

## The use of Non-Timber Forest Products in Lao PDR.

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***Abstract:** Rapid Rural Appraisal (RRA) techniques were developed to study the use of NTFP's in 28 villages in Lao PDR. Main use of NTFP's is for subsistence: bamboo-shoots, fish, vegetables, wildlife are considered by local people as the most important products from the forest. Women tend to collect more plant food products, men more animal products. NTFP's also provide on average 55% of family cash income. Both wealthy and poor families collect NTFP's such as cardamom (*Amomum spp.*), fish, wildlife, damar resin (from *Shorea spp.*) and bamboo-shoots to sell. Poorer families who often need cash to buy rice depend often on NTFP's as their only source of cash income. The quantities and prices of exported NTFP's from Lao PDR have increased dramatically in the last 3 years. Typical export products are (1) cardamom, (2) damar resin, (3) sugar palm fruits (*Arenga saccharifera*), (4) bong bark (*Notaphoebe umbelliflora*), (5) broom-grass (*Thysanolaema maxima*), (6) orchids stems (mainly *Dendrobium spp.*), (7) rattan canes (*Calamus spp.*), (8) paper mulberry bark (*Broussonetia papyrifera*), (9) dried lizards (*Gekko spp.*), (10) yang oil, an oleoresin tapped from *Dipterocarpus alatus* and (11) malva nuts (*Sterculia lychnophora*).*

*The main issues threatening the sustainable use of NTFP's are the general state of poverty among rural people, rapid deforestation, market pressure from outsiders, unstable prices, difficult transport, lack of processing capacity, lack of access to information, uncertainty on forest access rights giving little incentives for communities to manage forests. The project pursues a participatory planning process (PRA) with user groups in pilot villages to design and carry out village-level experiments on planting NTFP's as a cash crop, sustainable harvesting, processing/quality control, marketing, land allocation and community based forest management. Research on specific topics (e.g. role of NTFP's in nutrition, gender analysis, feasibility studies for processing/marketing), training of staff/user groups and monitoring and evaluation are continuing to feed into the on-going PRA process.*

### 1 Introduction

This paper presents the main findings of one year's participatory research on the use of Non Timber Forest Products (NTFP's) in Lao PDR. This work was done as part of the activities of the NTFP Project, a five year project executed by IUCN and the Department of Forestry, with support from the Royal Netherlands Government. The aim of the project is to identify the present use of NTFP's in Lao PDR and to promote the sustainable use of NTFP's for rural development and forest conservation. It is an integrated conservation and development project (ICDP) which undertakes to test three major assumptions:

1. Alleviating poverty increases the interest and capacity for resource conservation (economic development approach);
2. Making alternative products or livelihoods available reduces the impact on natural resources (alternative livelihood approach);
3. Involving local people in the planning and management of natural resources and in the sharing of benefits increases the likelihood that these people will implement conservation initiatives (participatory planning approach).

The project aims to do collaborative work with villagers that can be used to test these assumptions. We hope to develop models for supporting the sustainable use of NTFP's in the Lao PDR by conducting base line surveys, training local people, doing collaborative trials on planting, processing, quality control, marketing and community based forest management.

The project has three field teams based in the Provinces of Oudomxai, Salavan and Champasak. In each location, Rapid Rural Appraisal work was from January 1996 to February 1997. An additional study was done on the Nakai plateau in March 1997. This paper draws on the results of four data sets from each of these locations. The aim of this RRA work was:

1. to provide basic information to select pilot villages and pilot products;
2. to identify the key sustainability issues;
3. to prepare for a participatory planning process (PRA).

## **2 RRA methods**

The main methods used by the field teams belong to what has commonly become known as Rapid Rural Appraisal (RRA) methods. RRA methods provide relevant information timely and more cost-effectively than conventional questionnaire surveys. Local knowledge has great validity for rural development planning. RRA methods make this knowledge available to outsiders and allows local people to be involved in project planning, using their own terminology (NTFP Project, 1996). In this study, the following RRA tools were used:

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|---|--|
| 1 building rapport  | 6 ranking of income and expenditure                        |
| 2 semi-structured interviews<br>with key informants, cross checking | 7 wealth ranking   |
| 3 structured group meetings   | 8 forest walks, rapid forest inventories                   |
| 4 participatory group sketch mapping                                | 9 simple family interview questionnaires                   |
| 5 listing and ranking of NTFP’s                                     | 10 collecting market information from<br>secondary sources |

### **2.1 Building rapport**

Good RRA work depends heavily on appropriate behaviour and attitude of project staff. Such behaviour includes:

- building rapport with men and women, rich and poor, young and old, etc.;
- being friendly, interested, culturally sensitive, relaxed, open;
- listening and probing;
- taking advantage of local events rather than staging events and activities;
- engaging in conversations that have a two way exchange of information;
- being patient but proceeding at moderate pace;
- seeking views of weaker, less powerful groups;
- sharing information;
- learning from people, not lecturing;
- being nice to people, and avoid placing them in situations in which they feel uncomfortable;
- giving people time to communicate and consider ideas;
- scheduling RRA activities so that they fit in with seasonal and daily routines of people.

Another essential point of our method was to stay overnight in the village. This not only allowed us to do most of our group activities when most people were available, i.e. in the evening, but it also gave us an opportunity to build rapport. Also we could catch up with people in the morning before they went to their fields. Staying in the village also allowed us to calibrate local product measures.

### **2.2 Semi-structured interviews with key informants, cross-checking**

At our first entry into the district or into a village, we would interview the district authorities or the village headman. Such interviews would also create an understanding of the nature of our task and provide us with preliminary data on NTFP use. These data are often useful to cross-check with data derived from other methods. The technique of a semi-structured interview includes preparing a checklist of questions beforehand, using open-ended questions that seek explanation rather than a yes or a no answer. For example we would rather ask “where do you collect NTFP’s?” rather than “do you collect NTFP’s from the protected forest?”. This technique was also used for interviewing local traders in NTFP’s.

### **2.3 Structured group meetings**

A lot of RRA work was done in structured group meeting, usually in the evenings, when people have time to join. During such meetings we would build rapport, do sketch mapping, listing and ranking of NTFP’s, income/expenditure ranking, wealth ranking. These meetings require a good facilitator. In each village, we worked with groups of men and women separately to allow different roles, knowledge and opinions to become visible. In mixed groups, women do not always have an opportunity to make themselves heard.

### **2.4 Participatory sketch mapping**

We asked men and women separately to draw participatory maps of their village and surrounding collection area’s. People could choose to use either local material such as sand, sticks, stones, or paper and markers, provided by the project, to draw maps. This activity was usually our starter activity, because it creates a fun atmosphere and allowed many persons to participate. These maps would show where the most important village land use areas were, what products would be collected from each of them. Such information is a good starting point for further data gathering.

### **2.5 Listing and ranking of NTFP’s**

Separate groups of men and women were asked to write down which NTFP’s were used by them and to rank them according to priority. The listing of NTFP’s often creates long lists of products. Criteria used and discussed by villagers for ranking NTFP’s are: importance as a food resource, income source, or other inputs to the household. The NTFP’s would be written down by a group member who could write. Little drawings would sometimes be added for the benefit of those members who could not read. Ranking was done by assigning numbers of pebbles or tamarind seeds to each identified NTFP.

### **2.6 Ranking of income and expenditure**

In a similar way to ranking of NTFP’s, we asked men and women separately to list and rank their household income sources and categories of expenditures, to get an estimate of the relative importance of income derived from NTFP’s, compared to livestock sales and other sources of cash income.

### **2.7 Wealth ranking**

The technique of wealth ranking is a quick method to find out in which way rich and poor households differ and to assess the relative wealth status of each household (Grandin, 1988). It consists of writing all the names of each family on separate small cards, and subsequently asking informants to place these cards in piles according to the relative wealth of each family. Results are recorded in a list of names. Informants are then asked to describe the characteristics of each group and these wealth criteria are also recorded. This process is repeated several times and in the end an average rank from all lists is calculated for each family. The resulting list of families may then be divided into new categories, according to natural breaks, at least as many as in the list with the smallest number of categories. This results in a breakdown of the village into groups from wealthy to poor, which can be used for subsequent sampling.

### **2.8 Simple family interview questionnaires**

Following the stratification of families in wealth categories through wealth ranking, a sample of 5-10 families from each category was randomly selected for a family interview, on average 20-25 families per village. A simple questionnaire was designed on the spot, using information previously gathered on main sources of income and main NTFP’s used. The questions were aimed at quantifying income sources, rice economy and the use of NTFP’s for each family. Data were recorded in field notebooks. On average half an hour was needed per family.

### **2.9 Forest walks, rapid forest inventories**

A small group of villagers would be asked to show the team some of the important areas for collecting NTFP’s by making a forest walk. During these walks, villagers would be asked to show the team useful products encountered along the trail. The team would also stop at relevant places and make a rapid forest inventory, checking forest characteristics that can be observed easily such as main tree species, soil cover and crown cover, density of key species, tree sizes, villagers observations on occurrence of NTFP’s, size of the area, local name etc.

### **2.10 Collection of market data from secondary sources**

The main source of marketing information were the records of the Provincial Trade and Forestry Departments. We also interviewed local traders and export companies, also on Thai side of the border.

### 3 Main NTFP’s of Lao PDR

#### 3.1 Villager’s listing of NTFP’s

Villagers can easily enumerate large numbers of products collected from the forest. So far we have recorded 507 species of NTFP’s mentioned by villagers as being used (see Annex 1). This number is continuously growing as we continue to gather data. The biggest diversity of species is found among plant food products, animal food products and ornamental plants (mainly orchids). Some key species will be briefly presented in the next paragraphs.

#### 3.2 Main products for local use

*Bamboo and rattan shoots*, cooked or eaten raw, are the most important side dish to rice on the daily menu. Common bamboo species eaten for their shoots, (“no mai”), are “nolai”, *Gigantochloa albociliata*, “mai phai pa”, *Bambusa arundinaria*, “mai sang phai”, *Bambusa nana* and “mai bong” (*Bambusa tulda*). Two common rattan species for shoots (“nyod vai”) are “nyeh” (*Calamus* sp.) “boun” (*Daemonorops schmidtiana*), a medium sized rattan, and “san” (*Raphis* sp.) a small palm tree.

*Fish and other water animals* like frogs, shrimps, soft-shelled turtles, crabs and molluscs are probably the most important source of protein in the diet in most of Lao PDR. There are too many species to mention.

*Wildlife* is a more important source of protein than livestock for most rural people in Lao PDR. Some 31 mammal species, 24 bird species and 13 reptile species were recorded as regularly eaten (see appendix 1). During our fieldwork, freshly hunted animals were regularly offered for sale to the team: we saw junglefowl (*Gallus gallus*), mousedeer (*Tragulus javanicus*), red squirrels (*Calliosciurus finlaysoni*), brown hornbill (*Ptilolaemus tickelii*).

*Vegetables*: Some 40 types of leaves from trees, shrubs and herbs are eaten fresh or cooked. These are commonly referred to as “phak”. *Tubers*, “man”, “koy” (*Dioscorea* spp.) are eaten as a substitute for rice in times of hunger. *Mushrooms*, “hed” are important in the rainy season. Various *flowers*, “dok” and *forest fruits* “mak” are also gathered and eaten.

*Bamboos* “mai” and *rattan* “vai” are widely used for house construction and to produce fishing gear and baskets. Most commonly used bamboo species are: “mai hia” (*Cephalostachyum virgatum*), “mai sod”, (*Oxythenthera parvifolia*), “mai bong” (*Bambusa tulda*), “mai phai” (*Bambusa blumeana*), “mai kasen” (*Neuhouzea mekkhongensis*). Among the rattans, “vai hang nou” (*Calamus javanensis*), “vai boun” (*Daemonorops schmidtiana*) are most commonly mentioned. Vai thoun (*Calamus* sp.) is also exported to Vietnam.

*Pandan*, “toei” (*Pandanus* sp.) is commonly used to make mats. Various *vines* are used to make ropes, e.g “po piet” (*Pueraria phaseoloides*) is used by the Khamu ethnic group to make their fine wide mazed shoulder bags.

#### 3.3 NTFP’s collected for sale

Some of subsistence products mentioned above are also provide an important income from sales, e.g. fish, wildlife and bamboo shoots. There are also products that are mainly collected for sale. These fall mainly into four categories: plant exudates (kisi, po heuang), medicinal plants (cardamom, kheua hem, hak tin houg), spices/condiments (mak phep, mak khene, no kha) and tree barks (bong, chouang, po sa).

Wild *cardamom* (*Amomum* sp.) grows abundantly in disturbed forest on wetter locations. It is also planted in Champasak and parts of Salavan Province. Its fruits, harvested in October, are sold to China where it is used in the preparation of various medicines. The price was 3,000 kip/kg in 1996.

“*Kheua hem*”, *Coscinium usitatum*, is a vine which produces the medicine “berberine”, which is very effective against stomach problems. It is an effective drug against amoeba and various intestinal bacteria. The medicine is popular in Vietnam and Laos. The vines sell for 10 kip/kg.

“*Hak tin houg*” is the root of a small fern, *Helminthostachys zeylanica*, which grows on wet places near bamboos. It is a popular medicine in China. Price: 3,000 kip/kg. “*Bialai*” are small plants with delicately striped or spotted leaves believed to a medicine. The name is used for orchids of *Paphiopedilum* spp. in the South and for *Sansevieria* spp. In the north.

“*Kisi*” resin, also called damar in trade, is produced by a dipterocarp tree, “mai si” (several *Shorea* spp.). It is collected from the forest floor after it falls from the tree. This product is exported mainly to Vietnam and

Thailand, from where its likely to be reexported.. “Yang oil”, the oleoresin from Dipterocarpus alatus is a liquid resin, used as an ingredient for high quality varnishes and as a non-alcohol base in perfume production for Arabic countries. Almost all of the Lao product is exported to India through Thailand. Lao benzoin, “nyan”, an exudate from Styrax tonkinensis, is mainly exported to France where it is used as base product in the manufacturing of perfumes.

Eaglewood, “mai dam” or “mai ketsana” or “po heuang” is a rare scented wood, produced in small quantities in the heartwood of Aquilaria crassna after incisive damage by insects, bullets, etc. Only a small percentage of the trees of this species contain these intrusions and the actual process of their formation is not yet fully understood. It is very looked after in the Arab countries, as well as China and Japan and fetches a very high price. On the Nakai plateau it is sold for 7,000-16,000 kip/kg.

The bark of “bong” trees (Notaphoebe umbelliflora) is collected and sold to Thailand where it is used to make joss sticks and incense. Current harvesting pressure is rapidly depleting present stands. The trees are reported to recover well from stumps, but would take 4-5 years to regrow. The price is 60-100 kip/kg. “Saphan” or “Peuak meuak”, (Debregeasia hypoleuca) has a bark containing a gum which is used in China to produce glue.

“Pheuak chouang”, the bark of Cinnamomum spp., is known as “false” cinnamon or “kassia” and used as a spice. Price 60 kip/kg. “No kha” is the rootstock of wild Alpinia spp., also called “galangal”, used a common spice throughout Southeast Asia. The price is 400 kip/kg. “Sakhan”, the bark of a Piper sp. is a popular spice in Northern Laos and Northern Thailand, just as “Mak khene”, the fruit of Zanthoxylum rhetsa, is a spice resembling pepper, (price 400 kip/kg).

“Mak tao”, the fruit of a small sugar palm tree in the forest, Arenca saccharifera, is a popular ingredient in “Khanom wan”, sweet desserts in Thailand and Laos. “Mak kham phep” is the fruit of Dialium indum, also known as tamarind plum.

“Khem”, Thysanolaema maxima, is a grass used to make brooms and exported in large quantities to Thailand. Paper mulberry, “po sa”, Broussonetia papyrifera, is a small tree which traditionally has been used for producing paper in China, Japan and Laos. The price is 150 kip/kg.

#### 4 The role of NTFP’s in the family economy

##### 4.1 Villagers ranking of NTFP’s according to importance

Importance of NTFP’s in the family economy was assessed in three ways. Firstly, we asked groups of villagers to rank NTFP’s in order of importance in 28 villages in four provinces. Bamboo-shoots stand out universally as the single most important forest product (see table 2). Women usually attached more importance to products such as vegetables and bamboo-shoots, while men found products such as wildlife and fish more important. Most other products seem to be collected by both men and women. Six of the top ten NTFP’s are food products, cardamom, rattan, damar resin and yang oil are not (see table 1).

This sample of 28 villages should not be seen as an accurate sample of the whole of Lao PDR: firstly we only worked in four Provinces and secondly the villages were not selected to be representative of the Province. However two general features stand out that are likely to hold true for the majority of Lao forest using villages: the great variety of products used and the predominance of products used for subsistence, especially food products, over commercial products.

##### 4.2 Villagers ranking of sources of income

A second way of assessing the importance of NTFP’s in the family economy is asking villagers to rank their sources of cash income or from barter trade. On average, 55 % of income is considered to be derived from NTFP’s (see table 2). Cardamom comes out on top here among the NTFP’s, followed by fish, wildlife, damar resin and bamboo shoots. It is interesting to see that locally consumed perishable food products such as fish, wildlife and bamboo-shoots feature so closely next to typical export products such as cardamom or damar resin. This probably means that considerable market pressure is also derived from the part of the local population who live further away from the forest, such as city dwellers.

Table 1: Top 50 most important NTFP’s according to villager’s group ranking, 28 villages in Oudomxai, Nakai, Salavan, Champasak.

| No | Product | R a n k s (%) | Other 40 products ranked to importance |
|----|---------|---------------|--|
|----|---------|---------------|--|

|                  |              | Oud Nak | Sal | Cha | total | men | wome<br>n | by village groups in all 28 villages |                     |
|------------------|--------------|---------|-----|-----|-------|-----|-----------|--------------------------------------|---------------------|
| 1                | bambooshoots | 14      | 6   | 23  | 9     | 13  | 13        | 17                                   | 11 rattan shoots    |
| 2                | fish         |         | 14  | 12  | 14    | 10  | 13        | 7                                    | 12 bamboo canes     |
| 3                | vegetables   | 12      | 6   | 9   | 11    | 9   | 11        | 11                                   | 13 pandan mats      |
| 4                | wildlife     | 11      | 10  | 1   | 12    | 8   | 11        | 6                                    | 14 mak khene        |
| 5                | cardamom     | 13      | 10  |     | 5     | 7   | 7         | 7                                    | 15 po piet          |
| 6                | rattan canes | 7       | 5   | 4   | 6     | 6   | 6         | 6                                    | 16 saphan           |
| 7                | kisi resin   |         | 14  | 3   | 4     | 5   | 2         | 4                                    | 17 galangal (kha)   |
| 8                | frogs        |         |     | 19  | 0     | 5   | 5         | 5                                    | 18 malva nuts       |
| 9                | mushrooms    | 4       | 4   | 2   | 7     | 4   | 3         | 6                                    | 19 snails           |
| 10               | yang oil     |         |     | 8   | 8     | 4   | 4         | 4                                    | 20 bone hom         |
| Total top 10     |              | 61      | 67  | 81  | 76    | 71  | 74        | 74                                   | 21 benzoin          |
| rest 40 products |              | 39      | 33  | 19  | 24    | 29  | 26        | 26                                   | 22 tubers           |
| All 50 products  |              | 100     | 100 | 100 | 100   | 100 | 100       | 100                                  | 23 khem grass       |
|                  |              |         |     |     |       |     |           |                                      | 24 fruits           |
|                  |              |         |     |     |       |     |           |                                      | 25 makkhamphep      |
|                  |              |         |     |     |       |     |           |                                      | 26 grass thatch     |
|                  |              |         |     |     |       |     |           |                                      | 27 bia lai          |
|                  |              |         |     |     |       |     |           |                                      | 28 bai kho leaves   |
|                  |              |         |     |     |       |     |           |                                      | 29 eaglewood        |
|                  |              |         |     |     |       |     |           |                                      | 30 kheua hem        |
|                  |              |         |     |     |       |     |           |                                      | 31 haktinhong       |
|                  |              |         |     |     |       |     |           |                                      | 32 shrimps          |
|                  |              |         |     |     |       |     |           |                                      | 33 chouang bark     |
|                  |              |         |     |     |       |     |           |                                      | 34 paper mulberry   |
|                  |              |         |     |     |       |     |           |                                      | 35 mak khene        |
|                  |              |         |     |     |       |     |           |                                      | 36 sticklack        |
|                  |              |         |     |     |       |     |           |                                      | 37 various shoots   |
|                  |              |         |     |     |       |     |           |                                      | 38 fuelwood         |
|                  |              |         |     |     |       |     |           |                                      | 39 kheua kao        |
|                  |              |         |     |     |       |     |           |                                      | 40 dok lao (fibres) |
|                  |              |         |     |     |       |     |           |                                      | 41 vomica nuts      |
|                  |              |         |     |     |       |     |           |                                      | 42 others           |
|                  |              |         |     |     |       |     |           |                                      | 43 ya nang          |
|                  |              |         |     |     |       |     |           |                                      | 44 teakleaves       |
|                  |              |         |     |     |       |     |           |                                      | 45 sakhon           |
|                  |              |         |     |     |       |     |           |                                      | 46 bong bark        |
|                  |              |         |     |     |       |     |           |                                      | 47 honey            |
|                  |              |         |     |     |       |     |           |                                      | 48 vines kheua      |
|                  |              |         |     |     |       |     |           |                                      | 49 fibres po        |
|                  |              |         |     |     |       |     |           |                                      | 50 bialai leaves    |

The main other source of income besides NTFP’s is income from livestock sales. Rice sales rank low as a source of income. This represents the general low levels of rice surpluses and frequent rice shortages that villagers have to cope with. Income from off-farm activities as shops or labour is very limited.

Table 2: Villager’s ranking of income sources, 28 villages, 1996.

| Income source   | Group           | Oud  | Nak  | Sal  | Cham | TOTAL |
|-----------------|-----------------|------|------|------|------|-------|
| Cardamom        | medicinal plant | 21%  | 10%  | 0%   | 6%   | 9.5%  |
| Fish            | animal food     | 0%   | 12%  | 2%   | 13%  | 7.0%  |
| Wildlife        | animal food     | 8%   | 10%  | 2%   | 4%   | 5.8%  |
| