

VOLUME 2 – CHAPTER 6

MITIGATION AND ETHNIC MINORITY ISSUES

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6 MITIGATION MEASURES

The following sections outline the mitigation measures to be carried out as part of the SDP (see Chapters 10 to 17). This chapter deals with livelihood development systems, site location and identification, infrastructure improvements, health and education improvements, gender-specific mitigation measures and measures to guard cultural heritage and emphasises social and cultural issues. Technical details are provided in the SDP.

6.1 RIGHTS TO LAND AND RESOURCES

Chapter 3 in Volume 1 of the SDP outlines in detail the legal and policy framework. Some important aspects should be noted in relation to the resettlement of ethnic minorities on the Plateau since rights to land and resources is a key issues to the long-term sustainability of the plan and the long-term security of the affected persons. A sense of ownership is essential if the livelihood development options and relocation process is to be carried out successfully.

The NT2 Resettlement Policy “provides for the application of special measures as required towards ethnic minorities and vulnerable persons to assist them to take care of their needs and foster self- reliance” (Article 1). Entitlements and eligibility are outlined in the Resettlement Regulations and allow for the natural increase in family sizes and compensation options. The Concession Agreement

Decree No. 37/PM of 12 April 2002 approves the allocation of the Resettlement and Forest Area to the affected people on the Nakai Plateau. Land title document have been issued to resettlers in the Pilot Village of Nong Boua and will be issued to all resettlers on the Plateau upon relocation as well as resettlers in the Bolikhamxai village site. These documents cover the resettlement household plots and 0.5 ha of farming land in the vicinity of the household plots.

Decree No. 193/PM of 29 December 2000 establishing the Nakai-Nam Theun NBCA Corridor Areas, the reservoir area, and the Resettlement and Forest Area for the affected people. Regulations for the establishment and operations of the Nakai Plateau Village Forestry Association (NPVFA) have been approved by the Ministry of Agriculture and Forestry (MAF) and authorized by the Governor of Khammouane Province. This establishes the NPVFA as a legal entity and will have sole rights to harvest and sell timber and NTFPs from the allocated forest, provided this is done in a sustainable manner. Sustainable forest management is the main obligation of NPVFA, which will be undertaken by carrying out planning, forest management, protection, and conservation activities. In order to legally conduct a forestry business according to MAF one requires a license for logging, sawmilling and wood processing and furniture factories. NPVFA has applied for all three licenses but has so far only obtained one for wood processing and furniture factories. Thus the resettlers, in the form of the NPVFA, have the right only to the resources of the forest as long as they are properly managed but not to the land itself.

The GoL is in the process of developing a legal instrument¹ aimed at strengthening the previous PM Decree's 193 and 37 in order to ensure that;

- (a) The forest resources in the Resettlement Area are for the exclusive use and benefit of the plateau resettlers only;
- (b) The allocation and use land in the Resettlement Area is undertaken within framework that resettlers have the primary right to land use, both currently and in the future;
- (c) Land titles will be issued for all housing and permanent agricultural land within one year of actually relocating, building new houses or opening and planting the first crop on the agriculture land. However, these titles will be issued with a caveat prohibiting the sale of such land within the 8 to 9 year resettlement period, unless otherwise adjudicated by the Grievance Committee;
- (d) The fisheries resource in the Nakai Reservoir is for the exclusive use of Plateau resettlers (and those currently fishing in the proposed inundation zone) until such time as it is proven that such fisheries resources are in excess of the requirement of the Nakai fishers or their descendents; and

14.6.2.1

¹ As above, this legal instrument is still under review by the IFIs

- (e) the trading in the reservoir fisheries resources is to be conducted only by the authorized reservoir fishers (the plateau resettlers, reservoir area fishers, and their descendents).

6.2 IMPACTS ON LIVELIHOODS AND APPROACH

Inundation of up to 40% of the Nakai Plateau will result in the loss of a significant portion of the land currently used by the villages for agriculture, livestock grazing, gathering of NTFPs and hunting. However, the reservoir is likely to increase fish yield and will provide a source of water for irrigated farming. The drawdown zone offers a potential for seasonal agriculture, grazing and aquaculture.

Currently, agricultural productivity is constrained by inadequate water supply, seasonal flooding, poor soil fertility, and the lack of capital and technological ability. The inhabitants of the villages affected by the reservoir currently live much below the national poverty line and they are aware of their dwindling resource base. Rice cultivation is generally poor and all villages have recurring food deficits. Of the 450 km² to be inundated by the reservoir, it is estimated that only 46 km² has actually been cultivated; the rest being largely under degraded secondary forest cover. The CARE (1996) socio-economic survey found that there were 78 ha of wetland paddy and 486 ha of upland rice within the reservoir area but considerable rice deficits for over 8 months in the year on average.

The affected people have not traditionally depended on a single source of income for their livelihoods, having subsisted on shifting cultivation, livestock, fishing, hunting, gathering of forest products and to a lesser extent on paid employment. Public consultations conducted with the affected people have indicated that they do not wish to move too far away from their present villages.

During the second round of PCPP in 1998, the main concern expressed was food security, but this did not mean, nor has it ever meant, self-sufficiency in rice. The communities are accustomed to exchanging forest products and buffalo to make up deficiencies in rice production. Hence, promise of gardens, fruit trees and livestock in their new lives helped to create some impression of food security which was familiar, building on their existing practices. In communities where there was rice production, primarily the Brou villages to the south-east and Ban Nakai Tai and Ban Nakai Neua (along the main road), there was also considerable interest in paddy.

As regards forestry, their only experience is the plantation owned by BPKP near Ban Oudomsouk where some of the nearby villagers work. Even though the BPKP plantation has not been completely successful in achieving expected targets, many showed interest in the prospect of working on communal plantations or working for companies since this held the promise of a stable cash income. In addition, many participants were relieved that they could stay on the plateau and stated that they were willing to try anything in order to improve their lot.

Villagers are aware that the GOL prefers that they stop practicing swidden agriculture and many felt that they would be moved to the lowlands far from the forests, their traditional source of income. However they are also aware that their new lifestyle will have a number of unfamiliar aspects which, while they are willing to try, they know will require training. As outlined later, there will be training and feedback from monitoring, and this is a key component of the overall plan.

6.3 SITE IDENTIFICATION

6.3.1 Suitable Locations on the Nakai Plateau

The first step in developing new livelihood options for the Nakai resettlers was to identify suitable land on the Plateau in accordance with their wishes to remain there (see Chapter 10). Land should be suitable for agricultural development, easily accessible, with available water supply year round and located near the reservoir. Twenty-five sites were chosen on the western edge of the Nakai Plateau in Zone 3 within the current Plateau village boundaries, except for the two affected villages in Bolikhamxay Province, Ban Sop Hia and Ban Nam Nian, which may still opt for relocation in the same province, which is north of the dam site.

The capacity of the areas on Nakai Plateau to provide the necessary resources for the livelihood of resettlers was assessed in detail in the 1996/97 dry season. The total area of the land available as the Plateau Resettlement Area is almost 22,000 ha. Previous consultations with villagers resulted in strong

indications of their preference to be near the future reservoir and to new roads. Table 6-1 summarizes the results of consultations carried out as part of the PCPP in 1997.

Table 6-1: Resettlement Preferences of Villages on the Nakai Plateau, 1997

Village	Within vicinity	Water source	Road access	Forest access	Grazing areas	Paddy	Orchards	Vegetable gardens	Market	Well water	Electricity	Toilets	School	Dispensary	Temple	Village hall	Rice mill
Ban Sop Hia	•	•	•	•				•			•		•	•			
Ban Nam Nian	•	•	•			•			•	•	•	•	•	•		•	
Ban Thalang	•	•	•	•					•		•	•	•	•	•	•	
Ban Nakai Tai	•	•	•			•	•	•	•	•	•	•	•	•	•	•	•
Ban Nakai Neua	•	•	•			•	•	•	•	•	•	•	•	•	•	•	•
Ban Sop Phene	•	•	•	•	•		•	•		•	•		•	•			
Ban Sop Ma*	•	•	•					•	•	•	•	•	•	•	•		•
Ban Sailom**	•	•	•			•	•	•		•	•	•	•	•	•	•	•
Ban Boua Ma	•		•	•				•	•	•	•	•	•	•	•	•	•
Ban Phonsavang	•	•	•		•	•	•		•		•	•	•	•	•		•
Ban Sop On***	•	•	•	•	•	•	•		•	•	•	•	•	•	•		•
Ban Done	•	•	•			•	•	•	•	•	•	•	•	•	•	•	•
Ban Khone Khen	•		•		•	•					•	•	•	•			•

* Ban Sop Ma includes three hamlets: Ban Sop Ma, Ban Hat Khamphane and Ban Keng Gnao

** Ban Sailom includes three hamlets: Ban Nong Boua Kham, Ban Sailom and Ban Pamanton

*** Ban Sop On includes the three households of Ban Nikhom 3

The results of the PCPP map-making exercises of “dream maps” reveal that villagers would prefer the following aspects for their new villages:

- Orientation of the village along roads with each house having access to the road. This seems to have replaced the structuring aspect of the river in traditional villages. The road is seen as representing progress and a link with the outside world, that is markets and possible wage labour.
- Improvements such as electricity, access to running water and toilets that are privately owned and not communally shared. Each household preferred their own garden area.
- Non-residential buildings such as the school, dispensary, pump-house, village hall and religious structures to be located outside the grouping of houses as they usually are in traditional villages.
- Surrounding the village was paddy or fields for growing crops such as corn, sugar cane or larger plots for vegetables. On a few maps villagers located forests and grazing areas further a field.

When the ideas for the new village were presented to the villagers in the second round of PCPP in 1998, the vast majority welcomed the potential lifestyle improvements given the poor economic situation on the Plateau.

6.3.2 Village Boundaries

Earlier reviews of village boundaries indicated that it would be possible to relocate most households within their current village boundaries. Therefore, efforts have been made to select sites within existing traditional territories because such cultural continuity and familiarity potentially reduces possible disruption or psychological stress created by the resettlement process.

