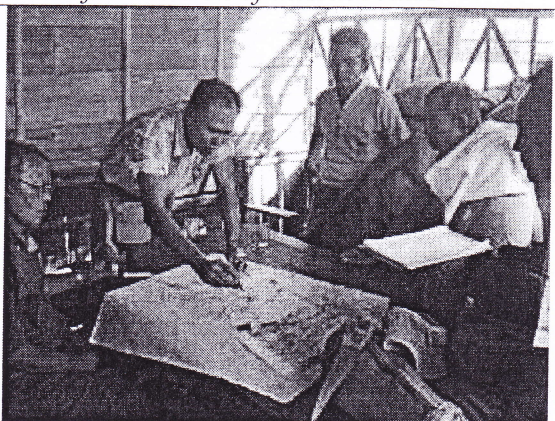


Fig 26. Formulation of management plan by users' group with the help of

Users' group had their own idea to divide the whole group into four since there were four drainage basins in the target area and each group would practice agroforestry in the low land bamboo forests of four basins where rice would grow together with cashew nut and *pyinkado* while remaining DUMD forests on the ridges would be conserved as property of common. The design of the agroforestry was rice for the whole area intercropped with cashewnuts in downhill half and *pyinkado* in uphill half. In this way shifting cultivators could own the orchards together with forest crops for their domestic use within a decade and isolated small shifting cultivation area scattered here and there could be gradually disappeared without compromising the sustainability of the original forest.

In addition to idea generation for the formulation of CF management plan, the consultant facilitated the users' group in the development of its internal rules and encouraged to raise the fund by themselves to make the group consolidated. Users' group initiated environmental consideration, for instance, prohibition on fishing by electric shock which was unlawful and unsustainable manner was put into their rules. To determine both of their busiest and free time, seasonal calendar was developed at one of the village meetings.

The work still needed was landuse agreement between users' group and TNRP since part of the target CF site in compartment 26 and 27 was overlapped with TNR. (See Figure 27.) Boundary of the TNR in this area was not clearly mentioned in the notification and was determined in accordance with the boundary developed by RS & GIS Section and the clause of the agreed principles by all parties of the project; proposed reserve shall cover the pipelines between Dawei river and Myanmar-Thai border.

