

VOLUME 2 – CHAPTER 4

NAKAI PLATEAU EMDP BASELINE DATA

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4 NAKAI PLATEAU EMDP BASELINE DATA

4.1 METHODOLOGIES

The following methods of data collection were employed at various stages in the planning for resettlement of ethnic minorities on the Nakai Plateau:

Household surveys of economic assets were carried out first by the LWU in 1995 and again during the Notification, Registration and Socio-Economic Sample Survey by the RMU in 1998. These surveys list the assets and the main socio-economic features of the residents of the Nakai Plateau. The data was collected by interviewing household members on an individual basis. Rapid Rural Appraisal (RRA) techniques were used by CARE (1996). Further surveys were carried out in 2003 for additional data and quality control of existing data.

Census of all entitled households on the Nakai Plateau in October 1998 (cf. Appendix A).

In-depth Interviews of individuals and families were carried out on several occasions (CARE 1996, NTEC (Sparkes) 1997, 1998 and intermittently from 2002-2004) in order to obtain additional information relating to individual household economics, social organization, cultural practices, gender relations and resource use.

Discussions with local leaders were carried out on several occasions throughout the consultation process and during all surveys in order to update statistics on village population, migration patterns and relationships between traditional and formal positions of power within the villages.

Discussion with ritual practitioners were carried out (NTEC (Sparkes) 1997, 1998 and 2002-2004) in order to assess cultural practices, rituals relating to relocation, territorial spirits and religious beliefs that could affect resettlement.

Participant Observation was conducted in all villages by survey teams in 1997 and 1998 that involved staying in villages for several days and nights in order to observe firsthand village life and routines and to establish trust and affirm conclusions of the quantitative surveys. Informal discussions were held with many villagers in order to gain insights into aspirations and potential challenges of the resettlement plan. Survey teams consisted of government officials from the RMU, LWU and Institute for Cultural Research, Ministry of Information and Culture as well as consultant anthropologists. Shorter field visits were carried out by various consultants from 2002 to 2003.

Participatory Rural Appraisal Techniques were used in 1997 and 1998 as part of the gender-sensitive consultation process. This involved land use mapping, designing ‘dream villages’, prioritizing livelihood options, village layout and house designs. Groups of men and women discussed various aspects of the draft resettlement plans and gave feedback (NTEC (Sparkes) 1998).

All these various types of data were co-related, checked and fed into the resettlement planning process. These methods fulfill the consultation and planning criteria with regard to the taking into consideration the cultural and socio-economic needs of the ethnic minorities on the Nakai Plateau as outlined in OD 4.20.

4.2 SOCIO-ECONOMIC STATUS

Two major socio-economic surveys have been undertaken on the Nakai Plateau. The first one was by the CARE team in 1996 (including a revision of the LWU’s work from 1995) and the Notification and Registration Survey in late 1998 (data compiled in 1999). Both these surveys provide an overview of all economic and livelihood activities that were later analyzed by various experts and integrated into resettlement planning.

4.2.1 Income Sources

Given the difficulties of obtaining reliable data concerning household incomes, the following table is indicative only of the average household income for the Plateau and reveals the importance of agriculture

and NTFPs in generating cash income. Although there is a fourfold increase in income in kip due to inflation, however, this translates in fact into a marginal decrease in terms of dollars.

Table 4-1: Cash and Imputed Household Income in Reservoir Households

| Activities | Income in 1996 | % in 1996 | Income in 1998 | % in 1998 |
|--------------------------------|----------------|------------|------------------|------------|
| Agriculture and livestock | 83,000 | 18 | 411,951 | 22 |
| Wildlife | 18,000 | 4 | 8,803 | 0 |
| NTFPs | 97,000 | 21 | 99,257 | 5 |
| Fishing | 23,000 | 5 | 84,926 | 4 |
| Wages | 36,000 | 8 | 203,947 | 11 |
| Jewellery and Handicrafts | N.A. | | 29,571 | 2 |
| A. Total cash income | 257,000 | 56 | 828,454 | 44 |
| Rice production | 140,000 | 30 | 541,813 | 29 |
| Rice for work/donations | N.A. | | 80,998 | 4 |
| Wildlife | 31,000 | 7 | 34,050 | 2 |
| NTFPs | N.A. | | 19,902 | 1 |
| Fishing | 34,000 | 7 | 106,753 | 6 |
| Agriculture | N.A. | | 223,165 | 12 |
| Livestock | N.A. | | 32,020 | 2 |
| Handicrafts | N.A. | | 1,705 | 0 |
| B. Total Imputed Income | 205,000 | 44 | 1,040,406 | 56 |
| Total income (A+B) | 462,000 | 100 | 1,868,860 | 100 |

The total income of 462,000 kip was equivalent to USD \$462 in 1996.

The total income of 1,868,860 kip was equivalent to USD \$449 in 1998.

The methodology in the second study was more thorough and included several items not taken into account in the first survey, such as rice for work, agricultural production and livestock as part of imputed income. In addition, there has been inflation and a devaluing of the Kip in comparison to the US \$ so that there is a decrease in terms of US \$ from 462 to 449.

Plateau communities have traditionally had a mixed economy consisting of cultivating rice and food crops, fishing, raising livestock, hunting for meat and gathering NTFPs, all primarily for household use. In recent years, increases in population, problems with shortened swidden cycles, and exposure to cash commodities, have spawned more intensive and extensive exploitation of the forest for its marketable products. The shift from an almost entirely subsistence economy to a somewhat more commercial one is being promoted by migrants. These newcomers engage either in government sponsored logging, or in search of other economic benefits such as trading or market stalls. These people generate a market for items such as vegetables, meat and forest products.

4.2.2 Income in Relation to Ethnicity

The Care Report (1996: 22) examined income in relation to ethnic groups and length of habitation. Table 4-2 shows that the length of habitation is approximately the reverse of social rank and average household income. The Vietic groups, it should be pointed out, are living in villages together with Tai, Lao and Brou inhabitants in Sop Hia and Nakai Tai and this could affect the ranking. The Tai, the most recent arrivals are clearly ranked first and this is due to the fact that many are more integrated into the mainstream economy and have better technology and skills. A number of Tai have been employed by BPKP and dominate the small stalls along Route 8B. Tai culture and language are also similar to lowland Lao. The Brou and Bo have considerably lower household incomes and, on average, are not involved in market activities or off-farm employment.

Table 4-2: Ethnicity and Household Income

| Social Rank | Average HH Income | Length of Habitation |
|-------------|-------------------|----------------------|
| 1. Tai/Sek | 359,962 Kip | 1. Vietic |
| 2. Vietic | 229,127 Kip | 2. Bo |
| 3. Brou | 212,137 Kip | 3. Brou |
| 4. Bo | 173,264 Kip | 4. Tai/Sek |

In addition to ethnicity, the types of villages in terms of location, access to markets and historical development determine to a large extent the standard of living. The further villages are from the road or District Capital, the poorer they tend to be. One can divide the villages roughly into three groups, and these groups correspond to a certain degree with ethnicity: roadside villages (relatively large number of Lao or Tai), villages to the south-east of the Plateau (predominately Brou) and the poor villages at the centre and northern parts of the Plateau (predominately Bo) (cf. Sparkes 1998).

4.2.3 A Diminishing Resource Base

Present conditions on the Plateau may be characterized as having a "diminishing resource base". The majority of time and energy goes into the cultivation of swidden rice, the staple food. Swidden, or upland rice cultivation, can only be successful in a large area of sparse population. The present population has been expanding over the last 10 years at a rate higher than the Lao average (CARE 1996: 30). As a result the fallow period has been shortened to meet the demand, subsequently reducing the harvests and the quality of the already poor soils. For good harvests a swidden cycle of 10-12 years of fallow is required given the rate of regrowth and soils.

Traditional sources of wealth are buffalo and Non-Timber Forest Products (NTFPs), which are either bartered or sold for food and consumer goods in Ban Oudomsouk, Thakhek or further afield. Large areas previously used for grazing animals and gathering NTFPs have been damaged by commercial logging, and these areas have still not fully regenerated after the halt of logging activities on the Plateau. Concurrent with this destruction of the natural environment, is an increase in demand for consumer goods and a shift from a primarily subsistence economy to a more market-oriented economy. Animals and forest products are now sold in order to acquire consumer goods imported from Thailand, Vietnam and China, which are on sale in local markets. This in turn has put more pressure on an already diminishing resource base.

The majority of cultivation takes place within the village area but villagers travel afar to collect NTFPs and to find suitable grazing areas for their buffalo, that is into other villages' traditional territories and the Nakai-Nam Theun NBCA. Verbal permission was all that was required in the past. For a small percentage (5-10%) villagers can take as many forest products from other areas as needed. There are, however, indications that the severe floods of 1996 and subsequent years have created great pressure on resources. There was one reported case from Ban Ka Oy of goods being seized by village authorities in 1997 because a villager from the neighboring Ban Sop On had not sought permission before gathering damar resin (*kisii*). When various informants were asked about this issue there seemed to be little consensus about whether one should or should not seek permission from village authorities regarding quotas. They all claimed, however, that this was the first case of goods being seized, and this could indicate that it is becoming difficult to acquire enough forest products to exchange for rice.

The only flood comparable with the disaster of 1996 was the even higher flood of 1959, which were also of a longer duration. That time is still vivid in the memories of many elderly folk on the Plateau. Upon being questioned about the years following the 1959 flood, they stated that it took about three years to recover to levels comparable to pre-1959 production. This was when buffalo herds¹ were larger, forest products more available and demands for purchased goods very low. It is unlikely that a stable utilization of resources has been re-established after the floods of 1996. Interviews with villagers in 2002 and 2003

¹ Many villagers claimed that buffalo herds were significantly higher before the outbreak of the Second Indochina War and that animals were shot and slaughtered by both sides during the fighting in order to supply food. There are no statistics on this and some of the CARE Report (1996) material seems to indicate a recent increase in numbers. What interviews with villagers did reveal, however, is that there is a significant difference in numbers owned by each individual household. Many villagers in the Tai Bo villages in the centre of the Plateau, claimed they had none either because of disease or because they had to sell their buffaloes off to buy rice.

indicated that NTFPs were only available in large quantities in the NBCA and involved camping out for several weeks at a time to meet quota already agreed upon between village leaders and middlemen.

A more recent development recorded during a brief field visit in April 2002 is the effects of the cessation of logging on the Nakai Plateau and in the Nakai-Nam Theun NBCA. Previously the logging companies with their numerous laborers, drivers and supervisors provided a market for local food and services along the roadside villages of Ban Oudomsouk, Nakai Tai, Nakai Neua, Thalang and Nam Nian. Evidence that the logging has stopped completely on the Plateau is the numerous stalls, restaurants and guesthouses that have been boarded up or dismantled. Some of the people who had migrated to the Nakai Plateau during this height of timber extraction have left, accounting for many of the households that have left the area. Although no systematic survey has been conducted there must have been income losses for many families who had invested in small businesses at that time.

4.2.4 Agricultural Production

Agricultural production on the Plateau is currently based upon rain fed rice cultivation and small-scale vegetable gardens. Soil fertility, labor availability, access to a reliable water supply, draught and animal supply are all factors contributing to yield. Average yields in the area are generally in the range of 0.8 tonne per hectare for upland and 1.5 to 2.0 tonnes per hectare for paddy rice. Paddy production is restricted by the availability of fertile non-flooded flat land. With the aid of mechanical power, or access to a reliable water supply for irrigation, maximum land use could be expanded beyond the present average area of cultivation, which is probably less than one hectare per family. The size of family land-holdings varies from 0.4 ha to 2.4 ha.

Vegetables are mainly grown on fields in proximity to the homestead on garden plots directly associated with the dwellings or along nearby riverbanks and may include cabbage, cucumbers, tomatoes, lettuce, beans and pumpkin among others. Tobacco is sometimes grown in these gardens, mostly for domestic consumption.

With the exception of Oudomsouk itself, the vast majority of the population is engaged in agricultural production. The following diagram indicates the most important activities during the year.

Figure 4-1: The Annual Agricultural Cycle

| Activity | J | F | M | A | M | J | J | A | S | O | N | D |
|-------------------|------------|----------|---|-----------|-----------|----------------------|---|---------|---|------------|----------|---|
| Swidden Rice | | Clearing | | Burning | | Planting | | Weeding | | Harvesting | | |
| Paddy Rice | | | | | Ploughing | Planting | | | | Harvesting | | |
| Livestock herding | | | | | | Rainy Season Pasture | | | | | | |
| Fishing | | | | Intensive | | | | | | Intensive | | |
| Vegetable gardens | Harvesting | | | | | | | | | | Planting | |
| NTFPs | | | | | | | | | | | | |

The most important activity is the production of rice. Except for the roadside villages of Nakai Neua and Nakai Tai, and to a lesser extent Done, villages practice extensive swidden or upland rice cultivation. This involves approximately 10 months of work with the most intensive periods being the actual clearing and firing in the hot season and harvesting at the end of the year. Harvests are relatively poor: 723 kilos/family compared with 1558 kilos/family in the lowland areas in Gnommalat District. The months when villagers are not engaged in rice production are mostly devoted to collecting Non-Timber Forest Products. The area is far from self-sufficient in rice as indicated in Table 4-3 below.

Table 4-3: Rice Requirements and Yields for Plateau Villages in 2002

| Village (Dominate Ethnic Group or Groups) | Age Division | | | | | Wet Season Paddy | | | | Dry Season Rice | | | Upland Rice | | | | | |
|---|---|--------------|--------------|--------------|--------------|--|-----------------------|--|-------------------------------|-----------------------|---------------------------|-----------------------|-------------------------------------|-----------------------|--------------------------------------|---|--------------------------------------|--------------------------------------|
| | HH | Persons | Total | 1-14 yrs | > 15yrs | Rice requirement in 1 year kg | area planted ha | area destroy- ed by flood ha | final productio n kg | area planted ha | final production kg | area planted ha | area destroyed by flood ha | final prod'n kg | production unmilled rice kg | production, calculated as milled rice kg | annual rice deficient kg/yr | months de- ficient no. mths |
| | Nakai District, Khammouane Province - Plateau Villages | | | | | | | | | | | | | | | | | |
| Phonphanpek (Mixed) | 73 | 472 | 234 | 208 | 264 | 88,184 | | | | | | 31.00 | 1.00 | 16,213 | 16,213 | 9,727 | 78,457 | 10 |
| Nongboua (Brou/Bo) | 31 | 157 | 75 | 84 | 73 | 122,922 | | | | | | 15.00 | | - | - | - | 22,922 | 12 |
| Sop On (Brou/Bo) | 84 | 429 | 199 | 207 | 222 | 88,840 | | | | | | 18.53 | 6.90 | 2,180 | 2,180 | 1,308 | 87,532 | 11 |
| Bouama (Brou) | 56 | 300 | 152 | 140 | 160 | 53,421 | 2.00 | 2 | 1 200 | 2 | 2,150 | 22.67 | 4.05 | 1,796 | 5,146 | 3,087 | 50,334 | 10 |
| Phonesavang (Brou) | 27 | 159 | 79 | 79 | 80 | 29,054 | | | | | | 9.25 | 1.51 | 7,939 | 7,939 | 4,763 | 24,291 | 10 |
| Sopma (Bo) | 46 | 166 | 80 | 76 | 90 | 30,806 | | | | | | 23.63 | 8.40 | 9,452 | 9,452 | 5,671 | 25,135 | 9 |
| Done (Brou) | 115 | 726 | 359 | 351 | 375 | 133,371 | 29.75 | 7 | 14 270 | 5 | 5,900 | 40.40 | 10.00 | 54,700 | 74,870 | 44,922 | 88,449 | 7 |
| Khone Khen (Brou) | 42 | 246 | 127 | 119 | 127 | 45,187 | 12.00 | - | 13 500 | | | 34.70 | 5.90 | 28,020 | 41,520 | 24,912 | 20,275 | 5 |
| Ka Oy (Brou) | 24 | 153 | 72 | 70 | 83 | 28,397 | | | | | | 50.94 | 3.63 | 5,750 | 5,750 | 3,450 | 24,947 | 10 |
| Sop Phene (Bo) | 43 | 230 | 118 | 107 | 123 | 42,559 | | | | | | 39.00 | 10.21 | 13,600 | 13,600 | 8,160 | 34,399 | 9 |
| Nakai Neua (Bo) | 79 | 376 | 200 | 186 | 190 | 68,766 | 18.00 | 10 | 13 716 | 18 | 18,500 | 19.12 | 2.30 | 1,863 | 34,079 | 20,447 | 48,319 | 8 |
| Nakai Tai (Bo/Vietic) | 174 | 832 | 422 | 352 | 480 | 156,533 | 19.98 | 8 | 16 289 | 8 | 10,500 | 35.93 | 3.30 | 36,043 | 62,832 | 37,699 | 118,834 | 9 |
| Nongboua-kham (Tai) | 40 | 286 | 133 | 130 | 156 | 53,144 | 3.00 | 3 | 0.7 | 2 | 2,200 | 18.00 | 2.40 | 300 | 3,200 | 1,920 | 51,224 | 11 |
| Thalang (Tai) | 64 | 329 | 173 | 147 | 174 | 59,568 | | | | | | 47.00 | 5.89 | 9,993 | 9,993 | 5,996 | 53,572 | 10 |
| TOTAL | 898 | 4,861 | 2 423 | 2,256 | 2 597 | 900,752 | 84.73 | 29.96 | 58 975 | 34.25 | 39,250 | 405.17 | 65.49 | 187,849 | 286,774 | 172,062 | 728,690 | |