Two classifications exist with regard to the administrative and political status of the existing villages on the Plateau. Administrative villages are those with over 20 households or 100 families. These are formally recognized as villages with defined boundaries and associated responsibilities and obligations to the

respective district in which they occur. The second type of classification is the “cluster village”, generally not recognized at the District level in the planning and administrative context. These “cluster villages” tend to be small and scattered throughout the village boundary of the major administratively recognized village in which they occur. Often these cluster villages (or hamlets) form when villagers have moved into the boundary area from elsewhere and have requested permission of the resident administratively-recognized village chief to establish their households. These distinctions are recognized and acknowledged in local terminology. For the purposes of ease of description, these administrative and non-administrative village types are combined.

Table 6-2: Resettlement Site Suitability

Reservoir Village Admin. Unit	Potential 1997-98 resettlement sites and Distances to each site	Zone selection 2004/2005	Within cultural boundary?	Within land use boundary?	Within Admin boundary?
Sop Hia – Tai Ethnic Groups	1. Sites 7-13 (section of Thalang) – 10-15 km 2. Nam Pan area, Bolikhamxai – 28 km 3. Backward relocation, ca. 500m on higher ground	Most Tai prefer Nam Pan site – 28km	N	N	N
Sop Hia – Vietic Ethnic Groups	1. Sites 7-13 (section of Thalang) – 10-15 km 2. Nam Pan area, Bolikhamxai – 28 km 3. Backward relocation, ca. 500m on higher ground	Vietic to split between: a) Nam Pan – 28km	N	N	N
		b) Near Zones 11: 13km (sub-unit of Thalang)	N	Y	N
Nam Nian	Nam Pan area, Bolikhamxai	Nam Pan: 28 km	N	N	N
Thalang	Site 11 - 2 km Site 12 - 2.5 km Site 13 - 1 km	Zone 11: 0.5km	Y	Y	Y
Nong Boua Kham	Site 5 - 1.5 km Site 6 - 2 km Site 8 - 2 km	Zone 7: 2.9km	Y	Y	Y
Nakai Tai	Site 4a) - 1 km Site 4b) - 2 km Site 4c) - 3 km	Zone 2: 2.6km	Y	Y	Y
Nakai Neua	Site 1 - 1 km Site 2 - 1 km Site 3 - 0.5 km	Zone 1: 0.9km	Y	Y	Y
Sop Phene	Site 1 - 5 km Site 2 - 5 km Site 3 - 5 km	Zone 11: 12.2km	Y	N	N
Hat Khamphane, Sop Ma Keng Gnao	Site 14 - 6km Site 15 - 6km Site 16 - 6km	Zone 8: 10.6km (one Admin unit)	Y	N	N
Sailom Nong Boua, Pamanton	Site 16 - 2km Site 17 - 3km Site 18 - 3km	Zone 16: 2km (Pilot Village – one Admin unit)	Y	Y	Y
Boua Ma	Site 17 - 2km Site 18 - 1km Site 19 - 3km	Zone 17: 2km	Y	Y	Y
Phonsavang	Site 19 - 3km Site 20a) - 1km Site 20b) - 5km	Zone 19: 3.5km (with Sop On)	Y	N	N
Sop On (including Ban Nikhom 3)	Site 20a) - 3km Site 20b) - 3km Site 21 - 4km	Zone 19: 3.5km	Y	Y	Y
Done	Site 21a) - 3km Site 21b) - 2km Site 21c) - 2km Site 22 - 2km	Zone 21: 2.9km	Y	Y	Y
Khone Khen	Site 23 - 4km Site 24 - 6km Site 25 - 7km	Zone 22: 2km	Y	Y	Y
Ka Oy	Site 20a) - 1km Site 20b) - 1km	Not yet decided – Consultations in Feb 05	N	N	N

Traditional village territories tend to follow natural features of the landscape and correspond to land usage of the members of a village. Non-members of the village should first seek permission from village leaders before they can practice swidden cultivation or harvest forest products. Furthermore, these territories have a cosmological dimension. Many villages have guardian spirits (*phi muang*) whose territory corresponds to traditional boundaries for larger, more established villages. Other villages are included in these boundaries.

6.3.3 Village Consolidation and Splitting

Considerable efforts have been made to retain existing village structures and respect the requests of site locations, but one has also to consider village size and the practical arrangements of providing suitable infrastructure and services. In terms of sustainability of institutions and organisations, one requires a minimum number of people. A number of consolidations may occur depending on final consultations and detailed planning. It should be emphasised that the practical aspects will be carefully balanced with social and cultural aspects for the optimal resettlement solution.

The following consolidations will occur:

The hamlets of Nongboua, Sailom and Pamonton: these three hamlets are an unstable group that has changed composition and location several times over the past 10 years. Originally, a number of families that left the large village of Bouma, a mixed Bo and Brou village, to establish a new village called Sailom. This later split into three different hamlets in the 1990s. In 2001, Pamonton ceased to exist as its inhabitants joined the other two hamlets of Sailom and Nongboua. The Pilot Village has involved the relocation of the remaining two hamlets into one new village, called Nongboua Mai (*mai* meaning new). No problems regarding ethnicity have occurred and this is mostly likely because both Bo and Brou families have been living together for some time and are originally from the same village of Bouama – the language of the village is Lao and the culture is a shared ‘Nakai’ culture of the Plateau. Villagers themselves agreed to this arrangement during detailed consultations. The Pilot Village is organised spatially according to the four main clans or original founding families, three Bo and one Brou. Relocation is within traditional territory, within the spirit boundaries of Bouma, the village of origin.

The villages of Keng Ngao, Hat Khamphene and Sop Ma are all small villages located on the left bank of the Nam Theun above the bridge at Thalang. They form one administrative unit with a single leadership structure. The first village is a predominantly Brou village while the latter two have majority Bo populations. All three settlements were originally offshoots from Ban Bouma but a number of Brou households joined these settlements from Ban Teng and Ban Thaphaiban in the NT2 Watershed area. Two possible sites are proposed for all three settlements since none are more than 30 households. No problems regarding ethnicity are envisaged since both Bo and Brou families have been living together for some time and are already functioning administratively as one village. Relocation is likely to be outside traditional boundaries but within familiar territory with the same neighbouring villages.

The village of Ka-Oy to the north of the proposed reservoir and on the Nam Theun is a traditional Brou village. There are close ties with the neighbouring villages on the Nakai Plateau, intermarriage and trade agreements, especially with Ban Done and Ban Sop On. There has also been a history of migration up and down the Nam Theun in search of suitable sites for swidden and to avoid flooding and pests. Villagers in Ka-Oy look upon the other Brou villages as relatives (*phii nong*) and should not have a problem integrating with regards to ethnicity. According to the latest consultations, 12 HHs have opted to resettle in Sop On and 25 HHs in Done.

The village of Phonesavang is a Brou village that has been formed by households from Sop On to the southeast and by new arrivals from the NT 2 Watershed Area. Many of these villages are related but a number of families have connections to villages to the north in the Watershed. The latter are relative new arrivals. The proposed integration into the new site for Sop On should not create problems for ethnicity as long as traditional clans and kinship organisation are respected in layout. The ethnic composition of the New Sop On will differ from the old village in that the former will contain a slight majority of Brou households while the former village was about 65% Tai Bo. However, in both villages there are Brou and Bo population and no problems related to ethnicity are envisaged. Intermarriage between these groups is common.

Table 6-3: Household Choices for Relocation Sites – December 2004 Consultations

No	Village	No. of households	No. of Families	Nakai neua	Sop Phen	Sop Ma	Nakai Tai	Nongbouakham	Talang	Boua Ma	Sop On	Phonsavang	Ka Oy	Done	Khonkhaen	Sophia – Nam Nian	Nampan	Phonphanhpeak	Oudomsouk	Nongboua	Relocation outside Nakai	Total to other locations	
1	Nakai Neua	84	87	83															1	3		4	
2	Sopphene	49	55	1	53				1														2
3	Sop Ma	62	73			52														21			21
4	Nakai Tai	177	205	1			199		2		3												6
5	Nongboua Kham	47	55					55															0
6	Talang	67	68						68														0
7	Boua Ma	73	84							84													0
8	Sop On	109	112								112												0
9	Phonsavang	30	36									36											0
10	Ka Oy	29	37								12			25									37
11	Done	124	154											154									0
12	Khonkhene	44	46												46								0
13	Sophia	55	55						22								31					2	24
14	Nam Nian	27	27														27						0
	Total	977	1094	85	53	52	199	55	93	84	127	36	0	179	46	0	58	0	1	24	2	94	

There are also two examples of splitting of existing villages. Both Sop Hia and Nam Nian villages in the northeastern part of the Plateau. The Tai populations in the villages of Sop Hia and Nam Nian in Bolikhamxai Province are special case since all are recent arrivals (within the last 5 to 15 years) from Khamkeut District and surrounding areas in Bolikhamxai Province. These Tai villagers are located beside existing Vietic groups and have adapted to swidden farming and gathering of NTFPs. This was an economic migration caused in part by a shortage of land in their original Tai village sites and in part by the opportunity to exploit an area relatively rich in natural resources and with a low population. The relocation of the Tai-speaking groups to a site in Bolikhamxai will return them to familiar territory but with support for developing a sustainable livelihood system. The different Tai groups speak different dialects (Tai Daeng, Tai Moey, Tai Men, Tai Khao, etc.) and are divided into clans but there is considerable intermarriage and shared values. The communities in the proposed resettlement sites (Ban Nam Pan area) are also the same Tai groups, and have also fairly recently moved to that area.

It was assumed that the Vietic groups in Sop Hia (Ahoe and Phong) along with the few Vietic households in Nam Nian would establish their own village on the Plateau, on the shores of the reservoir, in the vicinity of Thalang with which they were likely to share educational and health facilities. It was considered important that the Vietic groups establish their own village site to ensure that they are not dominated by other groups as has been the case in Sop Hia where Tai in-migration has led to a lack of representation of Vietic villagers in leadership and the overexploitation of available natural resources in the area by new in-migrants. However, the most recent consultations with Vietic groups has resulted in a split with more than half of the households opting to relocate at Nam Pan along with most of the Tai groups, and the remainder with some Tai Bo and other groups to join Thalang (See Section 14.4.4) for present status.