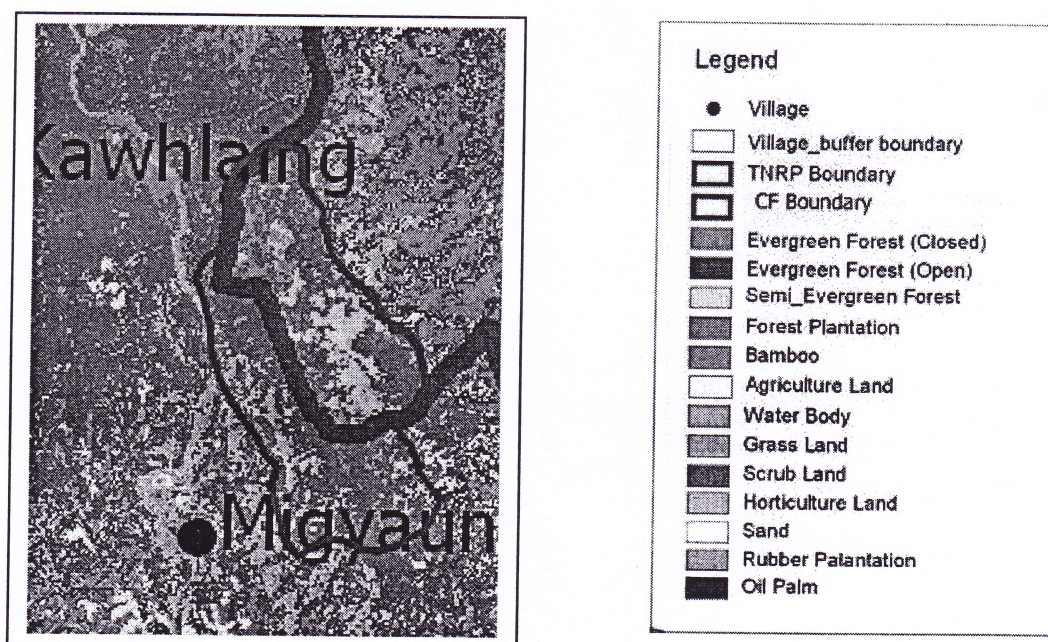


Fig 27. Target CF site of Michaunglaung (old) village partly falls in TNR

Tharyarmon

A group of households from Mon ceasefire group has settled in the area for four years ago and lived by orchard farms along the Ye- Dawei motor roads in northern part of area. Their main livelihood option, orchard farming, was heavily dependent on the water source at nearby forested mountain range in dry season. Since these forests were lifelines of the orchards, all villagers voluntarily conserved the forested mountain but they did not have the legal power to protect it from the disturbances of the surrounding villages. Just after the village meeting for CF extension conducted by the project, villagers tried to form a users' group with an aim to protect their water source area. Traverse survey for the target area was planned for further application.

Zinba

The most demographically dynamic, heterogeneous and complex community for its access to international boundary was located quite close to the TNRe. People came here for their good fortune since it was a gateway to neighbouring country at the time of smuggling business flourished. Even the passage was closed; migrant people did not go back to their place in the hope of the renewal of smuggling business while survived on the natural resources within their reach. The natural resources in their vicinity were deemed as common pool by the all villagers and there were no alternative income opportunity; nearby forest became degraded and finally depleted. Some villagers tried for orchards outside the reserve but later, these orchards were allocated for some military area. Hence, villagers moved further to the accessible area in the forest that meant they went for shifting cultivation along the bank of Zinba stream and many old orchards were detected from the satellite image even at the banks of its major tributaries. Some villagers established wet cultivation and some did orchards outside TNR but in the reserve forest of the opposite bank of the Zinba stream. Farmers from the latter area were interested to establish their livelihood oriented CF while improving remaining forest. In their orchards, many *pyinkado* saplings of coppice origin were maintained and villagers were very keen to secure the area as CF. A users' group was formed and the target area was determined for further application.

Another group of mainly landless villagers was formed for different purpose; regular exploitation of bamboo for commercial purpose from the banks of the stream and since their objective is quite different from CF, it was left for Buffer Zone Management in which some degrade area would be set aside for interior buffer zone with controlled use of minor forest products.