average yield : 1.1 t/ha

average yield: 0.55 t/ha

| Khamkeut District, Bolikhamxai Province - Plateau Villages | | | | | | | | | | | | | | | | | | |
|---|-----------|------------|------------|------------|------------|---------------|----------|--|--------------|--|--|-----------|--|---------------|---------------|---------------|---------------|---|
| Nam Nian (Tai) | 23 | 130 | 62 | 56 | 74 | 24 382 | 3 | | 5 350 | | | 7 | | 5 530 | 10 880 | 6 528 | 17 854 | 9 |
| Sop Hia (Tai/Vietic) | 56 | 316 | 147 | 160 | 156 | 57 524 | | | | | | 37 | | 23 050 | 23 050 | 13 830 | 43 694 | 9 |
| TOTAL | 79 | 446 | 209 | 216 | 230 | 81 906 | 3 | | 5 350 | | | 44 | | 28 580 | 33 930 | 20 358 | 61 548 | |

Table 4-4: Total and Average Rice Yields for Plateau Villages

| Summary | Amount | Units |
|---|----------|-------|
| Total area of Wet paddy field (2002 wet season) | 87 730 | ha |
| Paddy area destroyed by flooding and insect pests | 29 970 | ha |
| Current are of dry season paddy field | 34 250 | ha |
| Total area of upland fields (2002 wet season) | 448 870 | ha |
| Upland rice area destroyed by flooding and insect pests | 65 490 | ha |
| Total production - as paddy (unhusked) | 320 674 | kg |
| Total production - as milled rice | 192 420 | kg |
| Rice requirement in 1 year | 982 658 | kg |
| amount of rice villagers are deficient in | 790 238 | kg |
| average number of months rice deficient | 9 Months | |
| Sum of rice requirement helping | 790 238 | kg |

Shifting, or swidden, cultivation is a major governmental concern for many reasons. Even with small populations and adequate fallow time, the yields of shifting cultivation can rarely support a family of four without supplemental rice purchases in present day Lao PDR (UNDP 1994). In addition there is the desire to protect the watersheds to sustain adequate water yields for hydropower project production. Population pressures without an increase in agriculture production will only cause more forest area to be lost, and the amount of natural forests in the vicinity of the village to decrease. People need to walk farther to find and use forest products. Farmers are forced to reduce fallow periods, and shorter fallow periods cause soil fertility to diminish, and erosion problems to increase. A shorter fallow period negates the use of ecologically-sound agricultural practices necessary to protect the fertility of Alisols soils, which are reportedly heavily leached, susceptible to erosion and with low pH, and organic matter content (see Table 10-12).

The weathered, leached, Alisols soils require a 15-year fallow period for the best result.² Recent studies show the optimal number of people to forest area is about 12 persons per sq. km. The environment and the agricultural resource base are being degraded in a constantly reduced cycle. Declining soil fertility results in reduced crop yields. Labor requirements to control weeds increase, which does not exist in sufficient quantity, and thus yields decrease. This in-turn places the household at risk, and thus more land is placed under shifting cultivation. In addition, the environment has been further degraded by commercial logging on the Plateau since the 1980s.

In order to compensate for recurrent rice deficits, villagers grow corn and vegetables, and collect wild tubers and other edible forest products. They also raise livestock (buffalo and cattle), which generally serve as a reserve that can be sold at times of rice deficit. With the substantial changes associated with forestry operations on the Plateau, it would appear that they are becoming increasingly reliant on hunting, fishing and the collection and sale of NTFPs. The absence of wildlife in the immediate vicinity of villages, and the declining availability of forest resource base would suggest that the sustainability of these practices is questionable. Most of the wildlife of the Plateau has already been hunted out and some forest products, such as damar resin, are either being harvested at an unsustainable rate or are becoming harder to obtain.

4.2.5 Rice Deficiency and Ethnicity

There is no correlation between ethnicity and paddy production (see Table 4-4). Paddy is grown by Bo in Nakai Tai and Nakai Neua and by Brou in Done, Kone Khen and Bouama. Also Vietic grow paddy (in Nakai Tai). Dry season rice is grown in the same villages except for Khone Khen. Upland rice is grown in all villages and by all ethnic groups.

² Many villagers stated that they let their fields remain fallow for only 3-4 years and claimed that was ample time. They are no doubt echoing government policy concerning swidden agriculture and the desire to stop villagers from burning down forests. The same arguments were encountered in the villages near the site of Theun-Hinboun dam (Sparkes 1995:12-13). Upon inspecting the fields in the vicinity of the villages, however, it became obvious that the fields were fallow for 10-15 years.

According to the 1996 survey Vietic households and households from new villages had a higher degree of rice sufficiency (39 % and 32 %) than Bo and Brou (see Table 4-5). Half of Brou households (51 %) had rice deficit for up to 6 months, while only 21 % of Bo, 25 % of households in new (mixed) villages had 25 % and 30 % of Vietic households had deficiency for up to 6 months. 62 % of the Bo households had rice deficiency for 6 months or more, while this was the case for 40 % of the Brou households and households from new villages and 31 % for Vietic.

Table 4-5: Rice Deficiency on the Nakai Plateau, 1996

| Ethnic group | Percentage of households rice deficient by number of months | | | | | Total |
|--------------|---|--------------|--------------|---------------|-------------|-------|
| | Sufficient | Deficit <3 m | Deficit 3-6m | Deficit 6-8 m | Deficit >8m | |
| Bo | 17 | 6 | 15 | 62 | 0 | 100 |
| Brou | 6 | 17 | 34 | 19 | 21 | 97 |
| Vietic | 39 | 10 | 20 | 31 | 0 | 100 |
| New Villages | 32 | 16 | 9 | 13 | 27 | 97 |
| Average | 17 | 12 | 22 | 36 | 13 | 100 |

4.2.6 Livestock and Animal Husbandry on the Plateau

Buffalo are the dominant type of livestock owned within the project area (see Table 4-6). The total number of buffalo in the villages to be resettled was 3,100 head in 1996 and 4,146 in the 1998 census, with average ownership of 4.3 per household. Distribution is markedly skewed, with some households owning over 30-40 animals (up to 90 head being recorded in 1996), and a significant proportion not owning any head at all. Due to flooding and the subsequent loss of all rice in the autumn of 1996, many animals were sold to make ends meet. Buffalo are kept largely as a store of wealth for use in times of need, rather than being considered as a resource managed for regular income.

A small proportion of adult animals are used for draft purposes in those villages that have permanent rice fields. There is also some rental of draft animals to lowland farmers on the Gnommalat Plain for 1-2 months of the year for land preparation. However, this practice seems to have halted due to the introduction of hand-tractors in the lowland areas.

The number of domestic animals, especially buffalo, reportedly has never recovered from the effects of the Second Indochina War (1962-1975).³ In 1996, the 16 villages in the CARE study owned 3,100 buffalo, though three villages (Ban Nakai Tai, Ban Done and Ban Thalang) accounted for almost 60 percent. This 1996 survey of the number of animals per household is compared with a more recent survey carried out in late 1998 indicated in Table 4-7. A number of villages were not originally included in the first survey so that the totals differ by approximately 30 per cent. In addition, the methodology of the second survey was more thorough and detailed.

Buffalo are currently allowed free-range access to grass-fields and under forest grazing areas, but are excluded from rice fields and gardens during periods of cultivation. Taking into account all possible grazing areas, stocking rates could be as low as 1 animal to 20 hectares, but is more likely to be much higher due to the way each herd is managed at the village level. It is evident that stocking rates are higher in the Ban Nakai Neua and Ban Nakai Tai area, with a stocking rate closer to 1 animal to 4 ha.

During the dry season, animals graze largely unattended in forest areas. During the wet season, they are commonly placed in a penned area at night within the village to prevent damage to crops. There is no supplementary feeding of improved forage, nor management of natural forage through controlled grazing of different areas at different times of the year. A shortage of feed is reported by some farmers from March through to May, corresponding with the middle to the end of the dry season, but this appears to be as much a function of how far farmers are prepared to graze their animals away from the village, as it is an absolute shortage of feed.

³ The Second Indochina War refers to a period of hostilities lasting from approximately 1962 until the victory by the Pathet Lao forces in 1975. This is incorrectly referred to as the Vietnam War in the West, partly because the conflict was 'secret' and not officially declared by either Vietnam or the US.

Table 4-6: Livestock Population for Reservoir Villages

| Village Name | Dominating Ethnic Group | Livestock Population, 1996 | | | Livestock Population, 1998 | | |
|--------------------|-------------------------|-----------------------------|-------------|---------------|----------------------------|------------|---------------|
| | | Buffalo | Pigs | Poultry | Buffalo | Pigs | Poultry |
| Ban Nakai Tai | Bo | 740 | 260 | 580 | 1123 | 89 | 2281 |
| Ban Nakai Neua | Bo | 209 | 22 | 500 | 384 | 36 | 763 |
| Ban Sailom | Bo / Brou | 239 | 60 | 200 | 47 | 13 | 49 |
| Ban Pamanton | Bo / Brou | Included with Ban Sailom | | | 16 | 2 | 148 |
| Ban Nong Boua | Bo / Brou | Included with Ban Sailom | | | 140 | 3 | 145 |
| Ban Sop On | Bo / Brou | 105 | 36 | 600 | 166 | 95 | 552 |
| Ban Sop Phene | Bo / Brou | 100 | 150 | 2000 | 188 | 39 | 428 |
| Ban Hat Khamphane | Bo / Brou | Not included in 1996 survey | | | 58 | 5 | 310 |
| Ban Phonphanpek | Brou / Bo | Not included in 1996 survey | | | 138 | 22 | 393 |
| Ban SopMa/KengGnao | Brou / Bo | 31 | 13 | 850 | 35 | 21 | 365 |
| Ban Done | Brou | 760 | 262 | 1400 | 1076 | 115 | 2381 |
| Ban Boua Ma | Brou | 262 | 59 | 246 | 304 | 53 | 634 |
| Ban Khone Khen | Brou | 153 | 56 | 363 | 164 | 72 | 331 |
| Ban Phonsavang | Brou | 69 | 25 | 150 | 77 | 7 | 158 |
| Ban Ka Oy | Brou | Not included in 1996 survey | | | 38 | 57 | 364 |
| Ban Sop Hia | Tai / Vietic | 40 | 20 | 300 | 73 | 32 | 1154 |
| Ban Nam Nian | Tai | 16 | 17 | 250 | 8 | 0 | 262 |
| Ban Thalang | Upland Tai / Bo | 328 | 158 | 1700 | 51 | 40 | 661 |
| Ban Nong Boua Kham | Mixed | 15 | 15 | 230 | 4 | 38 | 615 |
| Oudomsouk | Mixed | Not included in 1996 survey | | | 56 | 48 | 1178 |
| Ban Tham On | | 19 | 21 | 600 | Village no longer exists | | |
| Ban Nya Long | | 14 | 7 | 80 | Village no longer exists | | |
| TOTAL | | 3100 | 1181 | 10,049 | 4,146 | 787 | 13,172 |

Periodic outbreaks of Hemorrhagic Septicemia, Foot and Mouth Disease and Blackleg are reported with high losses. Vaccination rates are low. Mortality rates in calves (0-1 years) of up to 50% are reported. Liver fluke is also reported to be a problem in buffalo that have been rented out to farmers in the lowlands. Drenching for endoparasites is not practiced, and there appears to be no use of any other animal health remedies.

Average ownership of pigs in project villages is reported to be 6 head per household. Pigs are owned by most households, mainly to recycle wastes and as a sideline income generating activity, but also for slaughter for household consumption and for use on ceremonial occasions. The only breed evident is of local origin, black and relatively small. In general pigs are not housed but are left to forage, with minimal supplementary feeding of rice bran, reject corncobs, banana and palm stems, tuberous and aquatic plants, and household scraps. Periodic outbreaks of swine fever are reported, with very high losses.

Chickens of local breed are owned by almost all households, with average ownership of 14 per household. They are kept for sale, for household consumption and for use on ceremonial occasions. Poultry are generally left to range outside, and are not vaccinated. Populations are routinely decimated by Newcastle Disease and fowl cholera with near total losses. Again, the effect of these epidemics is obvious in the district statistics. Birds are commonly sold for consumption at 1-2 years of age for 1,500-2,500 Kip per head. A few households reported more specialized chicken production, with chickens being housed and fed a diet of rice bran, corn and scraps. Eggs are traded for 150 Kip each.

Some households, generally in villages located close to the river, also raise a few ducks for sale. Three-year-old ducks are sold for 3,500-4,000 Kip each. Cash income in project villages from poultry production was 8,600 Kip per household in 1996, or 4% of total cash income (CARE 1996).

Table 4-7: Livestock Ownership per Household

| Village | Main Ethnic Group | Average per HH (1996) | | | Average per HH (1998) | | |
|-----------------------|-------------------|-----------------------------|------------|-------------|--------------------------|------------|-------------|
| | | Buffalo | Pigs | Poultry | Buffalo | Pigs | Poultry |
| Ban Nakai Tai | Bo | 5.7 | 2.0 | 4.5 | 7.7 | 0.6 | 15.7 |
| Ban Nakai Neua | Bo | 3.6 | 0.4 | 8.6 | 6.7 | 0.6 | 13.4 |
| Ban Sailom | Bo / Brou | 6.0 | 1.5 | 5.0 | 3.6 | 1.0 | 3.8 |
| Ban Pamanton | Bo / Brou | Included with Ban Sailom | | | 2.3 | 0.3 | 21.1 |
| Ban Nong Boua | Bo / Brou | Included with Ban Sailom | | | 17.5 | 0.4 | 18.1 |
| Ban Sop On | Bo / Brou | 1.8 | 0.6 | 10.3 | 2.7 | 1.5 | 8.9 |
| Ban Sop Phene | Bo / Brou | 2.5 | 3.8 | 50.0 | 4.6 | 1.0 | 10.4 |
| Ban Hat Khamphane | Bo / Brou | Not included in 1996 survey | | | 3.2 | 0.3 | 17.2 |
| Ban Phonphanpek | Brou / Bo | Not included in 1996 survey | | | 3.5 | 0.6 | 10.1 |
| Ban SopMa / Keng Gnao | Brou / Bo | 0.9 | 0.4 | 25.0 | 1.2 | 0.7 | 12.6 |
| Ban Done | Brou | 8.7 | 3.0 | 16.1 | 12.4 | 1.3 | 27.4 |
| Ban Boua Ma | Brou | 6.7 | 1.5 | 6.3 | 5.7 | 1.0 | 12.0 |
| Ban Khone Khen | Brou | 4.3 | 1.6 | 10.1 | 4.4 | 1.9 | 8.9 |
| Ban Phonsavang | Brou | 2.4 | 0.9 | 5.2 | 3.1 | 0.3 | 6.3 |
| Ban Ka Oy | Brou | Not included in 1996 survey | | | 1.5 | 2.2 | 14.0 |
| Ban Sop Hia | Tai / Vietic | 0.8 | 0.4 | 5.9 | 1.4 | 0.6 | 21.4 |
| Ban Nam Nian | Tai | 0.7 | 0.7 | 10.4 | 0.5 | 0.0 | 16.4 |
| Ban Thalang | Upland Tai | 8.9 | 4.3 | 45.9 | 1.2 | 1.0 | 16.1 |
| Ban Nong Boua Kham | Mixed | 0.4 | 0.4 | 5.6 | 0.1 | 1.2 | 18.6 |
| Oudomsouk | Mixed | Not included in 1996 survey | | | 0.6 | 0.5 | 12.5 |
| Ban Tham On | | 1.6 | 1.8 | 50.0 | Village no longer exists | | |
| Ban Nya Long | | 3.5 | 1.8 | 20.0 | Village no longer exists | | |
| TOTAL | | 4.3 | 1.6 | 14.0 | 4.7 | 0.9 | 14.9 |

4.2.7 Livestock Distribution and Ethnicity

As with rice production, it is difficult to generalize with livestock distribution in relation to the different ethnic groups on the Plateau. Livestock ownership seems to be related to the availability of pastures (forests or wetland areas) and the presence or absence of various diseases more than to ethnicity (see Table 4-7). High numbers of buffaloes per household are found in Nong Boua (Bo/Brou, 17.5 head per HH) and Done (Brou, 12.4 head per HH). The villages with the lowest per household ownership appear to be the smaller Bo and Vietic villages – higher rates of disease were recorded in these villages, often resulting in the decimation of small livestock. Lower per household ownership is also the case in roadside villages and the District Capital of Oudomsouk where there were a lack of available pastures and alternative sources of livelihood were common.

4.2.8 Non-Timber Forest Products (NTFPs)

During the periods of participatory observation in the villages on the Plateau, most families were engaged in searching for Non-Timber Forest Products in order to make ends meet. Such activities are common during the winter months of December through to February, between harvesting and clearing of swidden fields. Since 1997 many have camped out in the forests well into April because there was no rice available in the villages, and some have been forced to survive on NTFPs, including wild roots and tubers, edible plants, mushrooms, insects and wildlife. The other reason for staying away from the village has been to collect NTFPs to supply to middlemen (as part of the village quota) who exchange NTFPs for rice and cash. With the early rains in late April and in the beginning of May, the delay may prove disastrous for some. The following is a list of products harvested on the Nakai Plateau.

- Damar resin (*keivi*): either old resin found in clumps on the forest floor or new resin removed from trees by making V-shaped cuts to tap the bark. This was the main source of income for villages and in 1997 there was evidence of extensive and damaging tapping everywhere. Villagers stay for up to

two weeks in the forests to collect this item which is sold to middlemen and then to Thailand. There it is mixed with turpentine and other materials to waterproof baskets and boats. Limited amounts are still found on the Plateau.

- Fragrant bark (nyang bong) is stripped off the bong tree (*Notaphoebe umbelliflora*). This severely damages the tree and often kills it. The trees are sometimes cut down first and then stripped. The bark is used to make incense which is on sale in local markets in Khammouane Province and in Thailand. The *bong* is becoming rare on the Plateau.
- Rattan (boun, saan and nai): these plants are used for food and for tying together bamboo weaving. They are increasingly rare on the Nakai Plateau.
- Crepper (thoun): this is used for binding bamboo pieces together in the construction of buildings. This was previously harvested in March but there has been virtually none in the past few years.
- Palm-like fruits and leaves (tau and khou): these palm trees provide food that is consumed in villages or sold and leaves used for roofing. They are available year round but mostly harvested in the winter when villagers have more time to fix houses or build new dwellings.

Villagers have traditionally made up the deficit in rice by selling these Non-Timber Forest Products and buffalo. For a number of factors already mentioned above, the availability of these products has diminished. The following table is a compilation of interviews and shows the relative prices of rice bought for resin sold per kilo.

Table 4-8: Comparison of Prices (Kip) of Non-Timber Forest Products and Rice

| Date | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|--------------|-------|------|------|------|------|------|------|---------|---------|---------|---------|----------|
| Rice (1 kg) | 100 | 220 | 250 | 280 | 320 | 380 | 400 | 420-500 | 600 | 600 | 800 | 1000 |
| Resin (1 kg) | 30-50 | 40 | 50 | 70 | 100 | 140 | 150 | 170 | 120-200 | 200-350 | 500-600 | 800-1200 |

The prices are calculated from various interviews with villagers from all over the Plateau and give a rough idea of the increase in the 1990s. Other items such as rattan products and bark have increased in price by more than double but these products are more difficult to acquire in most areas. The price of fish per kilo has also doubled over this time as well.

Resin is the main source of income and is often exchanged directly for rice in the villages with middlemen from Thakhek picking up the bags of resin for markets in Thailand and returning a few days later with sacks of rice and cash. The village headman was responsible for organizing such exchanges and making agreements with merchants in advance.

In 1990 it took approximately 2 ½ kilos of resin to purchase one kilo of rice, and in January 1997 the ratio was about the same. The difference in the latter 1990s is that so much rice needs to be bought for a limited amount of resin available. The really crucial point is the demand for seed rice in May since most households will have to buy seed rice or borrow it from relatives in the lowlands. A brief field visit by the consultant in April 2002 confirmed that the price of rice per kilo was 2000 kip in the markets and 3000 kip if transported to the villages. Despite the fact that there is a doubling of the price of rice, the price for selling resin in the markets or to middlemen has remained the same at 800-1000 kip per kilo in 2002. The most recent information on prices indicate one kilo of resin at 1,000-1,200 (2003-2004) – a slight increase from 2002 – and the price of rice at 2,500-4,000 per kilo depending on the season, slightly higher than the 2002 statistics. This indicates that the exchange of resin for rice four to one.

When fieldwork was conducted in January and February 1997, authorities and NTEC were made aware of the severe food shortage on the Plateau related to the severe flooding of 1996. NTEC together with EcoLao then attempted to acquire funding and food for the Plateau through various aid agencies. CARE International Lao in Vientiane distributed 180 tons of rice on the Plateau and 10 tons of rice seeds. The World Food Program (WFP) distributed 150 tons of rice to villages of the Plateau affected by flooding. This provided some relief but the long-term recovery of the local economy will only be accomplished with planning and new skills to cope with a diminishing resource base. Hence the attractiveness of the

proposed livelihood model (Chapter 12-16). The flooding of 2002-2004 has not been excessive and these years can be described as ‘normal’ flood years with yields of 40-60% of rice needs.

4.2.9 Fisheries

After rice, fish is the most important item on the diet for all ethnic groups on the Plateau. Fish are caught mainly for household consumption with occasional surpluses being sold in local markets, on the roadside or to neighbours. Fresh fish are consumed during the rainy season, but in the dry season, villagers may have to rely on dried or fermented fish (*paa daek*). All kinds of fish are caught for human consumption, with catfish and carp species being the most common. Fish, in this context, implies all kinds of aquatic organisms of which fish are usually predominant. Small-mesh nets and traps catch many invertebrates, all of which are eaten.

Men fish in the mornings and evenings, before they leave for the fields and after they return. Most fish are caught by cast nets in the rapids, or by deep-water gill nets. Bait and hooks are also used, but to a lesser extent. Boys and sometimes women search the banks and shallows for frogs, aquatic insects and small fish that supplement the family’s diet.

There is a tendency in some villages, such as Ban Sop Hia, to catch fish for sale in the markets in Ban Lak Sao or Oudomsouk. Given that the supply of fish from numerous villages in the vicinity seems to exceed the market demand, prices have remained stable or even fallen. Villages, without a good knowledge of the workings of the market, have increased fishing to a level that may be unsustainable in the long run. Villagers in Ban Sop Hia in April 2002 complained that big fish were now rarely caught.

There is no statistical information available for the importance of river fishing to the local economy. But it is evident from the numerous fishing nets and fishermen observed along many, if not all, of the rivers in the study area, that river fishing is important to the local people and the most important source of protein. During the repeated overnight stays by survey teams at the villages fish was the one food which was readily available at all times.

4.2.10 Reliance on NTFPs, Fisheries and Sale of Wild Animals in relation to Ethnicity

The following table is based on data collected in the CARE Report (1996) and attempts to relate income from NTFPs, fishing and the sale of wild animals to the different ethnic groups in the Plateau. Not all villages were covered during this survey and the data is indicative only given the fact that there is a reluctance to divulge information, especially concerning hunting of wild animals. All prices are in kip.

The correlation of livelihood activities with ethnic groups is difficult primarily because there are other factors which also determine livelihood options and that all ethnic groups on the Nakai Plateau are engaged in all types of activities to some degree since knowledge and technology are shared. As regards, NTFPs, fishing and hunting, the following factors are important:

- Location in terms of resources – proximity to rivers, forests and wildlife
- Market access – either proximity to markets or contacts through middlemen
- Demand for products and prices
- Number of options available in the livelihood system

Ethnicity does not seem to be the main factor in relation to the sale of NTFPs, fishing and wild animals if one examines these three income sources in Table 4-9. If one looks at villages with high and low average per household income from NTFPs, one can see that all ethnic groups are represented. The Bo in Sop Phene and Sop Ma, the Brou in Phonsavang and the Tai, Vietic and Bo in Sop Hia and Thalang have a high reliance on the gathering of NTFPs. All of these villages have relatively good access to the Nakai-Nam Theun NBCA and have market access through middlemen who visit villages or directly in the case of Thalang. The villages of Nakai Neua (Bo), Nakai Tai (Bo and Vietic) and Nam Nian (Bo and Tai) are all roadside villages with alternative sources of income from shops, stalls and wage employment. In addition, Nakai Neua, and Nakai Tai have poor access to NTFPs, being furthest away from forests.

Table 4-9: NTFPs, Fishing and Wild Animals for Sale in Relation to Household Income

| Village | Main ethnic group | No. of HH (1996) | NTFPs | | Fishing | | Wild Animals for Sale | |
|----------------------|-------------------|------------------|----------------------|----------------|----------------------|----------------|-----------------------|----------------|
| | | | Value of per Village | Average per HH | Value of per Village | Average per HH | Value of per Village | Average per HH |
| Ban Nakai Neua | Bo | 58 | 1,465,000 | 25,258 | 3,000,000 | 51,724 | 1,345,000 | 23,189 |
| Ban Nakai Tai | Bo | 130 | 2,205,000 | 16,961 | 1,800,000 | 13,846 | 496,000 | 3,815 |
| Ban Sailom | Bo/Brou | 40 | 1,765,000 | 44,125 | 4,625,000 | 115,625 | 200,000 | 5,000 |
| Ban Sop On | Bo/Brou | 58 | 4,235,800 | 73,031 | 10,050,000 | 173,275 | 2,432,000 | 41,931 |
| Ban Sop Phene | Bo/Brou | 40 | 6,020,000 | 150,500 | 1,600,000 | 40,000 | 430,000 | 10,750 |
| Ban Sop Ma/Keng Gnao | Bo/Brou | 34 | 4,946,000 | 145,470 | 1,200,000 | 35,294 | 1,005,000 | 29,558 |
| Ban Done | Brou | 87 | 4,141,300 | 47,601 | 1,650,000 | 18,965 | 1,080,000 | 12,413 |
| Ban Boua Ma | Brou | 39 | 1,930,500 | 49,500 | 3,525,000 | 90,384 | 780,000 | 20,000 |
| Ban Khone Khen | Brou | 36 | 1,087,000 | 30,194 | 1,000,000 | 27,777 | 384,000 | 4,465 |
| Ban Phonsavang | Brou | 29 | 3,149,000 | 108,586 | 1,800,000 | 62,068 | 510,000 | 17,586 |
| Ban Sop Hia | Tai/Vietic | 51 | 10,720,000 | 210,196 | 1,950,000 | 382,352 | 2,449,500 | 48,029 |
| Ban Nam Nian | Tai | 24 | 248,000 | 10,333 | 950,000 | 39,583 | 178,000 | 7,416 |
| Ban Thalang | Tai/Bo | 37 | 25,570,000 | 691,081 | 3,480,000 | 940,540 | 654,000 | 17,675 |

With regards fishing, the villages of Sop On (Bo/Brou), Sailom (Bo/Brou), Sop Hia (Tai/Vietic) and Thalang (Bo/Tai) derive relatively high amounts of kip from fishing. This is mainly due to access since these villages, with the exception of Sailom, are located on the Nam Theun near rapids or relatively fast-moving water where fish are more abundant. One reason the residents of Sailom (now relocated into the new village of Nong Boua Kham) rely on fishing is a combination of poor agriculture production, lack of alternatives and ready access to the markets at Oudomsuk. The lowest average per household levels were at Nakai Tai, Done and Khone Khen where the first village is located far from the Nam Theun and the latter two along less productive stretches of the Nam Theun in terms of fish production and farthest from markets for selling fresh fish.

Data on the sale of wild animals indicates that the villages of Sop Ma/Keng Gnao (Bo/Brou), Sop On (Bo/Brou) and Sop Hia (Tai/Vietic) have the highest average per household incomes from this source. Again this has to do with both access to resources and markets rather than ethnicity. Villages with relatively low income from the sale of wild animals are either roadside villages with other sources of income, such as Nam Nian, far from forests, such as Nakai Tai and Sailom, or far from markets, such as Khone Khen.

It should be reiterated that all ethnic groups partake in gather NTFPs, in fishing and in hunting. Most of these activities are being pursued at an unsustainable level at present with NTFPs, fish and wildlife disappearing from the Nakai Plateau. Traditional techniques and levels of harvesting these resources are rapidly being replaced by more systematic means, such as fulfilling quotas for NTFPs set by middlemen from Thakhek, dynamite fishing and hunting parties to satisfy a growing demand for fish and wildlife in the towns, in particular markets in Lak Xao.

From the point of view of the different ethnic groups on the Plateau, it can be argued that the Vietic, in general, are more reliant on the natural resources of the forests and rivers, and less on livestock.

4.3 BELIEF SYSTEMS AND CULTURAL HERITAGE ISSUES

4.3.1 Overview of Belief Systems

As would be expected with a melting-pot culture, there is a considerable amount of shared cosmological concepts and beliefs on the Nakai Plateau. These beliefs are similar to many groups of Southeast Asia, including the lowland Lao and the various groups in the vicinity of the Plateau.

All of the ethnic groups believe in spirits that control various aspects of the cosmos and explain causality, including accidents, sicknesses, death and incomprehensible phenomena. Each type of spirit is associated with a certain location and a particular power to affect the lives of the living. Some villages, notably the Brou villages at the southeast end of the Plateau and some Bo villages along the road, have been influenced by ‘folk Buddhism’ from the lowlands but for the most part this Buddhism is a thin veneer on top of spirit beliefs.

The most important powers in the spirit world are the territorial spirits that govern large areas and are an important consideration when relocating villages. Other spirits which play an important role in village life are the so-called ‘visiting spirits’ (*phi thiem*) and the ancestral spirits (*phi mau*). House spirits (*phi heun*) are important in relation to moving houses.

4.3.2 Ethnic Aspects of Belief Systems

Despite the similarities, there are some differences between the ethnic groups, and it is necessary to review these before describing the common spirits and rituals.

Vietic Groups

The Vietic Groups that inhabit the Plateau were originally forest dwellers and animists but have been influenced firstly by lowland Lao perceptions and traditions due to extended stays in Thakhek and other lowland areas during the Second Indochina War and secondly by residing with Tai groups from the Lak Sao area. Little is known about the original cosmology but there appear to have been a number of mediums, both male and female, who have been able to contact the spirits in times of illness and for intervention. Only one elderly female medium was still active in Sop Hia in 2001. Mediums can also become territorial or ‘visiting’ spirits if powerful enough after they pass away.

Belief in forest spirits is still prevalent but data has not been collected systematically and in many cases is difficult to obtain (only elderly specialists seem to understand these matters) since spirits manifest themselves in various ways and at various times, often causing accidents and strange phenomena. Many terms and concepts from other groups are now used, such as the word *phii* to cover a range of spirits from the Lao language rather than the Vietic word, *kamut* or *kamuut* on many occasions. Since the Vietic are no longer nomadic, their cosmology is changing and merging with the other sedentary groups with whom they now reside. Tai and Lao ritual specialists have for the most part taken over the roles of traditional Vietic practitioners.

Bo or Tai Bo

The Bo have lost most, if not all, aspects of their Vietic origins in terms of cosmology. Like the Vietic groups, Lao, Tai and Brou ritual specialists perform rituals for this group and Lao terms are used to describe the spirit world.

Makong or Brou

Traditional Brou cosmology consisted of numerous spirits that inhabit animals, people and natural phenomena. The most important spirits were the spirit of the sky, known as *djang sursei*, the Creator Spirit, and the *djang cutek*, the spirit of the Earth responsible for good harvests. Originally there may have been totemism based on clan groups but this is no longer the case for the Plateau dwellers. The Brou also had a number of ritual specialists that communicated with the spirit world, mediums who performed divinations and cured diseases by divine intervention.

The Brou of the Plateau, however, have been influenced by lowland Lao and Buddhist traditions and today specialists conduct Lao rituals such as the calling of the life essence (*basi sukhwan*) and Buddhist monks are often called in for cremations or ceremonies before burial. Most ritual specialists in the Brou villages are former monks who have spent time in lowland monasteries, gaining ‘spiritual power’ or *saksit*.

4.3.3 Territorial Spirits

Territorial spirits (*phi muang* in Lao, Tai and Bo, *kamut djang* in Brou and *kamuut bauu* in Ahoe) are spirits that influence a large area around a village or group of villages. These spirits receive annual offerings (buffalo, pigs, turtles or chickens along with alcohol and other items) before the start of the agricultural season in February. The origin of these spirits is often a legendary person/founder of a village or the medium who communicated with the spirit. Table 4-10 indicates the names, ritual centers and origins of the spirits on the Nakai Plateau.

The table indicates which villages hold annual rituals for each of the territorial spirits. These take place in January or February before the commencement of the agricultural season. The origins of the spirits vary but they are usually connected with the names of former mediums and/or founders of the village. Mediums and politically powerful people have correspondingly powerful spirits and become associated with a particular territory and people residing in that territory. A relationship develops between the living and the spirit consisting of offerings and respect for the spirit in return for protection and intervention in times of need or disaster. The ritual offerings consist of animal sacrifice, alcohol and various decorations. The date for a *kin seng* ceremony, as it is called, is agreed upon by the ritual specialists and approved by village authorities.

In the *kin seng* ritual at Ban Nakai Neua (Bo, Brou, Tai and Lao attending) in 1997, four jars of alcohol (*lao hai*), four chickens, one pig and forest products (*bong* and *san*) were offered and a new platform with a roof was constructed for the spirit. The medium, Nang Phet, a 50-year old Bo woman, became possessed with the spirit of Jao Suliya. The spirit refers to the founder of the village who resisted a Siamese invasion of the nineteenth century. In the festive atmosphere that follows, Jao Suliya is called upon to protect the village and ensure a successful rice harvest in exchange for the sacrifices and food offered.

The territory covered by the *phi muang* is to be respected by those not residing in the village. Villagers from outside must first seek permission to harvest *keisi* (resin) or other NTFPs and pay a tax to the village headman. Villagers without a territorial spirit also levy taxes but cannot legitimize their actions in the same manner since all Lao are aware of the power of these *phi muang* and avoid making trouble. An incident with the logging company BPKP reveals just how important these territorial spirits are in the consciousness of the Lao as well as those living on the Plateau.

BPKP approached Ban Done in order to acquire permission to build a temporary bridge over the Nam On for transporting logs. Ban Done village authorities insisted on a fee of 500,000 Kip and the sacrifice of one buffalo to the spirit. Ban Khone Khen authorities were approached instead and the fee was only 300,000 Kip and one buffalo for a different location for the bridge. A deal was struck with Ban Khone Khen and the proper ritual performed to inform the spirit. This episode illustrates how the financial and the spiritual realms combine: fees and permission to cross spiritual territory are negotiable yet failure to do so could result in accidents and mishaps if the spirit is angered.

Figure 4-2: Nakai Plateau Villages Approximate Territorial Boundaries (1997)

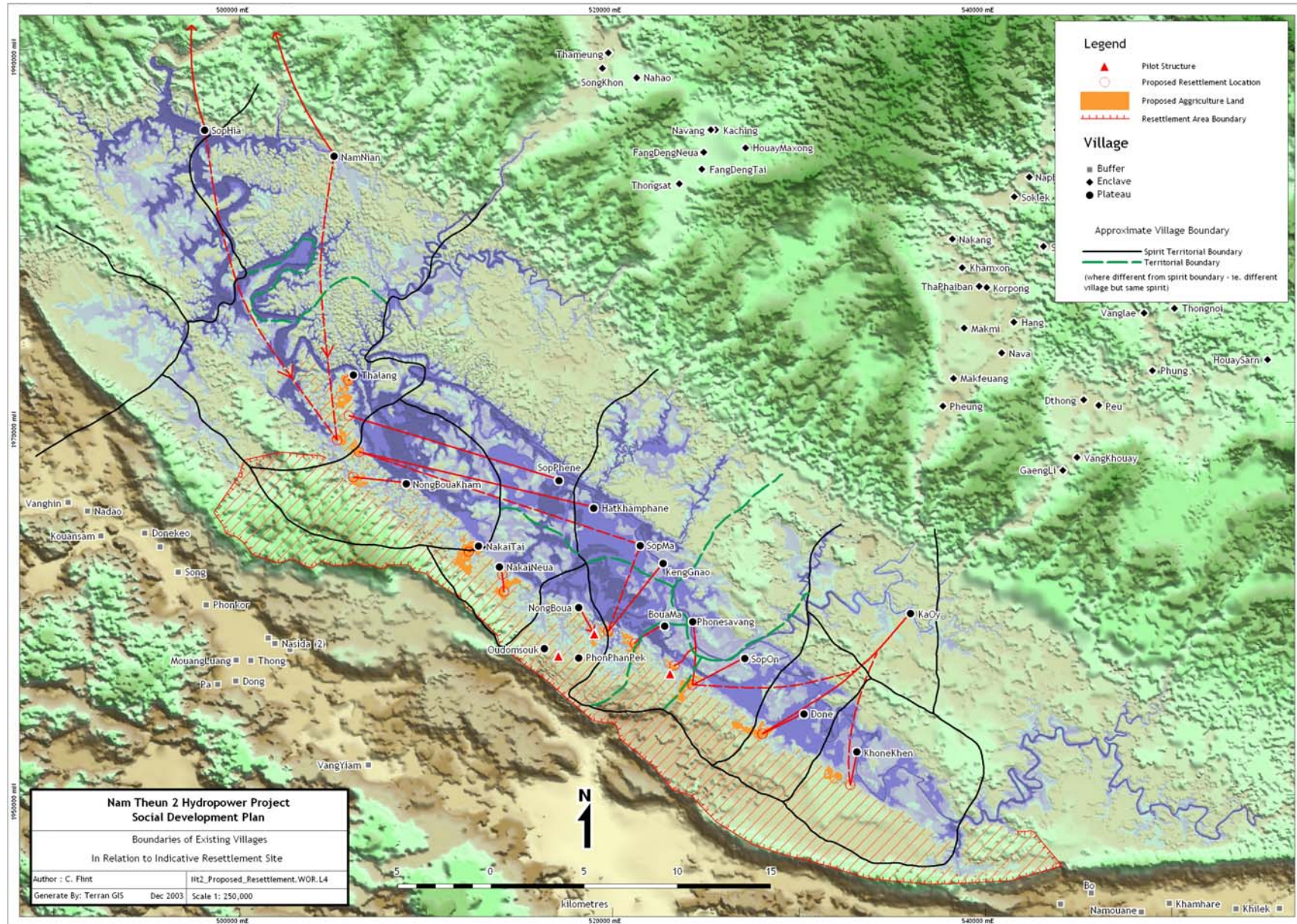


Table 4-10: Territorial Spirits of the Nakai Plateau

| Name of Spirit | Ritual Centre and Territory | Villages (and ethnic group) | Origin of Spirit | Explanations |
|--------------------------------|---|---|---|--|
| Thama Ransi | Ban Sop Hia - Din Hin Kiu Nam Yala | Ban Sop Hia (Dam Site) (Originally Vietic) | former medium of Ban Sop Hia | area refers to rapids at dam site and Nam Yala |
| Jao Naukaeo | Ban Pakkatan - Din Phu Heua | Ban Pakkatan (Originally Vietic) | unknown | name refers to mountain east of village |
| Ta Sang | Ban Thalang - Din Kaeng Panong | Ban Thalang - Ban Nam Nian (Originally Bo) | former medium and village head of Kaeng Panong | area refers to the former name of Ban Thalang at the Panong rapids |
| Jao Phu Saet | Ban Nakai Tai - Din Phu Saet (Daet Luang) | Ban Nakai Tai - Ban Nong Boua Kham (Originally Bo) | territorial spirit of the Saet mountain nearby | son-in-law of the spirit of Ban Nakai Neua |
| Jao Khwa Lakhon and Jao Suliya | Ban Nakai Neua - Din Bau Sang Khan Tau | Ban Nakai Neua Ban Sop Phene (Originally Bo) | founder who resisted Siamese invasion | refers to historic person and his son who inherited the position as leader |
| Phimmasen and Phimmasaun | Ban Sop On - Din Bau Puak Buak Mu | Ban Sop On, Ban Sop Ma, Ban Hat Khamphane, Ban Keng Gnao, Ban Boua Ma Ban Sailom and Ban Phonsavang (Originally Bo) | original names of the father and son who were mediums in Ban Sop On | area refers to salt mines and wallowing pool of wild pigs. It also relates to a legend about giants shaping the landscape. |
| Unknown name | Ban Ka Oy - Din Khanan | Ban Ka Oy (Brou) | unknown origin | spirit is related to spirit of Ban Khone Khen, possibly brothers |
| Jao Sua | Ban Done - Din Katap | Ban Done (Brou) | founder of the village | founder is son-in-law of spirit of Ban Khone Khen and Ban Ka Oy |
| Jao Hualan Ban Sin | Ban Khone Khen- Din Sin | Ban Khone Khen (Brou) | founder of the village | 'The bald man from Ban Sin', a refugee who fled the Siamese attack on Vientiane |

4.3.4 Visiting and Ancestral Spirits

Two other types of spirits are common throughout the Plateau: visiting spirits and ancestral spirits. These are not associated with a particular territory but rather with an individual medium or a family. Most villages on the Plateau had several examples of both kinds of spirits, and they are also common in some lowland areas.

Visiting spirits (*phi thiem*) are usually male spirits that originate in the forests and 'visit' villages by possessing women and, in some rare cases, men. The spirit will communicate his demands in February or March and a ritual is held in the medium's ritual hut. These huts are permanent and each year they are cleared and improved before the annual ceremony. The ceremony consists of offerings such as chickens, alcohol and various decorations. These forest spirits combine a number of qualities which villagers often confused with other spirits. They can also become territorial spirits under certain circumstances. In the Bo village of Sop Phene, the local female medium performs a ritual similar to the rituals of the territorial spirits and over time this 'visiting spirit' may in this way become the territorial spirit of that village since villagers no longer attend the *kin seng* ceremony in Ban Nakai Neua. A similar situation occurs in the Brou village of Keng Gnao where the local medium informed the survey team in 1997 that next year the spirit will reveal its identity and become a proper territorial spirit. In both cases, these villages seem to be trying to establish autonomy in the spirit world.

Phi thiem were also confused with *phi mau* (in Lao, Tai and Bo) which are translated here as ‘ancestral spirits’ since they are associated with a particular household. *Phi mau* are the spirits of deceased family members whose identity is no longer remembered but whose spirits are believed to inhabit the house and the compound areas.⁴ These rituals are performed by elderly men of all ethnic groups, often tracing their origins to founding families and having knowledge of magical formulae, sometimes combined with Buddhist text as a legitimising element. A long table is laid out with offerings in front of the house and copious amounts of meat and alcohol are consumed over a 24-hour period. The main function of such a ritual is similar to the above mentioned rituals: food offerings and incantations in exchange for protection and a successful agricultural season.

There are numerous spirits that do not have specific names but may manifest themselves whenever there are inexplicable events, illnesses or accidental deaths in the vicinity. Some are associated with deceased persons, especially those who have died violent deaths or those who have committed hideous acts. Sickness and unusual phenomena are associated with the spirit world. It is perhaps easy for the western, scientific mind to dismiss such beliefs, but it is important to take them seriously when dealing with villagers. One particular example which has direct consequences for health is the prohibition on hanging up mosquito nets in some Bo and Brou villages. The spirits of Ban Sop Phene, Ban Khone Khen and some households in Ban Boua Ma are adverse to the idea and some villagers risk malaria rather than arouse the wrath of these supernatural beings.⁵

4.3.5 Folk Buddhist Influences

Before 1975 there were many small wooden monasteries housing a few novices and monks in many of the Bo and Brou villages on the Plateau. Folk Buddhism, which is itself a mixture of Buddhist ideas and various spirit beliefs and Hinduism from the Khmer traditions, has influenced many aspects of religion on the Plateau. Today there are only two deserted monasteries in Ban Boua Ma and Ban Done which have been rebuilt since 1975, but these have not recently been functioning as places of worship.

There are, however, several former monks, referred to as ‘Jan’ (short for *ajjaan*, meaning teacher) who perform rituals that are similar to lowland Lao rituals and use elements from Buddhism such as Pali texts for magical spells (*kbathaa*). Jan Som from Ban Done serves all of the villages in the south-eastern part of the Plateau and is representative of this type of specialist. He travels from village to village performing various rituals for people recovering from illness, seeking protection from evil spirits and desiring prosperity and a successful harvest. After 14 Lenten seasons in the monastery in Gnommalat District, he considers himself a practitioner of Buddhism because, as he expressed in his own words: ‘*takon bau mi sasana, bau mi kotma*’ (before there was no religion, no laws). This form of Buddhism differs greatly from the Buddhism practiced in major towns in Lao PDR.

After the destruction of many of the villages on the Plateau during the Second Indochina War, most of the monasteries were not restored. Recently, however, Buddhism has come to represent progress and modernization for many villagers living in remote parts of the country. Buddhism is now associated with ‘modern’ Lao culture, that is the dominant culture of the lowlands.

There is a monastery in Ban Oudomsouk where a dozen novices and monks now reside. They are constantly called out to villages to perform cremation rituals and for merit-making ceremonies. The results of the PRA survey reveal that many villages requested a temple for their new village. This shows a desire to identify with the dominant lowland culture. This does not mean, however, that Buddhism will replace traditional spirit beliefs and practices. All over Southeast Asia, Buddhism coexists with other religious forms such that there is ample place in the cosmos for a monastery for Buddhist monks, a shrine for the territorial spirits, huts for visiting spirits and a spirit post for the spirits of the house.

⁴Phi mau are nameless spirits associated with a particular family. Spirits of recently deceased family members are remembered by name or called phi phaumae, literally spirits of father and mother. The Lao word mau is also used to denote ritual specialists, such as mau basi or mau phii, and the connection can be that both the ritual specialists and the spirits can assist people in obtaining divine intervention.

⁵ A possible explanation for this phenomenon is that the spirits are associated with the spirit post in the house, the post that often has a shelf for offerings of food. It may be that all posts in the house have become associated with spirits over time, and thus the prohibition of hanging a net or hammering a nail into posts has developed. This could not be confirmed by villagers.

4.3.6 Life Cycle Rituals

A brief examination of life cycle rituals reveals a number of similarities among the ethnic groups on the Nakai Plateau with only slight differences in rituals, beliefs and practices. This is due to the fact that there is a melting pot culture on the Plateau and considerable borrowing and sharing of ritual experts, techniques and cosmology.

Birthing

In all villages and across all ethnic groups, the majority of women give birth in their homes or the homes of their parents or in-laws with the assistance of traditional midwives and women experienced in childbirth. Ritual specialists (male and female) are called in cases of emergencies to make offerings to house spirits. All groups practice a period of recovery called 'lying by the fire' (*yuu fai* or *kam fai*). This involves a limited diet (rice, salt and in some cases certain roasted meats), sitting by a fire and sweating throughout the day, drinking copious amounts of boiled water with the medicinal bark of certain trees such as *mai daeng* and regular baths in this water. The time spent at the fire varies but at least 15 days for the first child is normal and subsequently less for other children. The general condition of the mother and child also determines the length of stay since it is unusual for the period of *yuu fai* to be terminated if both are not healthy. *Yuu fai* is a common practice throughout all of Southeast Asia and beyond, hence there are only variations between the main ethnic groups in Lao PDR, such as the number of days and whether or not there is a ritual bath after this period of seclusion. It is clear that Lao and Tai influences and practices regarding birthing have influenced Vietic and Bo groups.

Marriage

The family structures for all ethnic groups on the Plateau may be characterized for the most part as patrilineal and virilocal (CARE Report 1996; Sparkes 1997). Like many groups in Southeast Asia, however, there is considerable variation, which depends on practical aspects relating to location, relative wealth of families and available resources. Recording life histories and changes from one generation to another revealed that it was not uncommon for villagers to build several houses in different locations. It also indicated a high separation rate and no prohibition on remarrying for either men or women.

A number of marriage (*dong*) types involve changing household allegiance. Below is an account of the number of marriage types with comments on how different ethnic groups share these aspects.

Dong tan (patrilocal) involves a large feast and ideally sacrificing a buffalo, and offering up to 16 chickens, 16 jars of lao hai, two pigs and a gift of traditional money (ngeun fak).⁶ At the end of the ritual the bride leaves her parents' house and comes under the protection of the spirits of her husband. Many marriages never reach this stage since it requires a considerable investment. One example of how long this takes was a 55 year old man who had been married for nearly thirty years and who had just recently performed the *dong tan*. This explains why many men reside in their wives' household or in their wives' villages despite the ideal of virilocality. The Vietic groups of Sop Hia have a special variation on this type of marriage which is called *dong pasum* which prescribes that bamboo tubes be filled with fermented fish and then broken to be eaten by the relatives from both sides after being offered to the spirits of the brides' house. This type of marriage form is the preferred type among all ethnic groups but not the usual practice among the lowland Lao.

Dong sukhat (matrilocal) appears to be the opposite of *dong pan* since the man moves into the woman's household and remains there. He is "cut off" (*khat*) from his own family and accepted into his wife's with all the rights and privileges it entails. He can inherit property and there are no taboos usually associated with a new arrival such as entering through the same doorway as his mother-in-law. This type of marriage appears to be a form of adoption of a man who will lead a household, possibly when there are no heirs or mature men living there at the time. It is also a way for younger sons to establish themselves as household heads quickly. This seems quite common in some of the Brou villages (Ban Done had ten examples) but is form among all groups and is often due to the fact that some households have only daughters or a choice of the parents to reside with or in the vicinity of a daughter in their old age. In addition, some may move to other villages or off the Plateau in search of work and marriage partners.

⁶Ngeun fak is a traditional type of money exchanged at wedding throughout Laos and by different ethnic groups. The money is made of silver (80% or more) and shaped like a shallow canoe.

Dong phaksuk (temporarily matriloc or uxoriocal) is the most common type of marriage among the Brou and Bo. The groom comes to live in the house of the bride and works for her household. It involves a payment of two jars of alcohol (*lao hai*) and two fowls as brideprice. The ancestors of the bride are informed of his presence and he thus comes under their protection. There are less elaborate versions of this ritual and among the Ahoie it is called *dong saubon*. Eventually, the couple may relocate back to the husband's village or build a house in the vicinity of the wife's parents.

Dong yann is a type of liminal stage in which the couple leaves the woman's parents' house and sets up their own household right away without a marriage ceremony. They are obliged to make the proper offerings to the woman's spirits within three years and perform a full ceremony called *dong tan*, which results in patrilocal residence. The reasons given for this type of marriage is a lack of resources to perform ceremonies immediately. This is a common strategy for poor Bo households.

Dong pan is a type of staged elopement. A small ritual is performed informing the spirits of the bond and the woman moves right away into the man's household. This kind of marriage probably occurs mostly when the woman comes from a poor family and cannot claim the usual brideprice. The woman's parents relinquishes control over their daughter without proper payment. A few examples exist among all ethnic groups, mostly involving poor households.

Dong lat resembles kidnapping, but, as is the case in many Southeast Asian cultures, it is a staged kidnapping. There were examples in some villages of younger men kidnapping women for elder men. An amount of cash is left behind. This may be a face-saving gesture for families who cannot afford a proper marriage or wealthy families forcing poorer ones to give up their daughters without proper payment. A few examples exist among all ethnic groups, mostly involving poor households.

The majority of households contain nuclear families of one generation but it is usual for one child to stay with their aged parents to look after them, either in the parental house or in a separate house in the same compound area. There is no social support from the State and kinship is the only social net available in time of sickness or in times of need to farmers. If all children have moved out of the village, a grandchild is often sent back to care for an elderly couple.

The variations in marriage types are probably due to the amount of different ethnic groups which have coexisted on the Plateau and pragmatic considerations such as the availability of resources. In all villages there are several of the above mentioned marriage types and as a result there is a constant change in household composition. In almost every household, however, there should be an able-bodied man and woman if the household is to function properly.

Among all groups courting is common and young men and women decide themselves who their marriage partners will be. Parents need to approve but rarely refuse. Among the *Lao Loum* groups there is bride price (*kebaa dong*) and a basi ceremony conducted by a priest. Post-marital residence is always matrilineal, at least initially among the Lao. Some Bo families in the roadside villages have also started to perform basi ceremonies for marriage.

Illness

Although there are government and private clinics and dispensaries in Nakai Town and in a few of the larger villages, there are also local practitioners and a belief that illnesses may have both natural (biological) and supernatural causes. All groups have local practitioners called *maw* (term is used by all ethnic groups⁷) who are responsible for conducting elaborate basi ceremonies or simply tying the wrists of ill villagers in order to hinder their spirit from leaving the weakened body. The use of traditional herbs is also prevalent with considerable borrowing amongst all groups. One should distinguish between local knowledge in the form of using natural ingredients such as plants, herbs, animal parts and other items combined with spells or chants and the influence of Buddhist priests, for the most part local men who have spent time in lowland monasteries and learnt rituals. The former is shared knowledge among the community while the latter is often guarded and secretive knowledge of specialists. The priests are responsible for conducting larger and more elaborate ceremonies, such as calling on the spirits to provide a bounteous harvest.

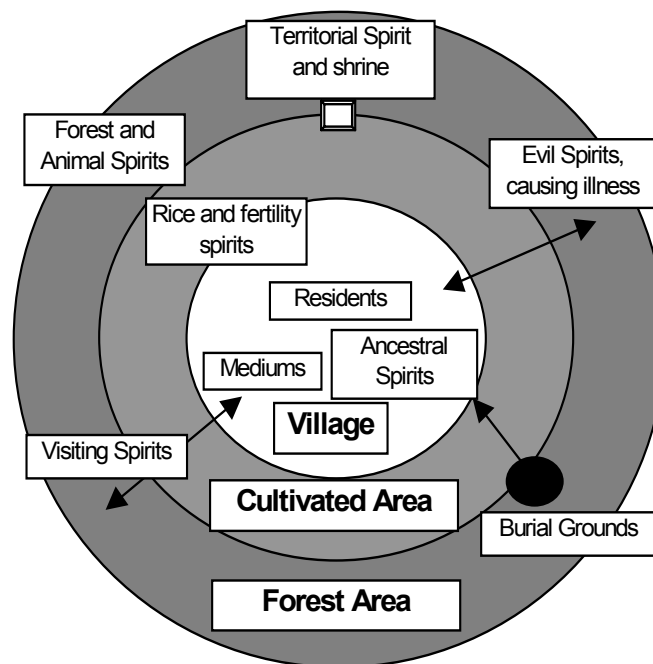
⁷ Vietic and Brou groups have borrowed the Lao and Tai word, mau, for ritual specialists on the Plateau. Among the Tri adae is also used by the elderly, and among the Sek tet is also referred to. Tet refers to a cultural borrowing from Vietnam and the New Year's celebrations of the same name. There are only a few Tri and Sek households on the Plateau.

Death

Traditionally, many groups in SE Asia buried their dead. It is only through the influence of Buddhism that cremation has become the norm among many ethnic groups in the region. For the indigenous *Lao Theung* groups, burial was the norm. Nowadays, monks conduct cremation rituals not only for the Lao and Phou Tai groups but also many *Lao Theung* groups, chanting Buddhist texts and purifying the living. The Brou, Bo and some Vietic groups combine elements of Buddhism and spirit traditions. This includes the juxtaposition of offerings to ancestral and territorial spirits as well as to the monks, buffalo sacrifices together with Buddhist purification chants, and ordinations followed by a feast with alcohol and raw meat. In some cases, there is another ritual (up to three years after the cremation) called *jek khao*, a kind of second burial that re-introduces the spirit back into the community as a benevolent ancestral spirit that watches over the living.

The figure below is a visual representation of the cosmos for the ethnic groups on the Nakai Plateau.

Figure 4-3: Basic Cosmological Aspects of Nakai Plateau Ethnic Groups



4.3.7 Moving the Cosmos

The different ethnic groups on the Plateau have frequently changed village sites either of their own volition or because of war, involuntary resettlement or epidemics. There are, therefore, mechanisms for relocating the village and rituals for appeasing the spirits in order to facilitate such a move. After conducting many interviews with ritual specialists, it can be concluded that it will not be difficult to move the cosmos to new village sites if proper procedures are followed. Furthermore, allowing for this would have positive consequence for the resettlement as a whole. It would reduce the psychological stress which is often expressed in 'grieving for a lost home' or the anxiety about an unfamiliar relationship with unseen powers (cf. Scudder and Colson 1982).

Examples of correct procedures resemble regular rituals in many ways: food, alcohol and decorations made of banana leaves and flowers are offered and the spirit is informed of the proposed move in the case of all ethnic groups. According to the medium of Ban Sop On, the territorial spirit should be given a full explanation of why the village is to move. This parallels other occasions when spirits are informed when there have been a number of strange events or accidents or when the rains are late. What is important to note is that the welfare of the villagers is in the interests of the spirits (ancestral or territorial) and vice versa. 'If the village needs to be relocated because of inundation and will acquire better housing and improved infrastructure, the *phi muang* is sure to see the sense of that', explained the medium.

In the case of villagers being relocated outside the traditional spiritual territory, such as might be the case with Ban Ka Oy and Sop Hia, if the people decide to relocate on the opposite side of the river, several things may happen. If the area is uninhabited and a fair distance from the ritual centre of another territorial spirit, the village may be able to move the spirit and re-establish it as a *phi muang* with a new territory intact. If the village is located near another village, it may abandon its own spirit and seek the protection of the spirit whose territory it now occupies such as was the case for all the villages under Ban Sop On's territorial spirit. There are also cases of lands being split between villages and founder spirits like in the example of Ban Done being created from land given by Ban Ka Oy and Ban Khone Khen. There are probably more variations.

What is important is that villagers are consulted and given ample time to prepare for the move so that the proper rituals may be conducted. It is important that a consensus be reached within the village and under the direction of village elders who often have a double role of guardians of tradition (*thao khun*) and founding fathers (related to the spirit of a particular founder). The power and influence of these territorial spirits 'manifest' themselves over time in the way the village prospers and the health of the inhabitants. However, since these spirit territories have a practical dimension in relation to access to land and resources, there may arise claims by several villages over a particular territorial demarcation in the resettlement area. Traditional conflict resolution consists of the elders of each village discussing the matter and coming to a mutually acceptable solution. This may involve ritual obligations and fees/payments/rent by one group to the other.

4.3.8 Moving Houses

The following is a list of house rituals which all ethnic groups practice in one form or another when building and moving into a new house. Again the differences between the groups should be noted during the preparations for the resettlement but this outline contains elements from all the ethnic minorities on the Plateau and will give an idea of what kind of rituals are involved in the process of relocation.

Choosing the Site: The choosing of the site involves divination (*sieng*) that is receiving a message of approval from the spirits. Ritual specialists may employ a piece of bamboo cut in two which is tossed into the air. If the two halves land upright or facing down it is auspicious to build a house on the site. If the two halves are of opposite values, it is inauspicious (common practice for Brou and Bo). Another common method is placing grains of uncooked rice on either an egg or at the base of a candle. If the grains have not fallen off by the next morning, the spirits approve of the choice of site (common for Tai ethnic groups).

Construction of Houses: Construction of the house (*phuk heun*), or at least the frame, is a joint effort involving relatives and other villagers. It is an occasion for a village celebration and feast in which the women cook a meal and the men all pitch in to erect the structure. This is done on an auspicious day according to charts of the months and old texts in the possession of village elders, usually with training in a monastery. Once the day is decided upon, construction begins at midnight and continues for the whole day until there is enough of the house erected to live in. If there is not enough time, another auspicious day is selected. This is an ideal scenario and there is significant deviation from it since the construction of bamboo huts is a simple affair with a small ceremony but large structures may be erected over a period of many months or even years. A ceremony may involve only the raising of the first two important posts, *sao jeh* and *sao khwan*.

Moving In: Moving into a new house (*keun heun mai*) involves a recreation of a journey and invitation to stay (*kae hii*). In many cases the roles of fictitious previous inhabitants of the house are played by a village elder (usually male) and the male household head wanders around the house before asking if he could enter to rest. In some cases (among the Ahoe) the elder cries out for help in putting out the fire. The new inhabitant enters after receiving permission and hammers a nail to the post on which he hangs his belongings. This establishes him as the owner and the rest of the family member may then enter. There is also a calling of the house spirits (*phi heun*) to inform them that their descendants have moved into a new house and that they should protect and look after the interests of the living. Afterwards strings are tied around the wrists of the new occupants by the elders and all those present (*mat meu*). There are shorter variations of this ritual. The three families at the Theun Duane Demonstration Farm stated that all that is needed is a feast the night before and calling of the spirits and tying wrists.

These rituals or aspects have been incorporated into the resettlement planning so far as part of the pilot village relocation. They have helped villagers feel at ease relocating their homes and it shows that planners take the villagers' worldview seriously and are concerned about how they settle in. It is important to remember that the member of all ethnic groups will not feel psychologically at ease if they are not under the protection of their spirits. This approach has resulted in a relatively smooth relocation and positive feedback from the villagers themselves and will continue.

These and other rituals have been discussed with village elders in an attempt to see how they may be adapted to the resettlement of villages on the Nakai Plateau. There was considerable flexibility and a willingness to make compromises considering how houses and villages could be moved.