6.3.4 Mechanisms for Reaching Consensus and Conflict Resolution

As is explained in the above sections, efforts have been made to relocate villages within traditional territories and taking into account ethnic composition. Most of the suggested consolidations and splitting of villages above have been discussed with villagers and consultations are underway to ensure that any problems are dealt with in an open manner. The process of reaching consensus and resolving potential conflicts about village boundaries are similar to how the consultation process for all villages will proceed.

Consensus about any possible consolidation and splitting or alteration in village boundaries will require the following steps:

- Based on technical and practical considerations for site requirements and population, potential consolidation of villages will be identified
- Examination of baseline data and analysis of the consultation concerns and proposals will identify whether there is an issue of internal cohesion or ethnic tension (separation of ethnic groups) in the community or series of hamlets that make up a community
- Consultations (August 2004) have introduced the idea of consolidation and splitting of village to all location on the Plateau – villagers will then have time to consider options and to discussion these options among themselves informally
- Consultations (Planned for November-December 2004) will be undertaken to determine resettlement sites for new villages so that detailed site planning and preparation may commence. At this point a consensus needs to be reached.
- If there are some households not agreeing on a particular relocation site, other site options may be considered since it all cases of consolidation and splitting there are options.
- A formal agreement then needs to be drafted and signed with village leaders on behalf of the village confirming site choice

There are a number of conflict resolution mechanisms at the local level that could be drawn on to solve any potential problems regarding the realignment of traditional or spirit territories or the establishment of one village in the territory of another village. Table 6-4 outlines potential changes in traditional territories.

From the point of view of village administration units, a consultation process will be initiated that will include local authorities (District and previous village leaders), NTPC technical staff and the affected persons in the village. The alignment of village boundaries will depend on a number of key factors:

- Location and proximity of villages in the resettlement areas

- Land use and resource use requirements, especially community forestry needs
- Size of resettlement sites (at least 50 households are required for full village administrative status)
- Ethnicity and spirit territories

Table 6-4: Realignment of Traditional/Spirit Territory Boundaries

Ritual Centre (Main Village)	Villages	Changes in Boundaries
Sop Hia – Vietic spirit residing in rapids near dam site	Sop Hia (Vietic)	Movement out of spirit area (under control of female Vietic Medium at Sop Hia) into Thalang spirit territory
	Sop Hia (Tai groups)	Movement out of Vietic spirit territory into spirit territory of Nam Pan (Tai)
Thalang – Tai Bo spirit residing in rapids near village	Thalang (Tai, Brou and Lao groups)	Reduction of spirit territory size (realignment of boundaries)
	Nam Nian (Vietic)	Movement within existing territory of Thalang
Nakai Tai – Tai Bo spirit residing in nearby mountain	Nakai Tai	Reduction of spirit territory size and incorporation of part of Nakai Neua territory (realignment of boundaries)
	Nong Boua Kham	Movement within existing territory
Nakai Neua – Tai Bo spirit (former village leader)	Nakai Neua	Reduction of spirit territory size (realignment of boundaries)
	Sop Phene	Movement within existing territory
Sop On – Tai Bo spirit and former medium of village (refers to old salt licks)	Sop On	Reduction of spirit territory size (realignment of boundaries)
	Sop Ma	Movement within existing territory (option of move into Nakai Tai territory)
	Hat Khamphane	Movement within existing territory (option of move into Nakai Tai territory)
	Keng Gnao	Movement within existing territory
	Boua Ma	Movement within existing territory
	Sailom (Pilot)	Movement within existing territory
	Phonsavang	Movement within existing territory
Ka-Oy – Brou spirit of former village leader	Ka-Oy	Movement out of spirit area neighbouring spirit territory of either Sop On, Done or Khone Khene
Done – Brou spirit of former village leader	Done	Reduction of spirit territory size (realignment of boundaries)
Khone Khene – Brou spirit of former village leader	Khone Khene	Reduction of spirit territory size (realignment of boundaries)

The location, resources and cultural requirements have already been addressed in terms of the ongoing detailed site locations (Chapter 10). The actual number of villages and composition is not yet fully fixed since villagers at a number of sites still have to choose as to where they would like to relocate. The eventual number of village administrative units is yet to be determined. A consultation process will be initiated after a preliminary decision has been made by villagers as to their choice of site (November-December 2004). There will be a series of meetings that include GoL authorities at the village level and the resettlers led by the RMU and with the advice of NTPC technical staff. Discussions will be aimed at reaching agreements on:

- Village locations and new boundaries
- Village composition in terms of village units (*nouay*)

- Village leadership structures (headmen, leaders of *nouay* and other local representatives)
- Village layout according to ethnic groups and clans

It is difficult to predict outcomes of spirit territory realignment and how people will adjust to new territories since much depends on the ritual specialists and events accompanying the movement, especially accidents or natural phenomena that could influence interpretations of spirit preferences. Ritual specialists within a village or mediums through rituals and ceremonies may determine how cosmological changes will be handled – ritual obligations prior to a move or after resettlement. In the case of potential conflict or realignment of territories, it will be the responsibility of the elders in each community (*thao khun*) to meet and decide on an outcome and the necessary rituals or ceremonies. The history of the Nakai Plateau indicates that there are mechanisms and precedents for solving such issues, given the fact that many villages have relocated in the recent past for various reasons.

6.4 HOST VILLAGE

Consultations with the villages of Sop Hia and Nam Nian have resulted in the decision by the affected communities to split the villages. Original feedback indicated that this would occur along ethnic lines, between the indigenous Vietic groups (mostly Ahoé) and the recently arrived Tai groups (over the past 20 years). However, recent consultations indicate that although most Tai groups (Men, Moey, Pao and Bo) prefer to be relocated in Bolikhamxai near Nam Pan, the Vietic groups prefer to split, sending some households to Nam Pan and some for relocation near Thalang (see 14.4.4). A number of options and possible locations for new village sites were discussed with the Tai and Vietic groups, including resettlement on the Nakai Plateau along with the other villages. However, a consensus has emerged for relocation to Khamkeut District in Bolikhamxai Province, whence all Tai households originated.

The planning process can be summarised as follows:

- Consultations at Sop Hia and Nam Nian (1996-2002) – information dissemination and feedback as to various resettlement options but issue not fully resolved regarding ethnic composition of villages
- Location of potential resettlement sites in Khamkeut District identified by GoL as a possible site in 2002
- Technical appraisal of two sites and preliminary plans and budget for best choice (Nam Pan site) by irrigation and livelihood development specialist in June 2003 (see Appendix F)
- Preliminary survey of socio-economic and cultural characteristics (Back to Office Report, NTEC, October 2003).
- Affected villagers site in early 2004 and meetings between leaders and villagers from host village of Ban Nam Pan and resettlers from Sop Hia and Nam Nian
- Detailed consultation on option in June 2004 with confirmation of site selection with Tai villagers from the Nakai Plateau
- Late 2004 follow-up consultations with the goal of achieve village consensus (in this case, ethnic group consensus) about relocation and livelihood options for Tai groups in Sop Hia and Nam Nian
- There will be a full appraisal of impacts on the host village carried out in early 2005 (ongoing at present) as part of the detailed technical planning – this will include an assessment of land usage in the proposed resettlement area, including grazing, NTFP collection, water sources and rotational swidden fields. It is important that individual families in Nam Pan not be directly affected by the loss of land, resource assess or income.
- Formal consensus is required by the leadership and villagers of Nam Pan before resettlement is to commence. This will include agreement on the mitigation measures, primarily the new road and irrigation system for both the new resettlement village and Nam Pan
- Mechanisms for joint management of the irrigation system need to be finalised during the implementation process

Conflict resolution measures and grievance procedures between resettlers and host villagers are similar to those which are outlined for the project as a whole in Chapter 8. Since both groups are from the same ethnic groups or closely related groups of Tai (Tai Men, Tai Moey and Tai Pouak), they shared the same culture, language and value systems. Disputes between neighbouring villages are solved by meetings between the leaders of the villages, both village headmen and their assistants, as well as other formal

leaders, and traditional leaders. If issues of land and resource use cannot be resolved at this level, disputes are usually referred to the District, in this case it will be to the District Resettlement Working Group in Khamkeut.

Consultations were held with the villagers of Nam Pan on February 9, 2005, to confirm resettlement planning and acceptance, including consensus about arriving population, site location, cost-sharing arrangements for irrigation scheme and other joint issues. Feedback from the consultations include:

- Relocation of 58 households from Sophia and Nam Nian will be welcomed by the present inhabitants of Nam Pan
- Keen interest in participating in the establishment of a viable irrigation system
- Request that the newcomers be located together with Nam Pan houses, not in a separate unit or near the future reservoir
- Measures should be introduced to ensure that there are no social or security problems – training and support for leadership
- Preference in retaining paddy lands or obtaining replacement land having equal or better productivity
- Improved infrastructure (roads) and electricity (possibly with subsidies)
- UXO clearance

6.5 HOUSE DESIGNS

Initial house designs have been developed through consultations with the villagers who are to be resettled, incorporating aspects of traditional house designs among the different ethnic groups on the Nakai Plateau. All houses have a number of similar aspects. The home (*beun*) has a private sphere consisting of sleeping quarters, a public sphere for receiving guests and entertaining (veranda) and a production sphere (kitchen for cooking food, washing and growing spices and vegetables). The proposed house design comprises all these elements:

Figure 6-1 shows the first two designs developed after the first round of PCPP. Two basic designs were illustrated showing the two main house styles in the area. The first drawing on the left represents the most common type of house on the Plateau and is similar to the style most often used by Bo and Brou ethnic groups. The second drawing to the right illustrates a house style common among some of the Vietic groups on the Plateau, in particular the Ahoe and Phong of Sop Hia village. The main difference is that the veranda is closed in some traditional Vietic houses. The aim at this stage of the consultations was to discuss modifications and concerns with housing. The illustrations provoked considerable comments and suggestions, including an overwhelming desire for the first design with the open veranda, including among the Ahoe and Phong populations of Sop Hia where such houses were observed (see Section 14.3 above for comments).