Profile of Zimba village

-
- Village : Zimba village
 - Household : 140
 - Population : 679
 - Ethnic : Karen 65%, Mon 15%, Dawei 10%, Bamar 10%
 - Religion : Christian, Buddhist
 - Occupation
 - 40% hill rice growing
 - 30% odd job workers
 - 20% own land for perennial trees
 - 10% are wood cutters.
 - The "Zimba" was established in 1905 with five households of wood cutters families.
 - "Zimba" descended from Thai's name **"Zim Mae"** (Chiangmai)
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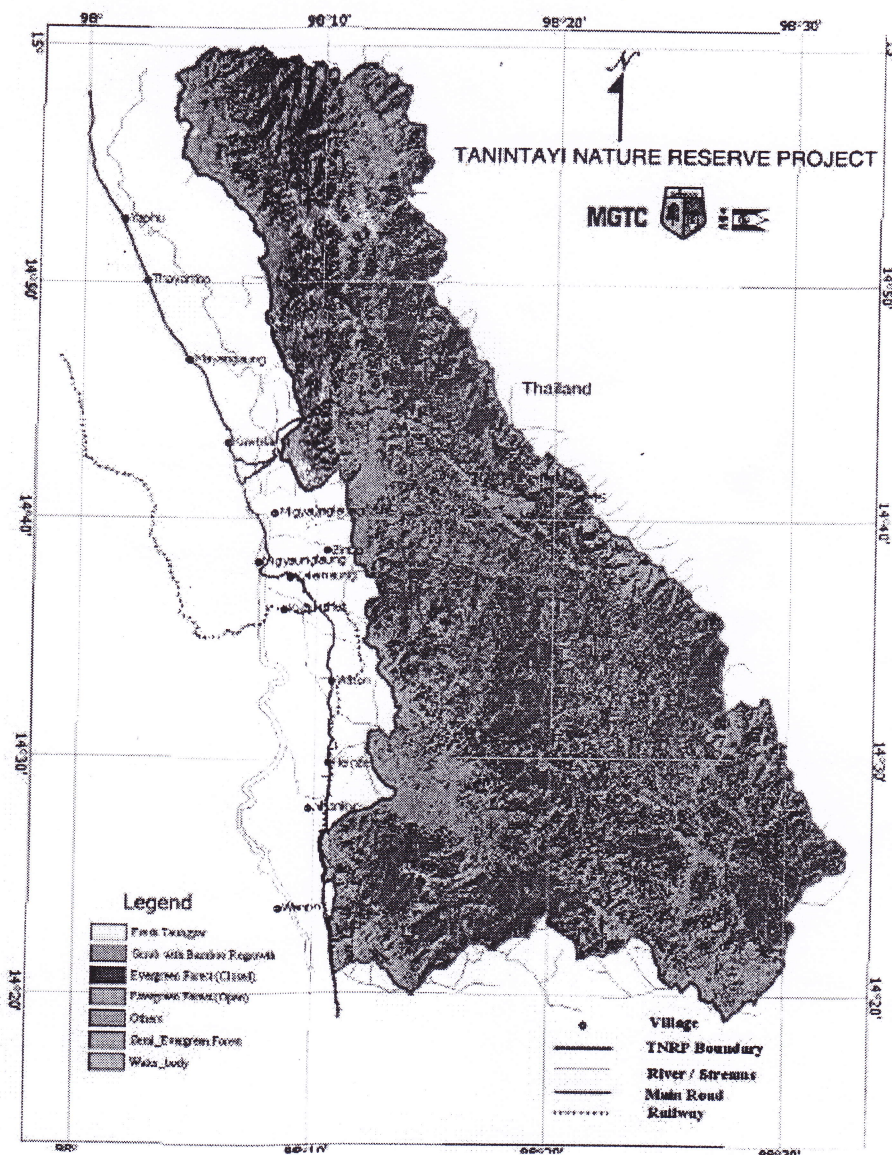
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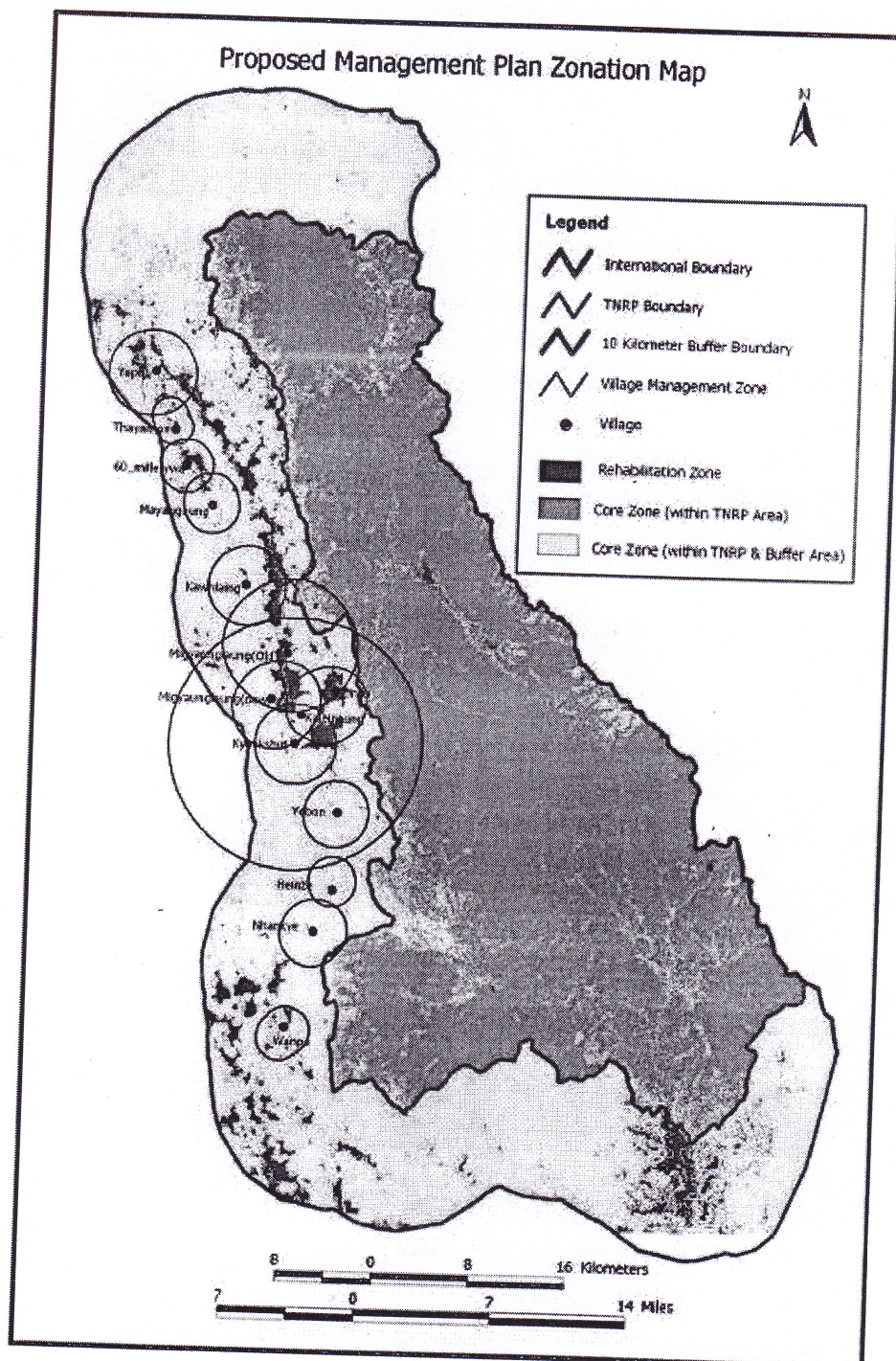
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All above three CFs were, interestingly, in different socio-cultural setting with different objectives.

- 1) At Migyaunglaung (old) village, the approach of the users' group was to regain the secured rights and privileges granted in their ancestral land like at the time of reservation. See Box 3 for rights granted in Karen areas. Traditional shifting cultivators could be mobilized in specified area for new regeneration of crops of both forestry and perennial one while existing orchard farms were set aside since consensus to integrate trees as compulsory component has not been built yet among the owners of the orchard.
- 2) Tharyarmon was newly formed settlement for a community of ceasefire Mon group and has not yet gazetted. Although there were sizable lowland farms around the village, the existence of the settlement as well as the farm would be very conditional for their political link with the ceasefire ethnic group and CF was considered as the best way to let this community strengthen their enthusiasm for conserving the nearby remaining secondary forest where there were water sources vital to them, but the legitimacy of their orchard farms should not be encouraged in the name of CF at present.
- 3) Although Zimba village was located outside the reserve forest but quite close to TNR, there was no land allocation considered for the villagers' livelihood either by the FD in the reserve or by the SLRD outside the reserve forest; actually no field survey has not yet done by SLRD for the Yebyu township except in lowland southern part and some coastal area. But there were some orchards and a few wet rice cultivations in the nearby reserve and even in TNR particularly along the Zimba stream up to its headwater. Their rights of traditional agroforestry system should be encouraged together with the assignment of the responsibility to conserve the remaining forests particularly on the ridges in the target place outside the TNR while the resource use for domestic consumption in the TNR should be permitted with control measures.





Mechanical village use zones -depicted as black circles around the villages- developed by RS & GIS section of FD would give the conflict of interests among the surrounding villages around TNR in practice and not relevant to field reality.

Seasonal Calendar of Migyaunglaung (old) village

	Work	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	Collection of cadamon seeds/ wa-u/												
2	Site clearing												
3	Fire protection for orchard												
4	Fire break for new site/ Repair house												
5	Burning taungya												
6	Reburning												
7	Planting fruit tree seeds												
8	Planting taungya rice												
9	Weeding for rice field												
10	Weeding for orchard												
11	Making storage structure for rice												
12	Rice harvest												
13	Harvest of betelnuts												
14	Harvest of cashewnuts												
15	Festivals/ Extraction of building materials for house repair												

These were also deemed as models for further expansion of CF in the project area where local conditions were similar and project could learn the lessons from them.

Discussion

To initiate CF in the project area, the first attempt was to work out biophysically suitable area for CF. However, having the fact that the available data of official sources were incomplete and inconsistent to each other and the result of the zoning for project area was still far away from use, the initial idea became seemed to be of little use. Then the emphasis was shifted to the socioeconomic condition and attitudes of the local people towards the TNRP and other development initiatives and to this end, village meetings for CF promotion became compulsory.

In fact, both the project staff and the people were not new to such an event. Although a series of village meeting for environmental talk by TNRP team have been conducted in almost all villages except some of the southernmost area, communication used was found to be almost one-sided and themes of the talk did not bring much of the hearts and minds of the local populace since it could not consider their livelihoods and to its worse, marginalized them with imposing bans and restrictions. The room for participation of local people in the management of TNR was, hence, far beyond the horizon, although the Project was said to be committed to ensure the active participation and development of the local population within and adjacent to the TNR.

Security of land tenure alone will ensure the necessary continuity of management over long periods of time and justify the enormous expenditure of money likely to be incurred thereby (SANDWELL report 1978 on Burma Forestry Feasibility Study).

Findings

- 1) Southernmost and northernmost parts of the project area are still away from all survey done by the first phase of the project for various constraints such as security, transportation and accessibility. However, enormous human disturbances in those areas were apparently detected in landuse/land cover map as well as false color imagery.
- 2) Languages, different essence for same language and the local name for trees and bamboos were burdensome for project staff and it took much time to understand each other even for a small issue and it is in doubt how much of the understanding among the villagers and project staff were correct.
- 3) Many foresters viewed agroforestry as taungya system in which forest trees were intercropped with agricultural herbaceous plants while the latter had a complimentary role and they were reluctant to acknowledge other design of the agroforestry.
- 4) Knowledge and perception of the staff of local FD on Community Forestry is seemed low since many prior CF applications were left unattended at both township and district forest offices, even though current TFO as well as DFO previously had much experience in the CF promotion project in the central dry zone. This might be due to considerable pressures for promotion of private plantation from the ministry of Forestry and rubber and palm oil plantation policy

of the State. Very little time is available for them to pay attention to the needs of the local people who heavily relies on forest areas. Both officers, however, reflecting their past experiences, agreed that proper training is a prerequisite for any CF initiatives.