4.3.9 Cultural Heritage

There are no known archaeological or historical sites in the area to be flooded by the NT2 reservoir (no findings have been recorded in any of the anthropological and sociological surveys conducted to date). No evidence of prehistoric human habitation; no stone implements or other indications of Paleolithic or Neolithic habitation have been found. Due to the mobility of the population on the Plateau and the disruption caused by war and invasion, there are very few structures and sites of cultural importance. The only items that have been identified are several monasteries constructed of wood in Ban Done and Ban Boua Ma, stupas made of stone or concrete and gravesites.

In the case of village monasteries and stupas, adequate measures will be taken for their transportation to new village sites or for new buildings of at least a similar value to be constructed. Stupas and other religious structures such as spirit houses (simple structures made of bamboo and thatch) for village spirits (*phi muang*, *phi thiem* and *phi mau*) will be moved by the villagers themselves since they will have the required knowledge of local rituals and procedures for moving such objects. Making adjustments to schedules such as the selection of an auspicious day for commencing the relocation would contribute to the well being of the villagers during relocation.

Concerning gravesites, measures will be taken to avoid locating villagers too close by for fear of spirits. Although many villagers exclaimed that this did not matter, the fact is that if certain inauspicious or inexplicable events occur, villagers may attribute them to an offended spirit at the new site. Given the possible disorientation that may temporarily occur during resettlement, villagers may be more prone to make such associations. Hence avoiding gravesites would avoid such problems. Gravesites that will be flooded by the reservoir did not seem to trouble people, but this is difficult to gauge from interviews. There seemed, however, no need to conduct rituals to transport spirits of deceased relatives since they reside in the house not at the gravesites. However, for recently deceased family members removal of urns containing ashes, stupas and appropriate ritual will be needed.

NTPC has indicated that it would co-operate with the Ministry of Culture and Information so that appropriate protective and/or salvage measures will be adopted if any archaeologically significant properties are uncovered during the construction activities. These may consist of old Buddha statues or religious objects from previous monasteries or shrines in the area. The Concession Agreement outlines contractual obligations regarding the minimization of potential impacts on cultural items during construction and as a result of inundation, including monitoring, visibly marking items, consultations with GOL if items are discovered and full compensation or replacement (see CA, Schedule 4, Part 1 and 2, 'Protection of archaeological heritage').

A detail archeological studying will be completed in 2004 to verify these assumptions that are based on the anthropological and social surveys. This will include archaeological digs and a systematic collection of data from the Nakai Plateau.

4.4 HEALTH STATUS

4.4.1 General Health Status

The following health surveys were carried out on the Nakai Plateau:

- i. Health surveys carried out by the University of Chiang Mai (Pholsena 1997) in 1994-96;
- ii. Health surveys conducted by John Storey (1997);
- iii. Health surveys conducted by RMU (2002);

- iv. Health Impact Assessment and Public Health Action Plan (see Volume 1, Chapter 5);
- v. Initial and ongoing studies by the Traditional Medicine Research Centre.

These surveys and reports along with observations and discussions with villagers as part of formal consultations and informal visits, form the basis for the health analysis.

The major public health problems in the project area are similar to those found in the nearby rural communities of adjacent provinces with a similar level of development. The Nakai Plateau is in fact fairly representative of public health problems occurring in the country as a whole as indicated in Table 4-11. The ongoing Government/WHO/UNICEF expanded program of immunization (EPI program) is addressing major childhood diseases (measles, diphtheria, whooping cough, polio and TB) in the country.

Table 4-11: Leading Causes of Mortality in Lao PDR in the mid 1990s (Kobayashi et al., 2004)

| Cause of Death | Mortality rate (per 100,000) |
|----------------|------------------------------|
| Malaria | 7.62 |
| Pneumonia | 3.03 |
| Meningitis | 1.45 |
| Diarrhoea | 1.23 |
| Tuberculosis | 0.75 |
| Accidents | 0.51 |

4.4.2 Diseases Endemic to the Nakai Plateau

The communicable diseases most commonly reported by health institutions in the project area are diarrhoea, acute respiratory infections (ARI) and malaria. Accidents associated with swidden-type agricultural practices, such as serious cuts and wounds form nearly 10 percent of all reported health problems and make an important demand on healthcare supplies and facilities in the area as reported by the 2002 Health Survey of the Nakai Plateau. Health assessments of Ban Nakai Neua in 2001 and Ban Nongbua, Sailom and Pamanton (hamlets that formed the pilot village) in 2001 indicate that there are high rates of parasites (up to 90%) and low rates of Malaria and TB.

A table summarising reported symptoms by those experiencing acute illness on the Nakai Plateau is presented in Chapter 5 (Table 5-28).

Malaria

Malaria is the most potentially life-threatening of the three communicable diseases mentioned in the above table. In Lao PDR, 97 percent of all cases of malaria are due to *Plasmodium falciparum*. *Plasmodium falciparum* is the species that can develop multi-drug resistance to standard drugs, can also cause cerebral malaria and is always potentially life-threatening (Souliya 1996). The diagnosis of malaria cases in the project area, apart from at Thakhek hospital, is largely based on clinical symptoms and about 52 percent of all in-patients and 27 percent of all out-patients are due to malaria (GOL/WHO, 1996).

The second most common malaria species, *P. vivax*, has not yet been reported as being resistant to chloroquine anywhere in the country. It will be noted that malaria cases were not reported from Nakai District until 1993 when well over 70 per cent of all patients were positive for malaria. This exceptionally high number cannot be explained, especially as it has declined in the years following. It may well be that residents of the Plateau have since had greater access to anti-malaria drugs.

The malaria transmission season on both the Nakai Plateau probably occurs year round, although with the highest prevalence from May to early July, and again from October to early November, on account of temperature and rainfall patterns which influence mosquito breeding. There may be epidemiological variations between the Plateau and the river valleys and in irrigated areas with a different time sequence and transmission pattern emerging. Although the colder weather on the Nakai Plateau may affect transmission, and may favor *P. vivax*, it is not unusual in other similar situations, for transmission to take place inside the warmth and protection of the house.

Recent initiatives on the Nakai Plateau to reduce the incidence of malaria have been extremely successful. This EU-sponsored malaria programme resulted in only 10 reported cases of malaria in 2001 of 571 blood samples taken. Only six people required hospitalisation for the disease and there were no reported deaths. This dramatic reduction in malaria is primarily due to the distribution of mosquito nets. A study carried out by the Ministry of Health (2001) reported that only 4% of the population of the three pilot hamlets that have been moved to the new village site of Nong Boua tested positive.

Diarrhoea

Diarrhoea due to bacteriological contamination of water and food is probably more common in the hot, humid period of the year. Infections of the upper respiratory tract (coughs, colds and runny nose) and acute respiratory infections (ARI) are at their peak during the cold season both on the Plateau and in the valleys, especially among younger children. It should also be noted that the transmission season for diarrhoeal infections could be expected to be prolonged in areas where irrigation either exists now or in those areas where it will be introduced due to larger surface water areas. This is not a problem at present due to a lack of irrigation on the Nakai Plateau.

Other diseases endemic to the project area are: Opisthorchiasis caused by a trematode worm and contracted by the wide-spread practice in the lowlands of eating raw fish often as conserved paste; large roundworm (*Ascaris lumbricoides*) which is transmitted through contaminated food; hook worm (contracted by walking barefoot); whipworm (*Trichuris trichuria*) and tapeworm. Diseases which are present in Lao PDR but which are not at the moment present in the project area include dengue fever and schistosomiasis.

4.4.3 Nutritional and Reproductive Health Problems

The general nutritional situation on the Plateau is poor. The staple is glutinous rice which provides most of the calorie intake. Fish is the most important source of protein and various green leafy vegetables, fruits and forest plants provide vitamins. Fruit trees are relatively rare in some villages (central Plateau area). The planned vegetable gardens and fruit trees in the resettlement plan will be a positive supplement to a poor diet. Women are usually responsible for vegetable gardens and food preparation and more information is needed to improve families' diets. Improving the diet of children is perhaps the most important preventative means against disease in Southeast Asia (FAO 1995).

Drinking water is not usually boiled. Villagers fetch water directly from the Nam Theun or Nam On or streams nearby. There is little understanding of the potential health problems and the primary concern is that the water appears clear, that is without sediment. In some cases, water is boiled with various barks and leaves resembling tea was served but this is the practice only during the cold winter months. It was also confirmed that there were only a few isolated examples of eating raw fish that can transmit opisthorchiasis. It is possible that lowlanders from Ban Nikhom 3 introduced it to the area but a few families keep jars of fermented fish (*paa daek*) stored in their kitchens.

A particular problem which relates to both health and nutrition is postpartum recovery practices called *yuu fai*, which means 'lying by the fire'. Women are confined for a period of 7-15 days during which they drink medicinal water, usually made from boiling the bark of trees and plants, and sweat profusely. They start to eat dried food (roasted fish, chicken and frogs), rice and salt after a few days. Efforts should be made to modify the diet, by encouraging women to eat more nutritious food containing vitamins during this period, while still continuing the tradition that relates to purifying the body and re-establishing a balance of elements in it.

There are midwives (*mae sadam* or *mae kep*) in all villages and in a few villages traditional healers (*mau yao*). The former have a limited knowledge about delivery and postnatal care but cannot deal with serious or complicated cases. Since most of these midwives are elderly, they would not be suitable to be trained as paramedics. Many healers have no apprentices and few practice on a regular basis. It seems that the introduction of medicines, even though on a limited scale, has weakened peoples' beliefs in traditional healing practices.

4.4.4 Health Facilities on the Nakai Plateau and Vicinity

Health facilities in Nakai consist of one District Hospital, five health centres and one malaria control station. The health centres can be characterised as frequently incompletely staffed and poorly stocked with

essential drugs. Most villages have a designated Village Health Volunteer (VHV), but the volunteer seldom has the necessary medicines and most need technical strengthening.

Adjoining Nakai District there are other District Hospitals and health centres that are only slightly better in terms of resources and staff. The nearest Provincial Hospital is in Thakhek for serious medical problems and operations. A total of one Provincial Hospital, nine District Hospitals and eighty-nine Health Centers in Khammouane Province serve a total population of 331,044 (LECS2 1999) as show in Table 4-12. Health personnel available within the province and in four districts are outlined in Table 4-13. The ratio of medical personnel to population within Khammouane Province is shown on Table 4-14. This ratio of population to medical staff is considered very high.

Table 4-12: Health Facilities in Khammouane Province and in Project Area Districts (2001)

| Health Facility | Nakai District | Mahaxai District | Gnommalat District | Khammouane Province |
|-------------------------|----------------|------------------|--------------------|---------------------|
| General Hospital | 0 | 0 | 0 | 1 |
| District Hospital | 1 | 1 | 1 | 9 |
| Health Center | 5 | 4 | 5 | 59 |
| Malaria Station | 1 | 1 | 1 | 10 |
| Total Health Facilities | 7 | 6 | 7 | 79 |

(Khammouane Province Health Dept. 2001)

Table 4-13: Medical Personnel in Khammouane Province and in Project Area Districts (2001)

| Title | Nakai District | Mahaxai District | Gnommalat District | Khammouane Province |
|---------------------------|----------------|------------------|--------------------|---------------------|
| Medical doctor | 2 | 2 | 1 | 69 |
| Asst. doctors | 7 | 6 | 6 | 185 |
| Nurse Practitioners | 13 | 26 | 21 | 467 |
| Asst. Dentist | 0 | 1 | 0 | 5 |
| Pharmacist | 0 | 0 | 0 | 9 |
| Dispensers | 3 | 3 | 3 | 5 |
| Nurse Auxiliaries | 3 | 3 | 2 | 45 |
| Laboratory Technician | 0 | 0 | 0 | 5 |
| Malaria control personnel | 2 | 1 | 3 | 12 |

(Khammouane Province Health Dept. 2001)

Table 4-14: Ratio of Medical Personnel to Population in Khammouane Province (2001)*

| Title | Ratio (Staff to People) |
|---------------------------|-------------------------|
| Medical doctor | 1:4,798 |
| Assistant doctor | 1:1,789 |
| Nurse practitioner | 1:709 |
| Assistant dentist | 1:66,209 |
| Pharmacist | 1:36,783 |
| Dispenser | 1:62,209 |
| Nurse Auxiliaries | 1:7,357 |
| Laboratory Technician | 1:62,209 |
| Malaria control personnel | 1:27,587 |

*Ratios based on Khammouane Province Health Dept. 2001 for medical data and LECS2 1999 for population data

4.5 TRADITIONAL HEALTH PRACTICES

Most villagers on the Nakai Plateau make extensive use of traditional health practices in addition to bio-medicine which is becoming more and more readily available. Various ethnic groups have different concepts of health and disease, but at least in the villages visited in the preliminary investigation (September 2004) most information had shared fundamental concepts that are found throughout South East Asia. The Tai-Lao worldview is dominant in many regions, including Lao PDR.

This indigenous health consists of three basic medical categories with corresponding practitioners:

- Natural disease stems from exposure to noxious natural elements
- Losing a soul or *khwan*
- Intervention of *phi* (spirits, corpse or evil spirits)

4.5.1 Traditional Causes of Disease and Traditional Health Specialists

The *mô tammyae* or traditional midwife assists in uncomplicated childbirth mainly by pushing on the abdomen at the right time. She (usually a female but not always) will cut the cord with a sharp piece of bamboo. At times she can move a breech into a head-down position before actual labour starts. Nowadays the Ministry of Health trains “Traditional Birth Attendants”. If they are literate, these experienced midwives are invited to join. Where a *Mô tammyae* isn’t available the husband or a knowledgeable family member will take on this role.

After giving birth, a new mother traditionally is kept indoors for some 3 (Hmong) to 30 (Tai Lao) days. During this period her diet is restricted to items, such as salty rice, white chicken or duck meat and rattan leaves. She drinks copious amounts of hot medicinal tea which supposedly helps the uterus shrink, the breasts to fill and the body to wash out toxic substances. Various plants or barks are used for this purpose. While thus secluded in the house, she and her baby sit near a glowing fire and receive one visitor after another. At daily or weekly intervals she is made to sweat visibly, by lying on a bamboo bed standing over red-hot charcoal. This domestic ritual is called “*yu fa*” (to sit by the fire). It draws on the medicinal knowledge of a *mô ya* (*ya* = poison or medicine, that is ‘body-changing’ substance).

Herbal, mineral or animal ingredients can all serve to cure illness of natural origin. Most households know and use at least the more common medicinal plants. But a *mô ya*’s pharmacopoeia is vastly more elaborate. Buddhist monks and medical researchers have again codified, systematised and expanded on this. One practice is called *ya hóm* (scented medicine) and refers to steam saturated with herbal essences. It can be inhaled or may soak a patient’s whole body. A piece of wet cloth of varying sizes is used to confine this sauna-like function.

A ‘bonesetter’ priest or *mô pao* (priest that blows spells – usually male) heals broken bones by blowing (*pao*) over them. Over closed fractures he first rubs powder of a secret root, chews a medicinal leaf, blows slowly over the breakage and mumbles his magical formulae (*món*). Such powerful blowing and words are said to heal any body part or to prevent successive infant deaths. It is an active principle carried by the formula that heals, like an herbal essence would. In the domestic sphere, blowing over a fontanel or a painful spot are also common reactions for consoling parents. And almost anyone in the region knows how to better muscle or tendon pain by kneading and rubbing. Often one can see child feet carefully working their parent’s hurting back or waist.

In order to prevent natural disorder, parents protect their offspring from dust, dirt, sun, rains, winds, insects and rotting matter. They try providing healthy elements like water, food, vitamins, rest and merit. Certainly weak persons such as *dek daeng* (child red= infants), pregnant women and the elderly need this kind of care. In Laos the Government has broadcast such advice in a campaign called the “three cleans” - food, dress and houses.

Loss of Souls

Every human being holds some 32 *khwan* or souls, one for each organ or body part. Airplanes, trucks, cars, houses, drums, elephants, buffaloes, tigers and rice also have *khwan*. *Khwan* are described as ‘fickle as children’ or ‘fearful as chickens’. Fright, curiosity, playfulness and benign or malicious attacks can all make them leave the body they are part of. The number of souls departed is evident in the severity of the resultant malaise.

This concept commands a set of taboos and prevention measures. An infant is not taken near a corpse. The dead person's spirit or *phi* idles about there until cremation. An infant (a pregnant woman, an elderly or sickly person) should stay out of fields or forests. House and village spirits cannot protect it there. At home, parents all know how to "tie the wrists" (*mat kben*) of their children to steady their fickle *khwan*. This is an abridged version of the well-known "*baci*" or "*sou khwan*" ceremony visitors to Lao all get to know at some time. A Moh Khwan would usually be a man having spent time at a Buddhist temple. But e.g. to repair some misdemeanour a mother can perform it for a victim neighbour child. Moh Khwan are normally female with the Tai Dam.

Rites of passage in Tai groups always include a *sou khwan*. This happens after *yu fai*, as part of a boy's ordination or by way of traditional marriage. *Sou khwan* means "to unite", i.e. the *khwan* with the body they care for. But *sout khwan* means 'to pray', i.e. the lost *khwan* to return to base. A *mô khwan* prevents; a *mô sout* cures. *Sou khwan* is called for when people get separated from loved ones. As after studies abroad, after a long journey or when a family member dies. Surprises, accidents, operations and conflicts make *khwan* flee too.

Whether to *sou* or to *sout*, and varying somewhat with occasion, group or location, the ceremony's structure remains the same. First an auspicious time and place is decided. The *mô khwan* and numerous guests arrive about that time, and find a *pha khwan* already prepared. This "tray to feed the *khwan*" carries a chalice containing dry rice. Stuck in the grains are elaborate flower pieces, varied incense sticks and candles plus a few branches holding a bundle of white cotton 20cm threads. A long string of cotton lies rolled up next to this centrepiece. Other plates on the tray contain a boiled egg, sticky rice, some bananas, sweets, flowers, a bottle of alcohol plus perhaps a boiled chicken, betel nuts and leaves. The *mô khwan* takes place opposite the person to be celebrated, with the *pha khwan* between them. Guests sit behind and often touch the attendant's (and each other's) elbow during the ceremony's prayers. All have their legs folded sideways in sitting on the floor mats.

The candles are lit. The *mô* greets and may call on (Buddhist) divinities for assistance. The cotton rope is unwound to span the whole congregation; it specifically encircles attendant and officiator. Its ends are tied between the centrepiece flowers. Now the *mô* calls for the *khwan* themselves. His words try to convince or to seduce them to keep or to return to protecting their proper owner. The litanies last variably long. At the end the *khwan* are thought indeed to have united or returned. Now the *mô khwan* ties the first pair of white cotton strings around each wrist of the ceremony's beneficiary. In doing so, he murmurs wishes for prosperity and good health. He deposits some of the offerings to the *khwan* in the hand he's tying. Other guests now come tie the attendant's wrists as well. All wish her well and propose other things to eat from the tray. When both wrists are tied with all available threads, the ceremony terminates with a collective meal for all those present.

Spirit Affliction

Disrespected house spirits (*phi huan*) may whisk away a descendant's *khwan*, resulting in malaise or worse. A corpse carried inside the village gates may unleash epidemics. Disrespected village spirits (*phi ban*) in their anger then allow the restless ghost to catch the *khwan* of another villager. This person then dies too and its own ghost will do the same again, and on and on. This shows why Tai peoples so honour their domain spirits. These after all are their normally protective ancestors.

But more malicious *phi* lurk further away, in the fields, rivers, forests and cemeteries. Those who died a violent or unnatural death (by abortion, poison, suicide, accident, murder or in labour) are particularly vicious. If someone strays too far from their *phi ban*'s cover, or even actually disturbs those savage *phi* (pricking a stick in the sand, throwing a stone in a pond, cutting a tree uninvited may be all it takes) severe disease ensues. Not only did most of the *khwan* flee, but the enraged *phi* has now actually entered that person's body (*phi pop*).

Diseases caused by familiar *phi* are less grave or more chronic. People seek to placate, not to frighten these spirits. This they do by offering them their favourite dish, e.g. chicken, duck, goat, pig, cow or buffalo. Diviners or *mô yao* find out what exactly it is an angry/hungry *phi* wants to smell (just the odour suffices the *phi*). A common divination technique is to scoop a handful of rice and to count the grains. A pair result means 'yes', no pair is 'no'. More popular is trying to stand an egg or knife on edge. Others drop rice grains on an egg, counting the number of those left on top. Only if all answers are negative ("Are you

the phi huan? Are you the phi huay?") the *mô yao* decides that the disease is natural and should therefore be treated with herbs or drugs. But if the answer is yes (and several *phi* may be involved, each craving different foods), and the goal of rituals is to make offerings to satisfy the spirit and to exorcise the spirit from the person with the help of the *mô môn*.

Without active help from healers, parents can ward off the *phi* by respecting the taboos on corpses or on the way guests may move or stay inside their house. Some ethnic groups use marks to protect children against ghosts. Most of the time, regular offerings to one's house spirits suffice to keep supernatural illness at bay. Village spirits, however, require an expert to be attended to. Once a year, in front of the sacred Village Hall (*bô ban*) a public ritual involves the *phi ban*. It is conducted by a medium called a *mô thiem* (priest for visiting spirits – male or female).

4.5.2 Traditional Health Practices on the Nakai Plateau

Most villagers are familiar with a range of medicinal plants, often for tea and sometimes for steam baths. Most can perform simple massage (*yieb*), the knowledge of which is transmitted over generations. After birth, all mothers practice *yu fai*. Usually it is the husband who maintains the fire, finds the herbs and prepares the teas. Guests here do not share in drinking the tea, unlike Tai Lao custom prescribes in lowland areas.

The Tai Bo of Nakai Tai do not carry their infants to the field. By contrast, when they need to work their plots the Makong will mark a infant's forehead with soot. This tells a greedy *phi* that the child already has an owner and should be left alone. Just before returning home again, the mother will usually call after her baby's *khwan* so that it will not stay behind.

In general, people state that either gender can perform simple domestic rituals. *Mô khwan* or *Mô sout* are all men though since they learn spells while residing in a temple. Nakai Tai villagers said "We are modern now, we're already used to having a male TBA since hospital gynaecologists are mostly male too. Our women are not as ashamed as before". But all observe the taboos related to corpses, avoided by children under five or pregnant women, and prohibited from being carried into the village. Everyone also knows how to tie wrists. Herbalists are mostly men because few women are literate since remedies are often written down. A *Mô sout* should have spent time at the monastery, is therefore normally male.

A crucial decision for many attending a patient is whether to undertake spiritual action before, after or in parallel with bio-medicine. Makong women in Nong Boua, for example, appear to favour modern medicine in this regard. On the first day of fever paracetamol is given, on day two a blood test is taken and on day three they may make a trip to the local clinic at Nakai. A *mô yao* comes only when death seems imminent. Elsewhere though, certainly among the elder and the illiterate, many call the *mô yao* on day 2 or 3. At Nong Boua Kham one counts grains of rice staying on an egg but at .Done one tries to stand the egg on a coin. The *mô thiem* treats questions related to their whole community's well being. On the Plateau however, several *mô thiem* use possession by way of divination like Hmong shamans.

4.5.3 Indigenous Health Ingredients

Types of Ingredients

In order to compare what present day Nakai indigenous medicine contains by way of medicinal ingredients, following is a brief overview of types of elements:

- Inert substances of minerals (bright coloured minerals and soils) and liquids and solids that can cause transformations, such as water, acid, etc.
- Inert substances of animal origin, such as milk
- Excrement of newborn mammals, lizards and insects, and urine
- Body parts of animals, such as bear gallbladder, livers horns, teeth, bones, shells, skin
- Parts of aquatic animals, such as bones, shells and body parts of fish, molluscs, crabs, etc.
- Plant species (200 medicinal plant species and over 1000 are listed in 200 medicinal plant species in neighbouring Gnommalath, and Bualapha Districts)

Many of these ingredients are rare (endangered and rare animals) or from remote areas (shells from the ocean) and this seems to increase their value and 'magical' or transformational properties.

Nakai Ingredients

There are a limited number of herbalists and traditional health practitioners on the Nakai Plateau. One practitioner from Done uses the following combinations:

- A piece of stalactite left to infuse in rainwater to cure high fever;
- Salt and sugar with water for the treatments of diarrhoea (similar to oral re-hydration practices);
- Bones of flying squirrels to treat kidney stones, skin to treat burns and penis for boosting vigour in men – also civets, tiger and gibbon parts used for vigour;
- 100 plants for various complaints were recognised from existing records.

4.5.4 Changes in Indigenous Practices

Choices in Health Treatment on the Plateau

People in Nakai Tai claim that most now prefer biomedical drugs to traditional herbal remedy. This change has occurred since the NT2 Project provided them with a 26-item Drug Revolving Fund (DRF) in 2000. The preference seems to have spread to all people, regardless of economic status and gender. Only the elderly still prefer first consulting with the spirits using a *mô yao*. Younger people would rather borrow money for pills than to pick herbs for treatment.

Ban Nong Boua villagers continue to use medicinal plants. Brou women in Nong Boua exemplified the most modern attitude to cure. A feverish toddler is given paracetamol on day one, gets a blood check on day two and might return to sleep at the hospital as of day three. This usually means getting an intravenous drip, known to be effective. Before, in the old village, caretakers started with herbs until someone returned two hours later with pills. Both sorts were then given jointly; without fear for conflict between them. In fact, health-seeking behaviour generally relies on trial and error until cure or death. Initially, symptoms are given up to 48 hours to abate, before a new remedy or health provider is sought. In roadside villages, this often means just changing the antibiotic. In remote ones natural, biomedical and spiritual means alternate or combine in increasingly rapid succession to ward off imminent death. Since the last traditional practitioner died at the previous Nong Boua site, no one has taken on this role.

In Ban Done severity of presenting symptoms (high fever, abdominal pains, seizures) decides whether to start with herbs or drugs.. Conveniently, the District Hospital is a mere 40 minutes ride away (at 5000 kp/p) and prevention items like impregnated bed nets are now bought from the District Health Office for 8500kip, against 30.000 when sold in the market. In Ban Done biomedicine was introduced in 2000 and the drug fund has kept revolving thanks to rules strictly applied by the health worker. Drugs work fast, work most of the time, are easy to purchase, easily swallowed and include contraceptives. Diagnosis seems more reliable. But they are not free, must be bought from afar, often give side effects, and steadily lose quality. If used wrongly, they're outright dangerous. Yet on the whole people trust biomedicine more (a disease may "*return*" following poor drug regime compliance – and anything, including herbs, will cure a viral 3d fever). Herbal cure takes longer to surface, and only does so half of the time.

A shared view exists on what herbs and drugs have going for or against them. Herbs are free and always somewhere at hand. They show fewer side effects than medicines. Remarkably people find that "when herbs heal, they do it well and the disease doesn't return". But preparing an herbal concoction may take up to 48 hours (if e.g.7 ingredients are all found at distant spots) and isn't often pleasant to swallow. In addition, few people know enough about formulas and locations to collect a reasonably potent remedy. Not all villages have their herbalist.

A way of preserving tradition officially endorsed by the Ministry of Health is to include industrial as well as natural formulations in revolving drug kits. Conversely, training herbalists to administer a DRF seems quite acceptable. Such a person could decide faster when to change remedies, and one needn't locate a second person to avail of both functions. If of course s/he were absent, one again would wish for decoupled skills! Certainly a Traditional Birth Attendant, possibly even a *mô môn* might usefully add drug therapy to their trade. The main criterion for these responsibilities was felt to be literacy and intelligence, not age or experience. Having the educated work with the experienced was called optimal.

Modernizing Medicine on the Plateau

There was no problem in acquiring the Tai Lao names for common herbs. The Ban Done herbalist doesn't know Brou names for the plants he uses. Though over 60 he doesn't speak the language himself. This is also true for Nong Boua residents, one resident reporting: "but we willingly trade our tradition and customs for those of the Lao", referring to the change from burial to cremation. This process of assimilation and integration of culture seems at work in the domain of medicinal knowledge too. Most herbal doctors are disappearing without successors ("*Pou nom khi khaan bien, khi khaan khalam*" – young people don't bother with study or discipline) which means that the compendium of medicinal wisdom is being lost: "Ancient *mó yao* knew what time of the day, the week or the moon to take what part of a plant. We here just go and get what we need and know enough about." In Nong Boua elders could still cite therapeutic indications, but younger people mostly knew but the names of common medicinal plants.

As ancient practices are phased out, modern ways are phased in. The young and educated are the first to take pills. Once introduced the practice seems to spread quickly. *Ya luang* (great medicine) works well and fast, and is promoted by the Ministry. Though Nong Boua's leader thinks an intelligent *mó yao* might make a good health worker, he doubts a spirit conversely would think of possessing a health worker to call her into divining. Thus the trend becomes irreversible. Differing opinion among the leaders and young population and the elders and remaining practitioners exist in many villages. Not all are satisfied with hospital treatment and many complain about the costs of medicine. It is likely that both medical systems will coexist on the Plateau for some time to come even though some traditional practices are disappearing.

4.6 EDUCATION STATUS

Information on the education status of the ethnic minorities on the Nakai Plateau can be obtained by combining literacy levels and school attendance statistics on the one hand and by visiting and assessing the conditions and functioning of educational facilities on the other (see Table 4-15). The education levels of village leaders are important in assessing the capacity of local authorities to tackle the upcoming challenges of resettlement and livelihood development (see Table 4-16). In addition, knowledge of the Lao language is important when considering the consultation process.

4.6.1 Literacy

From the various surveys carried out on the Nakai Plateau and from participatory observations made in the area, one can conclude that only a small percentage of villagers were literate in the Lao language. None of the minority languages of the Plateau are written down. Except for a few women, mostly located in Ban Oudomsouk, roadside villages and recent arrivals from lowland areas, the majority of women are illiterate. Some young women and girls who have had some basic schooling (village primary schools) exhibited varying degrees of literacy. Literacy levels for men appear to be only slightly higher due to a number of factors: boys tend to go to school for longer periods of time and have opportunities to acquire literacy from the monkhood and educational institutions outside the region. In addition, many laborers and recent male migrants are literate. Several village leaders were originally from the lowlands, showing that literacy can lead to positions of influence and power in the village. Table 4-15 shows that 63% of the population of the Nakai Plateau never attended school. One can also assume that most of the population with only primary school, which is the majority of those that did attend any school, are probably functionally illiterate if they have not been using their writing and reading skills regularly during adolescence and adulthood.