Figure 6-2 illustrates the modified house designs as a result of further feedback during the second round of PCPP in April and May 1998. Figure 6-2 shows house designs for single families (up to 6 inhabitants) and extended families (over 7 inhabitants). House designs may be further modified at the time of construction if the household makes reasonable request for modification according to the desire of the different ethnic groups or individual house owners.

Villagers will be provided with a new house and with transportation to move materials from their former houses to be reassembled on the new site if so desired. These new structures conform to traditional house designs by incorporating the following elements: a veranda, a kitchen area, two doors in accordance with kinship taboos, a construction on poles with two ladders (to the kitchen and to the veranda) with an odd number of rungs, and doors which open in a direction other than the west. No house will be smaller than the original dwelling, and the actual size will depend on the number of inhabitants.

Labor resources and time permitting, villagers themselves will construct their own houses under the supervision of trained carpenters. When necessary, additional labor resources will be brought in. Having villagers construct their own home has important social and psychological advantages since by investing

time and energy in establishing themselves on their new plots, they will more easily acquire a sense of belonging to the new sites. Men are traditionally responsible for constructing houses in villages and form a pool of labor whenever new buildings are put up. A similar pool of labor would ensure that all houses are built and that disadvantaged households, that is households with a labor shortage, single mothers, ill or disabled members or few kinship ties, will not be negatively affected by the relocation.

The relocation of houses at the Pilot Village illustrates that the construction of the houses is proceeding well. This involves a common frame but the details such as arrangement of interior space, decorations and carvings and other features have been carried through consultations with the owners. The result is that the first three houses constructed at Nongboua Mai are different in appearance. This shows that the different ethnic characteristics and details in house construction can be reproduced using a culturally sensitive approach and consultations with owners.

Figure 6-1: Sample House Designs 1997

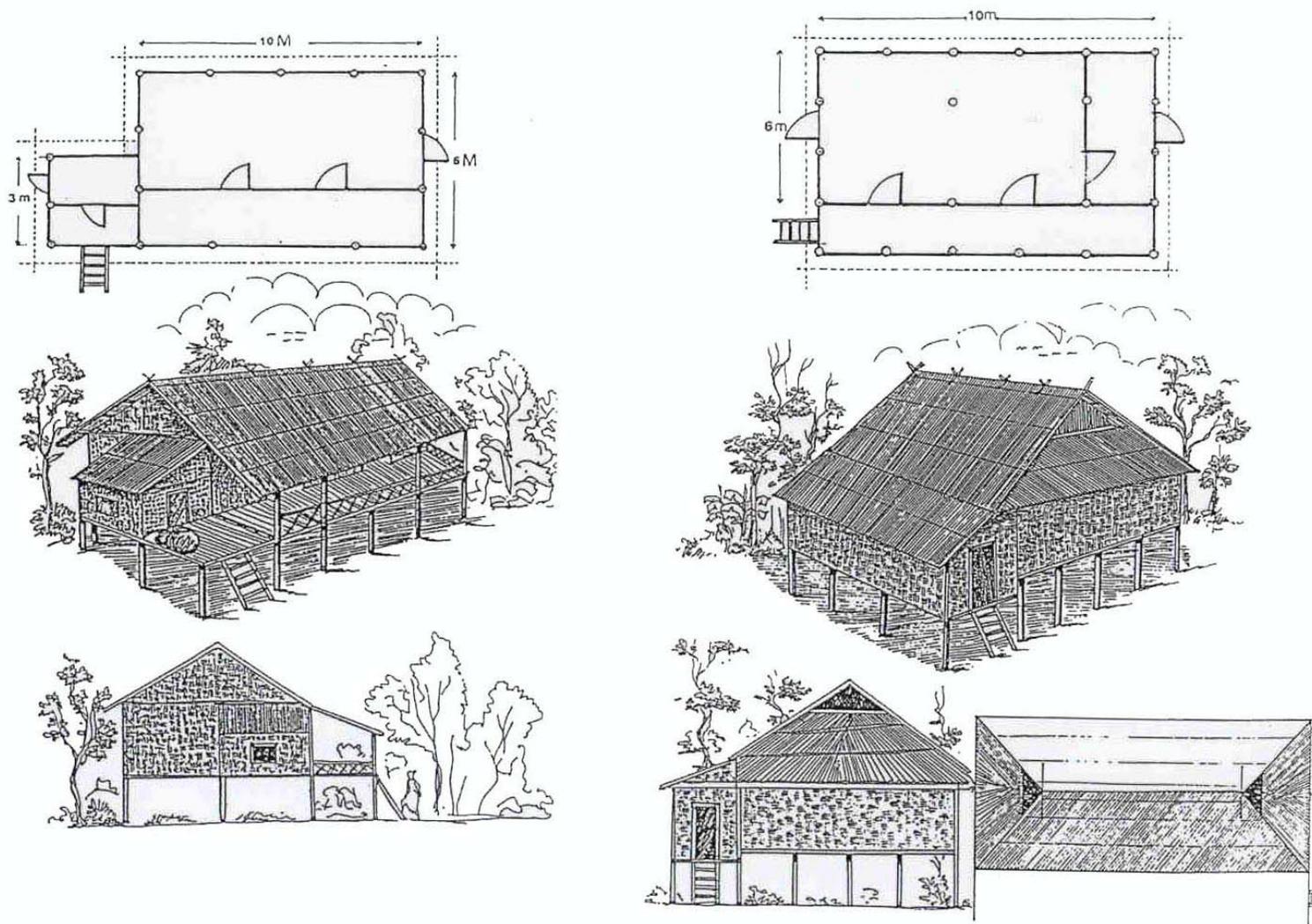
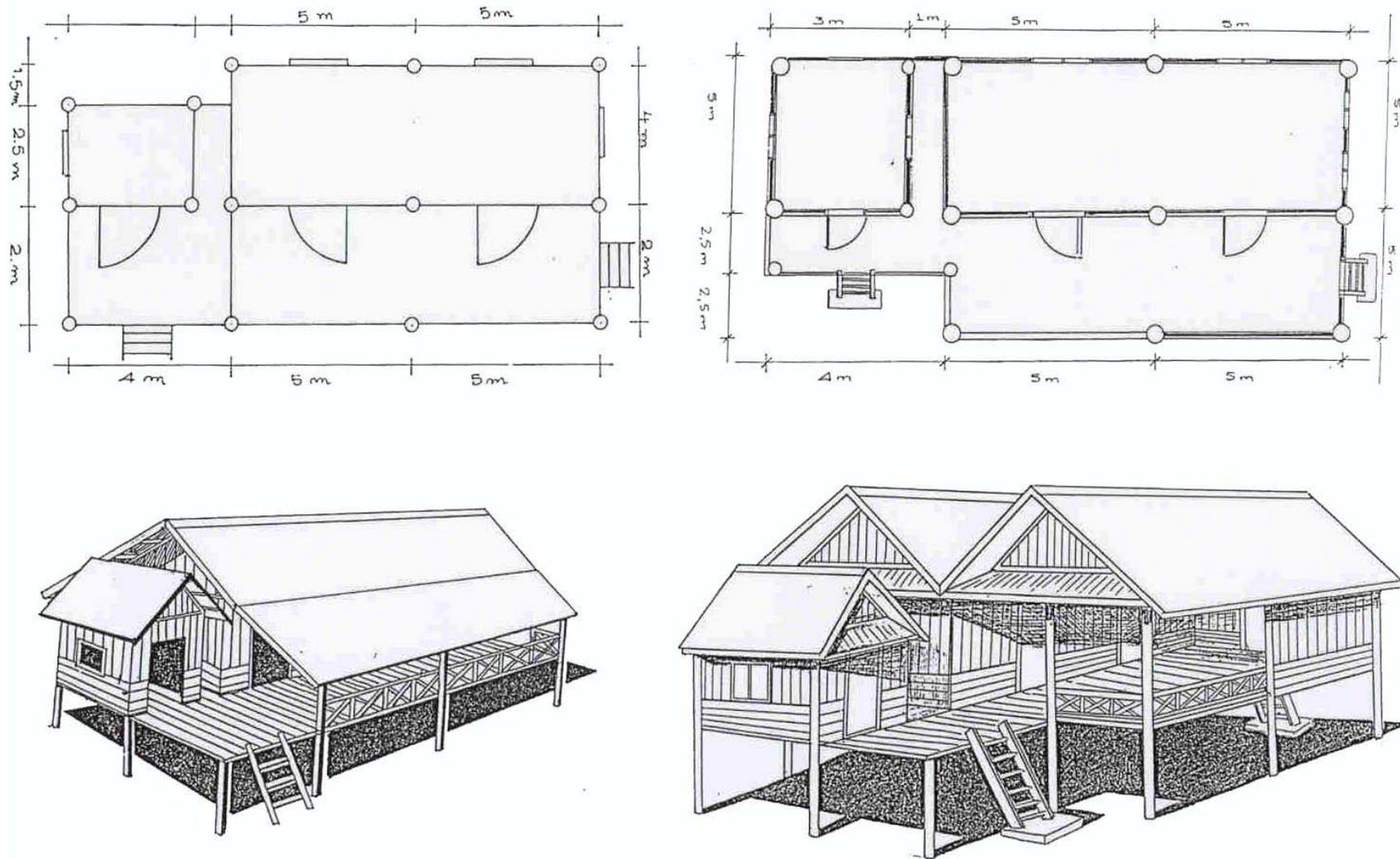


Figure 6-2: Sample House Designs 1998



6.6 LIVELIHOOD OPTIONS

6.6.1 Livelihood Requirements

In keeping with the expressed desire of the affected villagers to remain on the Plateau, studies were undertaken of the natural resources in the area above the Full Supply Level (FSL). However, it must be appreciated that the amount of agricultural land available in the Nakai Plateau is very small. Provincial Authorities have classified 90% of the area as forestland in 1993. The resettlement planning studies identified an area of about 22,000 ha between the western boundary of the proposed reservoir and the edge of the escarpment to identify areas suitable for the establishment of resettlement villages with house plots. The following factors were considered as minimum requirements for locations:

- above El 539.0
- minimum area of 4 ha (for 8 families)
- access to water supply (potable & irrigation)
- access to drawdown zone
- access to roads or other transportation infrastructure
- access to markets
- minimizing distance to new location
- consideration of villages' spiritual boundaries
- adequate returns from irrigated land
- potential for growing rice in selected locations
- social, cultural and ethnic factors taken into account
- potential for exploitation of NTFPs
- potential for community forests

6.6.2 Livelihood Features

A full account of the planning, selection and options for livelihood development are provided in Chapters 12 to 16). Here only an outline of the salient features is provided. The main characteristics of the livelihood development are the following:

- Maximizing opportunities for irrigated cropping with priority initially for rice production due to the fact that rice is the most important crop and emphasized by villagers during consultations
- Intensive vegetable, food, fodder and fruit production on upland plots, replicating the existing practices of home plot gardens in the villages
- Intensified livestock production that aims at introducing fodder production, improved health and extension services
- Commercial forestry on a community basis, including a forestry development plan and forestry dividend fund
- Sustainable exploitation of reservoir fisheries with restricted access for resettlers and ethnic groups in the NBCA

Off-farm employment will be limited but there will be opportunities during the construction period and some employment after construction for skilled workers and in the service sector.

The interim income target for resettlement households, including income in cash and in kind, for year 5 of the resettlement implementation period is the then current Lao Kip rural poverty line amount per person as calculated by the National Statistics Centre, multiplied by the number of persons in the household (this being equivalent to US\$ 800 per average household). The full development village income target is the national average level for the country (this being equivalent to US\$ 1,200 per average household) as calculated by the National Static Centre, multiplied by the number of persons in the household. This final development target ensures is well above the poverty line. Refer to Chapter 16 for further information regarding income targets.

The strength of the livelihood development plan is its flexibility since it consists of a basic package for all households and supplementary options for income depending on specific sites, labour requirements and interests of the households and communities. Table 6-5 indicates the options.

Table 6-5: Resettlement Livelihood Options

Basic Package per Household		Supplementary Enterprise Options	
Farm/House plot: 0.5 ha	(Income \$ 260)	Fisheries	
Rice: 0.15 ha (optional)	(Income \$ 130)	Forestry	
Forestry Dividend	(Income \$ 100 +)	Buffalo Raising:	
Total Income	\$ 590/HH	Off-Farm Employment	

An analysis of the production models and economic forecasts is provided in Chapter 16 (Livelihood Integration and Income Scenarios).

6.6.3 Assessment of Risks

The income estimates of the livelihood package and options are based on an average household size participating in all of the proposed enterprises. It is necessary to review the potential impact of the recommended general livelihood model on the incomes of individual households that may have different human resource, skill endowments or preferences among the different ethnic groups. Based on the socio-economic surveys and the consultation carried out on the Nakai Plateau, a range of possible scenarios have been examined in Chapter 16 of the SDP.

- Households having no male working members and with old or infirm adults will be specifically targeted with income supplements from the forestry resource dividend fund to account for lack of manpower.
- Given the interest in household food security, it is highly unlikely that resettlers will reject the offer of wetland rice, but those opting to do so will not be significantly affected as long as they are able to earn cash income from the other enterprises.
- About 60 percent of the affected villages do not own buffalo and of the remainder only some have two breeding animals. Households without buffalo/cattle or less than 3 are to receive 2 breeders, HHs with 3-5, 1 additional breeders and those with more than will receive none. Households can also compensate the loss of about 9 percent of their income from fisheries, off-farm employment, intensive house plot cultivation and forestry.
- Experience from the Nam Ngum 1 Reservoir shows that after the construction of the dam, fisheries has become a major source of livelihood for nearly 2000 households and there is a ready market for fish both in Lao PDR and in Thailand; thus the number of households not taking advantage of this opportunity will be negligible.
- Commercial forestry is a resource that is being set aside for the community by the GOL as a source of income security for the affected people; it is hoped that this will engender a sense of ownership among the resettlement community, thereby ensuring full participation in this activity.
- Non-farm employment as a source of income has been very conservatively estimated and any household that decides not to engage in this will not be adversely affected.
- The forestry resource in the Resettlement Area is able to compensate for any shortfall in household income from other sources (crops, livestock and fisheries). The allocation of the forestry resource from which the households derive income should therefore take this into account.

6.6.4 Livelihood Development in Relation to Ethnicity

Data from the Care Report (1996) and RMU socio-economic surveys (1999) indicate that all villages have mixed economic systems. It is difficult to examine the differences solely in terms of ethnic groups due to the fact that most villages are composed of at least two or more groups. However, some generalisations can be made from the data available in relation to village characteristics and potential sites and challenges (see Table 6-6).

Some important points and potential challenges for resettlement to consider are listed below. It should be stated, however, that for the most part there are good relationships between all the ethnic groups on the Plateau and there are considerable differences within ethnic groups in terms of livelihoods, skills and experience.

It is necessary to ensure that all ethnic groups are represented on the District Resettlement Working Group based in Nakai Town (Oudomsouk). At present there are only representatives from the Tai Lao majority groups and very limited representation by minorities. Further recruitment of members of the DRWG for Nakai should favour representatives from the Tai Bo, Brou and Vietic ethnic minority communities whenever feasible in order to represent interests of these groups at this level of project planning and implementation. This is significant for dealing with resettlement of parts of Oudomsouk itself as it is for general issues regarding all Plateau villages.

Vietic Groups

Of particular concern are the Vietic groups because of their small numbers, the fact that they are spread out in a number of villages and dominated by other more advanced ethnic groups, and their lack of experience of more modern technologies and knowledge of market economics. These ethnic groups are the most reliant on the natural resources of the Nakai Plateau in terms of hunting, fishing and forest foods. They are less efficient than other ethnic groups in harvesting NTFPs, partly because they, at least until recently, have not been motivated to earn large amounts of cash. This, however, is changing as the overfishing in the Nam Theun at Sop Hia illustrates. A number of mitigation measures will be introduced to deal with these challenges:

- Separation of the dominant Tai groups and the Vietic households in Sop Hia and relocation of the latter to a site south of the reservoir or to another suitable site in the area – this will allow the Vietic to regain control over decision-making processes
- Option for Vietic households in Nam Nian to join the Vietic of Sop Hia at the new site
- Option for Vietic households in Thalang to join this new site if it turns out that there is a willingness to consolidate and if there are signs that the Vietic of Thalang are not deriving the same benefits as the Tai and other ethnic groups at the new site for Thalang village
- Provisions to separate the Vietic groups or at least cluster households together for Nakai Tai and Phonphanpek where there are also small numbers of Ahoe and Salang.
- Livelihood development will emphasise a continuity of NTFPs, fishing and collection of forest foods that these groups are highly reliant on.
- Links to programmes in the NBCA regarding development of NTFPs, medicines and other forest products that could also be cultivated on the Plateau
- Additional assistance for adapting to and adjusting to new production techniques since many Vietic groups have less experience than the other ethnic minorities on the Plateau – this means separate programmes for technical assistance in relation to irrigation, growing cash crops, improved livestock management, literacy and accounting for forestry management and capacity building for village leadership
- Establishing regular visits to demonstration sites for Vietic groups and mutual visits to Vietic resettlement sites and livelihood development schemes to share experiences
- Specific monitoring of small Vietic minorities in Thalang, Nakai Tai and Phonphanpek to ensure that Vietic participate in consultations on a par with the other ethnic groups and partake in decision-making
- Specific monitoring of natural resource usage by Vietic groups and neighbouring villages to ensure that other ethnic groups are not exploit Vietic resources (previous conflicts over resources between Vietic villagers and other ethnic groups residing in Thalang have occurred in the past)

Tai Bo

There is considerable variation in the production systems of the Tai Bo across the Plateau. They range from reliance on NTFPs to wet rice cultivation. Of particular concern, however, are the smaller Bo villages and hamlets along the Nam Theun in the middle of the Plateau: Sop Ma, Sop Phene, Hat Khamphane and Nong Boua. These villages are likely to require additional assistance and monitoring since they have weak leadership, little experience of technology and market forces, and are highly reliant on the forests and fishing. The Tai Bo villages along the road are unlikely to require special assistance for

livelihood development. In some cases, measures to assist Vietic groups mentioned above may be used to enhance benefits for these Tai Bo communities.

Brou

Most Brou households and villages have mixed economies and exhibit a certain flexibility in terms of adaptation to new techniques. Of particular concern are reports of very large herds of buffalo and cattle in some Brou and Bo villages. These herds may exceed the carrying capacity of the proposed resettlement sites and measures to reduce herds to a sustainable level in these Bo and Brou villages will prove a challenge for planners. The current plan is to suggest that most of the herd are capitalised and funds placed in bank accounts. The buffalo raising families would retain up to 10 head, and on gaining experience with (a) the rise and fall of the reservoir, and thus the drawdown zone productivity, and (b) the productivity of fodder programs they would decide whether to reinvest their funds in a larger herd or in another livelihood activity.

Table 6-6: Livelihood Options and Ethnic Minority Concerns

Village	Main Ethnic Groups	Existing Livelihood System	Proposed Site	Proposed Livelihood System	Particular Ethnic Concerns	Further Mitigation
Oudomsouk	Mixed but dominated by Tai Lao groups – Brou and Tai Bo mainly on outskirts	Mixed economy – services, government jobs, shops and agricultural production Income stratification (rural vs. semi-urban)	Near original home sites	for internal immigrants, they have the option to return to their original villages and participate in livelihood programs	Ethnic minorities reside on the outskirts and dependent on agriculture – their concerns may not be represented by administration – likely that more educated and resourceful groups benefit	District Resettlement Working Group to include all ethnic minorities to be relocated
Sop Hia	Mix of Vietic groups and recent Tai immigrants	Swidden cultivation and heavy (unsustainable) reliance on NTFPs and fishing	Vietic families to the plateau, Tai families to Khamkeut	Vietic families can chose any or all of agriculture, livestock, fisheries and/or forestry options. Tai families: gravity irrigated wet season paddy, dry season crops, community forestry.	Separation of Vietic and Tai groups ensures that the former are able to develop socially, economically and culturally within their own village area – considerable assistance is required to ensure Vietic groups adjust. Foresee few problems for Tai groups who are familiar with alternative livelihood techniques	Special training and assistance for Vietic groups to adjust to livelihood options. Extra monitoring of village boundaries and resource use so that this small group is not exploited by others.
Nam Nian	Mostly Tai immigrants	Swidden cultivation – previous reliance on BPKP discontinued – services and shops closed down	Khamkeut	Same as Tai from Sop Hia.	Tai to return to Khamkeut together with the Tai groups in Sop Hia. Area inhabited by other Tai groups and close to original territories.	Potential competition between resettlers and host and neighbouring villages may require additional inputs and monitoring
Thalang	Tai Bo and Tai groups	Swidden cultivation and gathering of NTFPs – previously much market activity but now many stalls closed	13	Mainly reservoir based commercial fisheries. Also agriculture, tourism and transport, forestry.	Vietic households may be less prepared for change than the Tai and other ethnic groups and require additional assistance.	Option for Vietic HHs to join other Vietic from Sop Hia for cultural preservation
Nong Boua Kham	Mixed lowland population with some indigenous Brou and Bo	Originally a State Farm for supplying cattle to the Army but now more like another village in terms of livelihood – income from pensions	7	Mainly reservoir based and agriculture. Also livestock and forestry.	Lao and non-indigenous groups may dominate the Bo and Brou ethnic groups.	Organisation of village in different ethnic groups may be necessary for implementation

Village	Main Ethnic Groups	Existing Livelihood System	Proposed Site	Proposed Livelihood System	Particular Ethnic Concerns	Further Mitigation
Nakai Tai	Predominantly Bo with some Brou, Lao and Vietic	Roadside village with mixed economy based on swidden, some wet rice cultivation, livestock, NTFPs and markets	2	Can chose any or all of agriculture, livestock, fisheries and/or forestry options.	Vietic households may be less prepared for change than the Tai and other ethnic groups and require additional assistance.	Special programmes and monitoring for Vietic ethnic groups through consultations
Nakai Neua	Predominantly Bo with some Brou and Lao	Roadside village with mixed economy based on swidden, some wet rice cultivation, livestock, NTFPs and markets	1	Can choose any or all of agriculture, livestock, fisheries and/or forestry options.	Lao and non-indigenous groups may dominate the Bo and Brou ethnic groups.	Organisation of village in different ethnic groups may be necessary for implementation
Sop Phene	Tai Bo	Swidden and gathering NTFPs with some livestock and fishing	11	Mainly reservoir fisheries and agriculture. Also forestry and trade options.	Dominate Tai Bo village but with little experience of new agricultural techniques or market activities and weak leadership – heavily reliant on forests	Weak leadership may require additional support in order to mobilise social capital for the resettlement
Sop Ma/Hat Khamphan/Keng Gnao	Tai Bo in Sop Ma and Hat Khamphane and Brou in Keng Gao	Swidden with considerable reliance on NTFPs, livestock and fishing	8 or 16	Can choose any or all of agriculture, livestock, fisheries and/or forestry options.	Mixed Bo and Brou hamlets with little experience of new agricultural techniques or market activities and weak leadership – heavily reliant on forests	Consultations with separate ethnic groups will be undertaken if necessary
Nong Boua/Sailom	Mixed Bo and Brou	Swidden with considerable reliance on NTFPs	16	Can choose any or all of agriculture, livestock, fisheries and/or forestry options.	Pilot Village Relocation – village layout based on clan structures. No ethnic problems have arisen during initial resettlement and livelihood restoration.	Consultations with separate ethnic groups will be undertaken if necessary
Phonphanpek	New village with mixed population of Brou, Bo, Lao and Vietic	Mixed economy – swidden, NTFPs and some wage labour. Some houses rented to labourers	Loss of fields only	Can choose any or all of livestock, fisheries and/or forestry options.	Mixed ethnic village – newly arrived Vietic groups most inexperienced with agricultural techniques and will require special assistance.	Contact network between the various Vietic groups on the Plateau to be organised to deal with specific problems
Boua Ma	Brou and Bo	Swidden, livestock, limited wet paddy production and NTFPs	17	Can choose any or all of agriculture, livestock, fisheries and/or forestry options.	Mixed ethnic groups – good relations between Bo and Brou groups – no apparent social tension	No specific mitigation foreseen

Village	Main Ethnic Groups	Existing Livelihood System	Proposed Site	Proposed Livelihood System	Particular Ethnic Concerns	Further Mitigation
Phonsavang	Brou	Swidden, livestock, fishing and NTFPs	18 or 19	Can choose any or all of agriculture, livestock, fisheries and/or forestry options.	Predominantly Brou	No specific mitigation foreseen
Sop On	Bo with some Sek, Brou, Tai and Lao	Swidden, livestock, limited wet paddy production, fishing and NTFPs	19	Can choose any or all of agriculture, livestock, fisheries and/or forestry options.	Predominantly Bo with a few households of Sek and Brou ethnic groups – good relations between groups	No specific mitigation foreseen
Done	Brou	Swidden, considerable livestock (buffalo), limited wet paddy production and NTFPs	21	Livestock important, but also agriculture, fisheries and forestry options.	Predominantly Brou with a few households of Sek and Bo ethnic groups – good relations between groups	Ensure resolution of issues concerning large buffalo herds, mainly through savings and loans groups.
Khone Khen	Brou	Swidden, considerable livestock, and NTFPs	22	Livestock important, but also agriculture, fisheries and forestry options.	Predominantly Brou	No specific mitigation foreseen
Ka Oy	Brou	Swidden, livestock, fishing and NTFPs – high reliance on forests	19, 21 or 22	Agriculture, livestock, fisheries and/or forestry options.	Predominantly Brou and highly reliant on forests	Special assistance for integration into other Brou villages and adjustment to livelihood systems

Small Ethnic Groups within Ethnic Minority Villages

In many villages there are small groups of ethnic minorities, often only a few households in relation to a dominant group, be that Tai Lao or another ethnic minority. In most cases, this is unlikely to be a problem since all of these groups have been coexisting for a long time and intermarriage is common. However, certain measures may have to be taken:

- Monitoring of the progress of the different ethnic groups in mixed villages in order to identify any large differences in terms of adaptability and income;
- If there are considerable differences, separate training and programmes should be considered to offset this imbalance in skills and experience;
- Visits to other resettlement sites of the same ethnic group to share experiences.

The pilot village relocation indicated that villages that are mixed ethnically may relocate in a way to separate the different ethnic groups in terms of village layout since this is often based on kinship and clan relationships that do not cross-cut ethnicity in most cases. If this turns out to be the way most mixed villages are relocated, it will be easy to consider separate arrangements (training, capacity building, technical assistance, site visits, etc.) for the different ethnic groups if so required.

6.7 PLANNED INFRASTRUCTURE INVESTMENTS

There are three main infrastructure investments: improvements of roads, the supply of electricity and water supply (see Chapter 11 of this volume).

6.7.1 Road Construction and Upgrading

The existing road from Ban Oudomsouk to Ban Nam Nian will be submerged under the reservoir. A new road which largely follows the edge of the reservoir for much of its route will be built which will provide road access to villages in potential resettlement sites 1-13 between Ban Oudomsouk and Ban Thalang. In addition, about 30km of village access roads to potential resettlement sites to the south-east of Ban Oudomsouk (sites 14-25). All new villages will have road access as part of the resettlement package.

6.7.2 Electricity Supply

According to the RAP Budget, a 50 KW generator will be supplied per 50 families during the first phase of resettlement and later to act as a backup generator or for other uses by the community. The permanent installation of electricity to the resettled communities will consist of ca. 80 km of main and distribution lines and electric wiring hooking up individual households to the grid. Details of electricity supply will depend on the final section of sites and the locations of houses, both of which will be worked out during consultation with families and community leaders.

6.7.3 Water Supply- Domestic & Irrigation

A reliable water supply is necessary for each of the resettlement communities and is directly linked to the improvement of livelihoods and health situations. All resettlement villages will have access to water supplies for domestic and irrigation use. Potential sources of domestic water for domestic use include gully-stop wells and deep wells. The provision for domestic water will greatly improve the health situation given the high presence in water-borne diseases and parasites reported in the area.

6.8 SERVICE IMPROVEMENTS

6.8.1 Health Sector Impacts

The public health aspects invariably apply to the resettled, settled, or workforce groups. In many situations, these groups will not only live side by side but also will interact and, under certain conditions, live together. The reservoir, both during construction and when completed, is not expected to have an adverse impact on public health within the area of its influence.

Water-Borne Diseases (Malaria)

Water related diseases over which concerns have been raised are malaria, schistosomiasis and opisthorchiasis. These can be controlled provided the correct measures, such as environmental control,

insecticidal application and personal protection among worker and resident communities are in place and functioning in time.

During construction of the Nam Ngum dam more than 25% of the workforce suffered from malaria at any one time. At that time, DDT (Dichloro-diphenyl-trichlorethane) household residual spraying was regularly carried out as well as the mosquito proofing of all buildings where possible and appropriate. Despite this, malaria remained a problem during construction and there was much concern on what the malaria situation would be after the dam was completed. However, following completion of the dam, and its subsequent filling, the mosquito vector population declined and the incidence of malaria dropped to levels where only a few cases of malaria are now diagnosed each year.

The explanation for the above revolves around the elimination of suitable breeding places for the two principal vectors *Anopheles minimus* and *A.maculatus* as the Nam Ngum reservoir reached its final level. This situation has continued to the present. While such an event may, or may not occur in the present Project, the previous experience with these disease vectors is important and may well indicate trends that will be seen elsewhere.