- 5) Since most of the project staff were recruited from the national parks and wildlife sanctuaries, their attitudes were still stick to the conservation and not fully ready to be social foresters although they have participated in the both introductory and planning training courses for CF. According to the assessment made during the latter course, CF extension and involvement in community work stood not higher than fifth and eighth respectively in priority given among the ten responsibilities supposed to be carried out by project.
- 6) Through a series of village meeting for CF extension, project staff were tested, and with the help of visual aids and two way communication practices, they became more confidants and improved in front of the all-time-new audience. This is a progress made through the process of learning by doing. Participatory approach has been build up among them to certain extent.
- 7) Villagers whose livelihood mostly relied on agriculture lost their agricultural land for various reasons such as new land allocation for military base, oil palm and rubber plantations of the giant private business companies, settlements for ceasefire groups and last but not the least, rubber promotion programme along the access roads for both security and economic reasons. They became sandwiched between TNR and agricultural colony area; both were external interventions and marginalized their livelihood.
- 8) Potential for CF in the forested land other than PFE was almost impossible since this forested area was not under the jurisdiction of FD and according to SLRD's land classification, it was a part of cultivatable land. Moreover, there was no instruction for CF in both SLRD and district PDC which was the lowest authority to exercise power to issue grant for the limited area of land. To acquire landuse grant for CF in such a land, application for reclamation of waste land up to the central level could be a single mean but it was actually beyond the reach of local people.
- 9) Landuse either legal or illegal in the reserve forest were not under the jurisdiction of FD in practice since understaffed and ill equipped local FD was marginalized by political will and security constraints.
- 10) CF alone cannot mitigate the poverty which is the main reason for heavy dependence on the natural resources. Man-made resources like agricultural products are already there and what apparently needed were efficiency in production and maximization of the profits.
- 11) Legitimacy of users' group is still unclear since there is no room for it in any prevailing law.

Recommendations

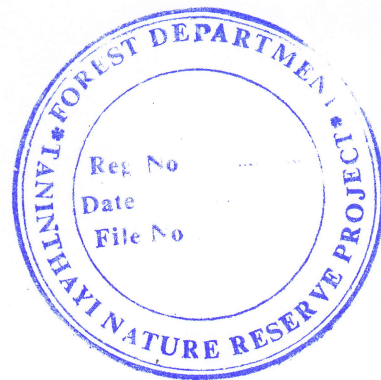
- 1) Southernmost and northernmost areas should be in priority for next phase in order to give the same treatment to all concerned communities.
- 2) It would be effective to appoint local staff for better communication with local people.
- 3) Good relationship between the project and local authorities including various government agencies would make project activities run smooth and swift. Working group consisting necessary representatives from such local institutions should be initiated and motivated with a minimum view to avoid misunderstanding and possible conflicts. Project should bear all the cost for making this group work efficiently since the rest were not funded for this movement.
- 4) Securing land tenure with restrictions like CF for already existed eco-friendly orchards or homestead gardens should be initiated in area adjacent to TNR in order to mitigate the further encroachments in and dependence on the nature reserve and protect them from conversion to monoculture cash crop.
- 5) Trainings for both project staff and users' groups should be on going and be suited to the needs in the field reality in accordance with the progress of the CF establishment activities.
- 6) In order to gain the wide acceptance and collaboration from the other stakeholders, workshops should be conducted as necessary.
- 7) Survey equipments of good accuracy for plane table survey should be equipped.
- 8) Legitimacy of the users' group should be in accordance with the prevailing rules and regulations of the State. At least, registration of such groups can be done at the township cooperative department. In this regard, users' group should have their own fund and internal rules as per Cooperative Law. In such a way, credit will be available for the users' groups.
- 9) CF should not be view as field operation alone since it is mostly associated with social issues. Thus, keeping in touch with the communities as much as possible will enhance the efforts of the project staff. Encourage village meetings and try to participate in those meetings as a facilitator not as a conventional forester. In this regard, social skill for the project staff is still in a stage of infancy. Future trainings should be focused more on social rather than technical.
- 10) CF alone cannot mitigate the heavy dependence on the natural resources. Education program and law enforcement should be incorporated to reduce the human impact on the nature reserve.
- 11) Training for villagers should be technically oriented to their livelihood such as horticulture, the impact of the use of pesticides and fertilizers and compost making.
- 12) Whenever agroforestry has to incorporate into CF, foresters should realize that their knowledge on agroforestry was limited and have wider scope on it.