Table 4-15: Educational Levels and Literacy on the Nakai Plateau (all affected people)

| Education Level | No. of People | % of Population |
|----------------------|---------------|-----------------|
| Primary School 1-5 | 1526 | 31% |
| Secondary School 1-4 | 214 | 4% |
| High School 1-3 | 43 | 1% |
| College | 8 | 0% |
| Institute | 5 | 0% |
| University | 7 | 0% |
| Semester/Master | 1 | 0% |
| Others | 9 | 0% |
| No Schooling | 3076 | 63% |
| Total: | 4889 | 100% |

(1998 Census Data used)

Table 4-16: Education Level of Household Head on the Nakai Plateau

| Education Level (head of household) | No. of HH | % of HH |
|--|-----------|---------|
| Primary School 1 | 24 | 3% |
| Primary School 2 | 115 | 13% |
| Primary School 3 | 84 | 9% |
| Primary School 4 | 34 | 4% |
| Primary School 5 | 101 | 11% |
| Secondary School 1 | 11 | 1% |
| Secondary School 2 | 8 | 1% |
| Secondary School 3 | 47 | 5% |
| Secondary School 4 | 0 | 0% |
| High School 1 | 1 | 0% |
| High School 2 | 2 | 0% |
| High School 3 | 21 | 2% |
| College | 6 | 1% |
| Institute | 2 | 0% |
| University | 3 | 0% |
| Semester/Master | 1 | 0% |
| Others | 2 | 0% |
| No Schooling | 423 | 48% |
| No Response | 1 | 0% |
| Total | 886 | 100% |

4.6.2 Lao Language Proficiency

Table 4-17 on the following page records the level of understanding, speaking, reading and writing Lao of all the ethnic minorities in the villages on the Nakai Plateau. As is expected in a melting-pot culture, there is a *lingua franca* among all the different languages groups, in this case, it is the national language of the country. It should be pointed out, though, that the dialect of Lao spoken on the Nakai Plateau (in most cases, Tai Bo) is only slightly different in terms of vocabulary and tones, and is mutually understandable for lowland Lao-speakers (see Table 12-5).

Only six/five adults were recorded as having a poor understanding of the Lao language or poor speaking skills in Lao. The overwhelming majority of the ethnic minorities categorised their own skills in the Lao language as good or satisfactory. Most ethnic groups on the Plateau, nearly all children under the age of 10, have Lao or a Lao/Tai dialect as their mother tongue and little or no knowledge of Brou or Vietic languages. The Brou language was spoken by only a handful of households as the main language of communication in the domestic sphere, with the exception of Kaenggnao and Boua Ma where most seem to know Brou, and most Vietic families still used Ahoe and Phông as languages of daily interaction. Hence, it is a mistake to associate the knowledge of an ethnic language, such as Brou or Ahoe, with an ethnic group on the Plateau since most now speak only Lao or a dialect of Lao (Tai Bo). It is quite feasible that in 20-25 years there will be no ethnic minority languages spoken on the Nakai Plateau except between elders.

An independent review of the language situation on the Plateau (Enfield, Jan 2004 - Max Planck Institute) reports that:

- There do not appear to be qualitative differences in economic livelihood between villagers of different ethnicities
- Language is not necessarily a defining criterion of ethnicity
- The Plateau is a site of intense language contact, and villagers are exposed to a number of different languages in daily life
- The process of ethnic minority language loss appears to be in advanced stages in most villages

However, the report also notes that attitudes to language loss vary from group to group. Many Brou stated that they did not regret the loss of their original language. The Vietic of Sop Hia, on the other hand, were conscious of the importance of their language and cultural identity. All Ahoe in this village, including children, speak Ahoe as well as Lao and other language.

Table 4-17: Lao Language Proficiency on the Nakai Plateau

| Village | Understanding Lao | | | | | | Speaking Lao | | | | | | Reading Lao | | | | | | Writing Lao | | | | | |
|--------------|-------------------|-------|------|----|------|---|--------------|-------|------|----|------|---|-------------|----|------|-----|------|-----|-------------|----|------|-----|------|-----|
| | Good | | Fair | | Poor | | Good | | Fair | | Poor | | Good | | Fair | | Poor | | Good | | Fair | | Poor | |
| | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F |
| Khonekhen | 33 | 34 | 1 | 8 | | | 32 | 35 | 3 | 6 | | | 8 | 2 | 9 | 2 | 16 | 9 | 4 | | 13 | 2 | 16 | 41 |
| Done | 96 | 106 | | | | | 96 | 104 | | 2 | | | 18 | 4 | 30 | 10 | 45 | 95 | 17 | 4 | 31 | 10 | 46 | 94 |
| SopOn | 65 | 73 | 2 | 1 | | | 67 | 73 | | 1 | | | 16 | 2 | 13 | 8 | 34 | 68 | 12 | 1 | 16 | 8 | 35 | 69 |
| Bouama | 56 | 57 | 1 | 4 | | | 57 | 57 | | 4 | | | 2 | | 26 | 7 | 28 | 55 | | | 25 | 6 | 30 | 57 |
| KaOy | 21 | 22 | | | | 1 | 21 | 22 | | | | 1 | 4 | | 6 | 2 | 10 | 21 | 2 | | 8 | 2 | 10 | 21 |
| Phonesavang | 21 | 18 | 7 | 7 | | 1 | 17 | 12 | 10 | 14 | | 1 | 5 | | 5 | 1 | 15 | 28 | 1 | | 7 | | 17 | 29 |
| Nongbouakham | 40 | 38 | | | | | 40 | 38 | | | | | 7 | 3 | 20 | 9 | 12 | 29 | 7 | 3 | 20 | 9 | 12 | 27 |
| Hatkhampane | 15 | 15 | | 1 | | | 15 | 15 | | 1 | | | | | 7 | 1 | 8 | 15 | | | 7 | 1 | 8 | 15 |
| Kaengngao | 10 | 5 | 10 | 19 | 1 | | 10 | 4 | 10 | 20 | 1 | | | | 6 | 1 | 15 | 23 | | | 6 | 1 | 15 | 23 |
| Sopphen | 45 | 45 | | 3 | | | 45 | 43 | 1 | 4 | | | 3 | 1 | 14 | 2 | 27 | 46 | 3 | 1 | 14 | 2 | 27 | 46 |
| Sopma | 16 | 18 | 1 | | | | 15 | 16 | 2 | 2 | | | | | 4 | | 12 | 19 | | | 4 | | 12 | 19 |
| Nakaitai | 142 | 163 | 6 | 4 | | 2 | 144 | 164 | 4 | 4 | | 1 | 16 | 3 | 33 | 7 | 95 | 163 | 16 | 2 | 33 | 8 | 97 | 163 |
| Nakaiueua | 61 | 72 | | 3 | | | 61 | 72 | | 3 | | | 15 | 2 | 25 | 21 | 19 | 534 | 14 | 1 | 26 | 22 | 19 | 54 |
| Thalang | 48 | 52 | | 1 | | | 48 | 53 | | | | | 11 | 3 | 15 | 10 | 22 | 40 | 11 | 2 | 15 | 11 | 22 | 40 |
| Oudomsouk | 201 | 216 | 1 | | | | 201 | 217 | | | | | 133 | 68 | 36 | 37 | 32 | 110 | 133 | 66 | 35 | 34 | 32 | 118 |
| Phonphanpek | 75 | 85 | | | | 1 | 75 | 85 | | | | 1 | 19 | 4 | 31 | 14 | 25 | 67 | 19 | 4 | 30 | 14 | 25 | 67 |
| Sophia | 48 | 53 | 1 | | | | 49 | 53 | | | | | 6 | 1 | 14 | 6 | 29 | 46 | 6 | 1 | 14 | 5 | 29 | 47 |
| Namnian | 24 | 25 | 1 | | | | 25 | 25 | | | | | 10 | 1 | 5 | 5 | 11 | 18 | 10 | 1 | 5 | 5 | 11 | 18 |
| Nongboua | 23 | 25 | 2 | 1 | | | 25 | 25 | | | | | 4 | 1 | 7 | 4 | 13 | 22 | 3 | 1 | 7 | 4 | 14 | 22 |
| Averages | 1,025 | 1,107 | 33 | 51 | 1 | 5 | 1,028 | 1,098 | 30 | 60 | 1 | 4 | 277 | 95 | 299 | 146 | 460 | 943 | 258 | 87 | 309 | 143 | 469 | 955 |

4.6.3 Education Facilities

In many of the villages on the Nakai Plateau, schools are not functioning properly. Either attendance was low due to the need to gather NTFPs or plant rice (every able-bodied pair of hands is sometimes needed) or teachers were not regularly conducting classes. During surveys, teachers who should have been conducting classes were often found at home, much to their embarrassment.

The incentive for performing one's duty is not great since the District only pays 30,000 Kip per month (approximately USD \$ 30 in 1997). Some schools were financed by the villagers themselves since the local government had neither the funds nor could it provide for teachers. Due to the bad flooding in 1996, many families could not pay the fees to the teachers.⁸ Villagers understand the importance of education but have little means of obtaining an education for their children. The exceptions are the large school in Ban Oudomsouk and the roadside village of Ban Nakai Neua. In theory each village (often shared in the case of small hamlets) should have its own primary school. However, only primary schools in large villages like Ban Done, Ban Boua Ma, Ban Nakai Tai and Ban Thalung were functioning properly. In many of the villages schools had not been functioning at all for several years.

The national curriculum is in the Lao language. For most ethnic minorities (Brou and Bo) on the Plateau this does not pose a problem since their mother tongue is Lao. However, there are some children who have a minority language (Brou or Ahoe) as a mother tongue. Studies have reported that without consideration of ethnic languages (ADB 2001 – Health and Education Needs) ethnic minority children may become disadvantaged and drop out of school. Recruitment of local teachers that speak local languages will be one important way of addressing this issue.

4.7 GENDER ISSUES

Since the 1980s, improving the status of women has become an increasingly important aspect of development projects. This is because it was felt that previously women's labour was not always transferred to the market and that men benefited more directly in the first stages of a transition from a subsistence to a market-oriented economy. WB OD 4.30 states that women should be considered as a "vulnerable group" in addition to considerations of ethnic minorities in WB OD 4.20. The ADB has a policy on gender and development that outlines programmes and initiatives.

The division of labor between men and women is by no means absolute but there are clear notions of what is male work and what is female work among all the ethnic groups. Men, however, were frequently seen taking care of young children and doing domestic tasks while women could do all kinds of work in the fields if necessary. Villagers often exclaim that "men and women do the same work". But upon further inquiry, there were some definite concepts of the division of labor. One common expression was phusay sak phuying nam, which translates as "men make the hole in the ground using a pole, women place the rice seed in the hole". This appears to be a co-operative work effort at first glance but it also symbolizes the superior position of men in these societies: the man goes first and stands upright, the woman follows behind and has to bend over.

Table 4-18 lists the most common tasks and responsibilities which men and women perform and some of the tasks often shared. The PRA map-making sessions, carried out as part of planning resettlement (Sparkes 1997), also highlighted this division of labor and the inter-dependency of men and women in the establishment of a functioning household unit.

The division of labour as outlined in the above table is representative for all ethnic groups on the Plateau. This is due in part to a shared production system and similar access to natural resources. In addition, no religious taboos or restrictions on either men or women doing certain types of work were recorded.

⁸ A similar phenomenon is recorded in the Theun Hinboun region. Many villages had organised their own classes with a local person who could read and write as a teacher. Nominal fees collected from the families made up the teacher's salary.

Table 4-18: The Division of Labour

| Male work | Shared Tasks | Female Work |
|--|---|--|
| <ul style="list-style-type: none"> • heavy work in the fields such as removing large trees and cutting down trees • contact with officials and government representatives • overnight trips to markets in towns • work with machines, motor boats and driving vehicles • carpentry, blacksmith, boat-making, house-building and other tasks involving specialized tools • formal positions of authority in the village • herding buffalo and cattle • fishing with nets and hunting and trapping | <ul style="list-style-type: none"> • weeding, clearing the fields, planting and harvesting • collecting food in the forest and along streams and NTFPs for sale • fetching drinking water from the river⁹ | <ul style="list-style-type: none"> • most of the household tasks such as cleaning, washing clothes and preparing all the meals • pounding rice twice a day • looking after young children, the sick and the infirm • taking care of domestic animals in the house area (pigs, chickens and ducks) • taking care of the vegetable gardens near the house • selling vegetables and forest products in the nearby markets |

However, there are some differences between the ethnic groups in relation to male and female behaviour and gender roles. The most noticeable difference is that Vietic groups and some Brou communities that have settled relatively recently on the Nakai Plateau from the NBCA, tend to have more restrictions governing female behaviour, including access to rooms, commensality and interactions with male relatives. Addressing these differences between the groups and ensuring that women also benefit from the Project can best be achieved through gender-segregated consultations and specific measures (see Section 26.5.1).

The recent Gender Report on NT2 (Iram June 2004) examined the roles of men and women in the various communities on the Plateau and the potential impacts and mitigation measures. In terms of workload for women in particular, it will be important to monitor changes in the livelihood system and introduction of market economics to a greater degree.

4.8 RELATIONS WITH NON-NAKAI PLATEAU GROUPS

Interactions between the inhabitants of the Nakai Plateau and other peoples are common. Although the region is only slowly being integrated into the national economy, contact with other groups has been ongoing for centuries as illustrated above in Section 12.2.2. It is worth noting the different types of contact as well as former and existing trends:

Transferral of cultural beliefs, notably the spread of Buddhism and lowland cultural practices. Some men acquired their education in monasteries in the lowland areas and returned as learned men and religious practitioners. The spread of Buddhism has varied depending on relationship between the state and Buddhism. In the twentieth century, a form of Buddhism that was mixed with local beliefs existed on the Plateau with irregular contact with monasteries to the south. Since 1975 there has been a decline in Buddhist activities until quite recently when a small monastery was re-established in Ban Oudomsouk.

Changing livelihood patterns are evidence of continuous contact with groups inside and outside of the region. Groups such as the Brou and Sek have influenced the Vietic population in that the latter now practices sedentary agriculture and to a large extent have similar livelihood systems. The recently arrived Tai groups in the northern parts of the Plateau have also adapted their livelihood system to suit the ecological niche - swidden instead of their traditional paddy production. Recent attempts by the

⁹ Men and women fetch water whenever they bathe, but women do so for all domestic uses including cooking, clearing and washing in addition.

government (Nikhom 3) and different ethnic groups at introducing wet rice paddy have not been successful in most cases, due to agro-ecology rather than ethnic reasons.

Trade in livestock illustrates contact with other groups surrounding the Plateau. Firstly, buffalo from the lowland areas were previously given to villagers on the Nakai Plateau for grazing since there was limited pasture in the lowland areas of Gnommalath and Mahaxai Districts. Buffalo were traded both in the lowland areas of Thakhek District and over the mountains in Vietnam. Several trade routes were well established for these purposes and Brou and Vietic groups used their kinship and clan ties to maintain these economic links, but this does not seem to be evident today.

Trade in NTFPs and wildlife reveals a similar arrangement of economic and social ties that are mutually supportive. The rich resources of forest were much sort after commodities in other parts. Ethnic groups hunted, fished and collected a variety of NTFPs for sale to middlemen from the lowland areas, Ban Lak Sao, Thailand and Vietnam. Items were often bartered for rice, salt and manufactured goods. This trade and the trade in livestock resulted in the introduction of many items produced in other areas as well as essential food supplies and goods.

Marriage between groups outside the Plateau is common as is highlighted in Section 12.2.3 above. A number of partners, both male and female, come from areas surrounding the Plateau, including the Brou and Lao communities in the Gnommalat and Mahaxai Districts, the Vietic groups in the catchment area, Lao immigrants from all over the country (former members of Nikhom 3) and even some Tai groups from the Ban Lak Sao area. There are no strict rules with the possible exception of the Tai groups, and there is considerable movement between regions for work, hunting and gathering and trading. Inter-marriages are one of the many reasons for the ‘melting pot’ designation that describes the similarities between the ethnic groups on the Plateau (cf. Section 12.2).

Disturbances during Second Indochina War (ca. 1962-1975) have resulted in involuntary resettlement, village relocations and a refugee situation. Some groups were relocated in areas to the south of the Plateau due to fighting, including some Vietic groups. The children of these groups attended Lao schools and these people were exposed to Lao culture and customs. There was considerable movement of people from and to the Plateau and the catchment area throughout the war, resulting in further mixing, re-composition of villages and exposure to different cultures. In addition, many able-bodied men joined the army, a multi-ethnic organization.

Lao Nation State and dominant lowland Lao values have been influencing all of the cultures on the Plateau. The establishment of the new District Capital at Ban Oudomsouk has increased the number of Lao professionals, traders and service industry workers. Education in Lao and the economic, social and political influence of the dominant lowland Lao is significant on all cultures on the Plateau.

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