Irrigation channels, when completed, may constitute a source of continued mosquito breeding for *A.maculatus* and *A.minimus*. Another potential problem is that *A.dirus* could increase in numbers following cattle rearing in the area of the reservoir because their flooded hoof-imprints could provide ideal breeding for *A.dirus*. At present this mosquito has not been recorded in the area and its behavior and survival at the altitude of the reservoir, during the cold season, is not known and not considered likely.

Opisthorchiasis

This disease requires a snail as the intermediate host, but can only be transmitted to humans through eating raw fish or fermented fish. Providing fish dishes are cooked, it is considered not to be a potential problem. Raw fish dishes are popular in some of the resident communities and it is possible that members of the workforce will expose themselves to conditions where the disease can be transmitted. However, it will be part of the health program's preventative efforts to inform all communities of appropriate control methods.

Schistosomiasis

Schistosomiasis is absent from the project area and is not expected to be a problem with completion of the reservoir or the irrigation channels. Its nearest focus is Khong Island, Khong District in the southern reaches of the Mekong in Champassak Province. Following the finding of small numbers of the vector snail at Mahaxai the possibility of schistosomiasis in the project area has raised. It is considered highly unlikely that *Schistosoma mekongi* would be able to establish itself, from its nearest base in Khong Island. But in any case the disease at Khong Island has been under considerable control program pressure since 1989 and prevalence in the population of about 10,000 persons is now less than one per cent, the majority of those infected being aged between 5-14 years of age. Routine monitoring will identify the problem in the unlikely event that it appears.

Human Immune Deficiency Virus (HIV) and Other STDs

HIV is an important potential health problem which both immigrant workers and the existing communities face and which the Project must be well prepared for. Other Sexually Transmitted Diseases (STDs) are present in the population but are more easily identified and are treatable.

Transmission of HIV is either by unprotected sexual contact, contact with contaminated blood or exchange of body fluids or through the use of shared hypodermic needles among infected drug addicts. Every effort will be made to publicize these facts to both the workforce and to the resident communities. Testing construction workers for HIV due to the prevalence of the virus in Southeast Asia is being considered.

6.8.2 Sanitation and Health Program

The following components form the basis of the health program:

- Simple pit latrines protected by an S-shaped water trap are recommended for resettled households. The manufacture of S-shaped latrine slabs is promoted by GOL and their procedures and pit design will be followed.
- The provision of a domestic water supply to all villages has been previously dealt with, but the avoidance of creating mosquito-breeding sites near to any water pumps will be assured through construction of concrete or cement covered aprons around any pump sites.
- Malaria control and the control of the dengue fever mosquito will be part of the on-going disease control program as proposed by the GOL and, in Nakai and Gnommalat Districts, the joint control program with the European Union.
- The local population will potentially be impacted by the health of the workforce if they are in the same area. Worker health is of paramount concern to construction contractors and an important criterion to be met when campsites are selected. Good siting for the camp with the availability of natural drainage will be an important criterion. Details of the health care practices that the construction contractors will be committed to implementing may be found in the EAMP.
- Anti-malaria measures following accepted practice will be instituted at campsites and facilities established for the early diagnosis and treatment of patients. The distribution of 300 treated mosquito nets in the 1998 round of PCPP work was the first step in improving the health of the local communities. Communities, once settled, will be better served through the existing health services infrastructure which will be strengthened at the clinic and Village Health Volunteers (VHV) levels through focal training and ensuring adequate supplies of drugs and other inputs from RMU and local NGOs.
- Establishment of nine clinics, staff housing for clinics and medical supplies and equipment (ca. US\$ 1,000 per clinic) as well as a training program for health personnel (see Chapter 19).
- In collaboration with the respective GOL health institute and the Department of Health, Khammouane Province, RMU will assist communities in the implementation of approved healthcare programs in the Resettlement Area. It is beneficial for all concerned that the villagers overall health status improves and the burden of disease in the population are reduced so as to facilitate the relocation and participation in learning the new skills of the livelihood model. This will include provision of information and education to the workforce on prevention of diseases, including, malaria, opisthorchiasis, diarrhoea and HIV/AIDS.

6.8.3 Indigenous Health Practices

The inundation of the Nakai Plateau will result in the loss of areas that are presently used to gather herbs, roots and other items used in indigenous health remedies. From preliminary investigations one can conclude that there will be no loss of any plant species that is endemic to the Plateau alone. All ingredients used in traditional medicine are also found in areas of the Nakai Plateau that will not be inundated or in surrounding areas of higher biodiversity, such as the Nakai-Nam Theun NBCA where resettlers will continue to have access.

The general trend in the villages is towards adopting more and more aspects of modern medicine and reliance on drugs available from Village Health Volunteers, local shops and clinics and treatment at the Nakai hospital or other larger establishments in the region. However, for minor complaints and treatment of psychosomatic symptoms, that involve a combination of material and spiritual cures, traditional methods are still widely employed. It should be mentioned that even in urban areas of the country, traditional practices continue to exist, partly because modern scientific medicine tends to cure physically only and lacks a social and spiritual dimension.

The following measure will be carried out in relation to indigenous health practices:

- Detailed study on traditional health practices and identification of ingredients by the Traditional Medicine Research Centre and International Consultant to be completed by November 2004
- Establish links with studies of ethno-botany being undertaken in the NBCA as part of the SEMFOP-1
- Identification of rare species or commercially interesting species that could be considered for a herbarium on the Plateau – possibly as part of an existing demonstration farm

- Recruitment of traditional health specialists (*mô yaa*, *mô maun*, *mô pao* and *mô tamyaë* – priests, spirit doctors, healers and midwives) when feasible as local health workers so that indigenous knowledge may be transferred into the context of a new setting
- Careful monitoring of harvesting of species used in indigenous medicine and health practices that may change as a result of resettlement (possible rapid shift from traditional to modern medicine)

6.8.4 Education, Extension and Training

Education interventions cover three main areas: establishment of school buildings, literacy and extension education and training for livelihood implementation, and recruitment of new teachers.

Chapter 19 states that there will be approximately 17 schools (72 rooms) established in the Resettlement Area (one per community) with supplies and equipment (US\$ 500 per room) as well as accommodation for teachers.

Given the low rates of literacy on the Plateau, adult education and literacy programs will form a key element in community development. The consultation sessions with villages always emphasized the importance of education and literacy. GoL and NGOs working in Lao PDR for many years have experience setting up and running adult literacy programs in rural areas. These programs will be up and running before the actual resettlement in order to acquire the maximum benefits. It would also give villagers a positive impression that measures are being taken to ensure a better future for them.

Extension education aims to persuade people to make improvements to their livelihood enterprises. It is a gradual process that first creates awareness and interest, provides opportunities for the target population to try out the new ideas, and finally ensures that the necessary support services are available for them to adopt the concepts. In the new settlements, farmers will be required to change from an extensive to an intensive type of farming. Besides, they must learn new skills to practice irrigation, fodder crop production, forestry management and optimum utilization of reservoir fisheries. They should also be assisted to strengthen their capacity to undertake community development work. NTEC has already established a demonstration farm in Theun Duane and a plant supply nursery at Ban Nakai Neua.

Based on the proposed household enterprises, the extension education and training program will focus on the following:

- Forestry management: establishment of committees, awareness of rights and income sharing mechanisms, skills' improvements in silviculture and a community forest management plan (cf. FIPC 2001)
- Fisheries management: improved fishing techniques, restocking, awareness of new techniques, handling and preservation, management and marketing, and the establishment of a fisheries development plan
- Wetland rice farming: preparation of land, training in wetland rice agricultural techniques and water management and assistance for storage and pest management
- Upland irrigation techniques: improved terracing and land use practices and training in equipment maintenance and irrigation techniques
- Vegetable and fruit cultivation: training in land preparation, cultivation techniques, fertilizer application, cropping practices and marketing
- Livestock management: training in health management, improved feeding techniques, housing requirements, composting, grazing practices and community management of common grazing areas in the drawdown or under selected forest cover
- Nutrition and health: health and nutrition awareness programs as part of the Sanitation and Health Program (see Section 15.6.2).

- **Community development:** Focus on skills development and income generation activities as well as support for community organizations with links to all of the above training programs and livelihood interventions

6.9 IMPROVEMENTS FOR WOMEN

In the case of the Nakai Plateau and the lowland areas, women already play a significant role in the partially monetarized economy, primarily in the selling of agricultural and forest products in local markets. At the same time women have very little political power and do not have the same access to resources that men have. The question may be posed: how will the NT2 Project impact women's economic position in these societies? And, in addition, how will the socially and culturally productive activities in the household such as caring for children, the elderly and the sick, providing food for the family and the passing on of cultural values, be affected by the Project?

An Asian Development Bank Report, entitled *Handbook for incorporation of gender analysis for women in development in bank operations*, (ADB 1994) identifies two complementary approaches to women in development: the equity approach, which aims at improving women's decision-making powers, and the anti-poverty approach which concerns special programs for women with the goal of improving their socio-economic conditions. Both approaches empower women by giving them more control over their own time and resources. There are a number of aspects from the Nam Theun 2 Project which could directly affect women in a positive manner:

- **Improved labour opportunities in the new villages.** Most of the work, such as caring for vegetable gardens and plots of cash crops in the vicinity of the house, has been the traditional domain of women. With improved agricultural methods and better yields, there should be more food for the family grown near the household (money saved) and possibly surpluses which can be sold in local markets (money earned).
- **Labour opportunities on the plantations:** Caring for seedlings and weeding in the proposed new plantations and in commercial plantations would provide women with another source of income. In the resettled BPKP village in Ban Oudomsouk, Ban Jat San, it is mostly women who do the work on the nearby plantation. This income would go directly into the household coffers.
- **Improved Health Facilities:** The availability of medical facilities would give women access to medicine and proper advice on a range of topics which affect their lives. Women are responsible for the sick, the infirm and elderly as well as the care of young children. Improved medical facilities in the form of a dispensary run by a trained paramedic and regular visits by a doctor would be an important improvement and would save money and time. This would be in addition to the obvious improvements in pre-natal and post-natal care.
- **Improved Education Facilities:** The introduction of schools manned by local teachers would allow children between the ages of 5 and 12 to attend. This would have the result of relieving mothers of some of the child-care burden and allow them more time to work in the gardens or in the plantations.
- **Availability of water:** The provision of domestic water in the new village sites would also have a positive impact on the lives of women. It is women and girls who are mostly responsible for fetching water, washing clothes, preparing food and cleaning the house, all of which require water.
- **New Roads:** Improved transportation is beneficial to both men and women but has a special importance for women since they make most of the trips to the markets to purchase food and supplies or to sell agricultural and forest products. Again this would improve women's earning power, most of which goes directly to caring for the needs of the family.