Conclusions

Community Forestry is not only dealing with forestry but also with sociology which is still too strange for most of the foresters who generally are conservative-minded. Local people are often viewed as obstacles for conservation and culprits of the deforestation. Lessons learned from the area proved they are not the only one to blame for deforestation and external interventions like policy which are beyond their control often enhance the deforestation. They are resource poor and cannot withstand the agricultural colonization of the giant business companies of the influential people and the state alike. Some rooms and chances for them are in dire need for sustainable management of the nature resources bounded together with them as long as they were therein.

Some of the following points -mentioned in the article titled "Perceptions of excellence: Ingredients of good forest management" by Chris Brown, Patrick B. Darst and Thomas Enters in the book: **In search of excellence: Exemplary forest management in Asia and the Pacific**- were totally agree with the situations in the project area:-

- If two parties had not trusted each other, the initiative would have faltered before the first tree was planted.
- A key challenge for the community was to protect the area, and later the forest, from encroachers, including attempts by powerful individuals to expropriate parts of the area for their own use.
- There is a need for an institutional framework capable of enforcing well-defined rights and providing assurance that the benefits from today's hard work will still be there tomorrow. This does not necessarily mean providing community or individuals with transferable land title. Increasing tenure security, which can be achieved in various ways, may be sufficient and is often judged to be the most effective contribution to successful forest management.
- An important message is to think twice before tinkering with something that has worked for generations. It is most likely outstanding- otherwise it would have long been extinct.
- Forest degradation and deforestation are usually the result of overexploitation in search of income. Without alternative income-generating options, people have little choice but to resort to whatever livelihood opportunities that forests offer, often with severe negative repercussions on the forest.
- Ultimately, all situations are unique and expecting one blueprint to fit for all invites failure.



Box 3. RIGHTS.

Rights granted in the Kaleinaung Reserve.

33. The Karens within their areas are permitted to-

- (a) Collect forest produce for home consumption and practice *taungya* cultivation with the proviso that none of the reserved trees, namely, *pyinkado*, *thinganmagale*, *anan*, *kanazo*, *karawe* and *padauk* be cut, mutilated or destroyed;
- (b) graze cattle over the whole area.

Further, the Migyaunglaung villagers may collect canes at and around Shunlet-kat-*sakan* for home use but not for sale, and the Yabu villagers may collect leaves of the wild toddy palm (*taungtan*, *thunpet* and *tangopet*) for house thatching in the reserve, on the western bank of Tavoy river between the Kaleinaung and Yenauk streams for home use but not for sale.

The following rights were granted to the public in general:-

(a) Rights of way along the following paths:-

- (1) The path which goes from Migyaunglaung village to Yabu village.
- (2) The path which goes from Migyaunglaung village to Shintabi village.
- (3) The path which goes from Migyaunglaung village to Zinba village.
- (4) The path which goes from Migyaunglaung village to the Siamese Frontier via Natkyisi, Kade *sakan* and the Ethe stream.

(b) The privilege of cutting bamboos, timber of unreserved kinds of less than three feet in girth and firewood for use *en route* within 100 feet on each side of the above roads, as also grazing rights within one mile of such places as many be duly notified as public camping grounds. At the time of settlement five men were given rights to maintain and use their plantain gardens situated near the Kyauktan stream for five years subject to certain conditions.

Rights granted in the Heinze Reserve.

34. These rights are difficult to summarise and so they are given in detail below as stated in the notification constituting the reserve.

(a) The villagers of Eindayaza (thirty houses) are permitted.

.....
(b) The villagers of Migyaunglaung (thirty-three houses) are permitted-

- (i) To extract 300 pieces of thatch of *tango*, or *yingan* and ten leaves of *salu* for *kamauks* yearly for domestic use and not for barter or sale within the reserve.
 - (ii) To collect 30 posts up to three feet in girth within every ten years of the *taungbein* or *migyaunggyi* or *thitkauk* or *tagu* trees on the written permission of the Divisional Forest Officer within the reserve.
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Source: Volume I of the Working Plan for the Heinze-Kaleinaung Reserve, South Tenasserim Forest Division for the period of 1926-27 to 1935-36