These benefits would allow women to earn more money by means of reducing the time spent within the confines of the domestic sphere with its reliance on men for cash income. Money earned by women goes for the most part to improving the lot of the family, such that development for women means development for the next generation as well.

The proposed livelihood model indicates that the division of labor will continue along the lines of Table 13-18. It is unrealistic to imagine that women from the villages will have the same opportunities to earn wages as the men may have because of the responsibilities at home. Providing better opportunities to earn money by selling produce from the household vegetable gardens and livestock will enhance women's earning power. Much of the work in the community forest could also be carried out by women.

In the villages, most women who are married and over the age of twenty are either pregnant, nursing or with small children. This has naturally reduced the time women have had in the fields and outside the village proper. There were only a few women in the better-off villages along the road who have access to birth control. Improving the position of women is connected to health issues discussed above.

6.10 PILOT VILLAGE

The decision to move a village in advance of the main resettlement was taken in 1999 and work commenced in 2000 in the three hamlets of Ban Sailom, Ban Nongboua and Ban Pamanton that constitute a single village administrative unit referred to as Ban Nongboua. The goals are to provide the RMU and NTEC planners with an opportunity to test assumptions, verify predictions and work out solutions to problems in advance of the relocation. The proposed Pilot Village would be carefully planned and implemented and will possibly give planners insights into how villagers adjust to the new site and aspects of the livelihood model. Monitoring labor resources and institutional capacity will be very important aspects, continuing the work already completed on monitoring the three families on the demonstration farm at Theun Duane. An update on the progress of the Pilot Village status is provided in Appendix C.

In terms of ethnic relations, there have been no serious conflicts or misunderstandings as of yet. In fact, the resettlers have insisted that the village layout be based on clans which group the different ethnic groups into two sections of Bo and one section of Brou. This pilot move, therefore, has shown that ethnicity is important for village layout and that the consultations are 'culturally sensitive' enough to allow this to be expressed and the approach to resettlement flexible enough to allow modifications to take this into account.

The same can be said of the house designs. The new houses are all different in terms of details, allowing the different ethnic groups to retain their differences in artistic and architectural expression.

6.11 MEASURES TO PROTECT CULTURAL HERITAGE

Recovery and relocation of the few moveable archaeological and historical artefacts from communities on the Nakai Plateau (e.g. Buddha images) will be completed in conjunction with provincial and district Culture and Information Offices. Consultations and negotiations will be carried out to determine culturally acceptable relocation to nominated sites. The historical artefacts near Ban Nakai Tai will not have to be moved but can be integrated into the new village in the immediate vicinity.

According to villagers in consultation meetings, it might not be necessary to relocate village cemeteries, on the condition that appeasement rituals for relocation of village spirits (*phi muang*) are held. The villagers have indicated that all items that may be regarded as 'cultural property' will be easily incorporated in the move with their other belongings.

Appropriate protective and/or salvage measures will be adopted if any archaeologically significant properties are uncovered during the construction activities. If properties are recovered it will be the responsibility of the provincial and district Culture and Information Offices. If items are considered as having significant cultural value, it may be necessary to seek advice from the national Culture and Information Offices. Members from these offices have been involved in the socio-cultural surveys and public consultation programs in 1997 and 1998 and therefore have a good knowledge of the culture and history of the project area.

Earth Systems Lao (June 2004) has conducted a detailed survey of Physical Cultural Resources (see EAMP). 23 spirit sites, four potentially historical sites, eight 'Folk Buddhist' temples and 32 cemeteries or

burial areas have been identified as being impacted by the Project. Recommendations for mitigation, including relocation, salvaging and conducting appeasement ceremonies will be carried, and in some cases, such as in Sop Hia , Nakai and Phonphanpek have already been carried out (see Chapter 4 in Volume 4).

6.12 OVERVIEW OF RISKS TO VULNERABLE ETHNIC MINORITIES AND MITIGATION MEASURES ON THE NAKAI PLATEAU

Table 6-7 provides an overview of all the possible impacts, risks and mitigation that will be carried out in order to ensure that vulnerable ethnic minorities will not become marginalised but rather become project beneficiaries. By vulnerable ethnic minorities, one refers only to the Veitic groups presently located at Sop Hia and a few households in Nam Nian, Thalang, Nakai Tai and Phonphanpek and the Tai Bo and Brou residing in smaller villages in the centre of the Nakai Plateau (Sop Phene, Hat Khamphane, Sop Ma and Keng Gnao). The larger Brou and mixed villages to the southwest and villages along the road are not considered ‘vulnerable’ for this analysis.

Table 6-7: Vulnerable Ethnic Minorities, Risks and Mitigation on the Nakai Plateau

Impact/Activity	Risks	Proposed Mitigation	Potential Residual Impact	Further Possible Mitigation
Relocation into new houses	Families may have problems moving into houses that are unfamiliar and different	House designs based on extensive consultations with ethnic groups and built with household participation as labourers – detailed decided households	New designs may not be suitable to all groups or households – houses not properly maintained or cleaned	Modifications to existing structures – EMs to make modifications under the supervision of a qualified carpenter or technician
Change of livelihood – more intensive agricultural systems and less reliance on forests for NTFPs	Introduction of new livelihood aspects and modification of existing systems will require considerable skills training and support, especially during transition. There is always a risk that some groups will return to traditional ways.	Livelihood options build on existing livelihoods as much as possible Considerable support, training, supervision and monitoring during transition	Poor performance in the various livelihood options due to a lack of understanding of new technology and methods. Possibly returning to post-resettlement livelihood activities such as swidden and livestock grazing in NBCA.	Additional training and options for livelihood development – specific training for communities, including those of different Ethnic Minorities Increased monitoring of implementing agencies and supplementary training and ethnic sensitivity to local needs (on-the-job training by national and international experts)
Participatory decision-making by affected families in the consultation process	Decisions may be made without proper consultation and without prioritising the needs, concerns and aspirations of the affected households and communities.	The consultations process has made efforts to include villagers' concerns and had many meetings and discussions with affected parties. Suggestions have been incorporated into detailed planning and relocation will be undertaken in a culturally sensitive manner.	Lack of participation in consultation process as part of the implementation of livelihood improvement measures. Smaller ethnic minorities and vulnerable communities may be reluctant or uncertain about how to participate fully in the process.	More sensitivity to local languages and local traditions – training and support for Village Facilitators Increased monitoring of implementing agencies and supplementary training and ethnic sensitivity to local needs (on-the-job training by national and international experts)
Improved schools	Levels of literacy are low on the Nakai Plateau due to schools not functioning and teacher absenteeism. Literacy is an asset when relocating and learning new livelihoods as well as becoming more economically integrated. There is a risk that illiterate groups will become disadvantaged.	Literacy programmes for all villagers and new schools as well as support in the form of materials and equipment. Local teachers or teacher assistants from EM groups to be recruited whenever feasible.	Lack of school attendance, high drop-out rates and poor performance of EMs in relation to other groups. EM adults not attending adult literacy classes	Careful monitoring of school performance, teacher performance and consultations with parents and students in order to identify problems. Additional measures could be special training in the Lao language, special tutoring by bilingual teachers or financial support for uniforms and equipment. Review and continue adult literacy programme for EM communities.
Improved health services	Poor health facilities and high mortality rates are characteristic of the Nakai Plateau. Conditions could continue to deteriorate during resettlement and hinder the rehabilitation process. Influx of workers and camps also health risk.	The PHAP provides support in a number of areas for all groups. In addition, there will be health centres at resettlement sites as well as support for equipment and training. Special programmes for preventive health in relation to project construction impacts.	Higher than average health problems, higher mortality and morbidity rates for EMs during or after the relocation.	Increase in health initiatives and measures to counter possible health problems – special consultations and visits by health specialists to identify problems and suggest mitigation measures specific to these communities if not already being carried out by the Project.

Impact/Activity	Risks	Proposed Mitigation	Potential Residual Impact	Further Possible Mitigation
Changing use of natural resources (restriction on access)	Unsustainable harvesting of NTFPs in the areas surrounding the resettlement zone and continued harvesting in the NBCA	Continued gathering of NTFPs in resettlement areas and along the northern shore of the reservoir but at a reduced scale. Research into potential markets and experiments at domestication of certain NTFPs for sale.	An over-reliance on NTFPs could lead to a further reduction in surrounding forests and potential conflict based on old village boundaries	Close monitoring of NTFP harvesting and awareness programmes on sustainability of this resource. Increase domestication of selected products and introduce them into villages that are harvesting NTFPs with close supervision. More attention can also be given to successful livelihood interventions to increase income during transition and afterwards.
Exploitation of vulnerable groups by other ethnic groups living in the same village or nearby	More established, better educated and more resourceful groups on the Plateau and those in Nakai or camp followers may take advantage of the changing situation which they are likely to understand better. This may include hoarding of goods, controlling markets, obtaining land and rights to resources and other aspects of a rapidly changing socio-economic system.	Each household will receive the same amount of land and housing in proportion to its size and resources with smaller. Monitoring of progress, including livelihood development and income levels and a participatory approach aim to minimise marginalisation of vulnerable groups.	Exploitation of vulnerable groups by other ethnic groups living in the same village or nearby. Lack of equity in the distribution of goods within the village with certain influential individuals and families monopolising decision-making and resources.	Consideration of relocation of Vietic or other vulnerable groups into a separate administrative village units with clearly demarked village boundaries and rights to resources. Increase monitoring of internal village administration and decision-making processes. Additional training and skills development for smaller and vulnerable groups.

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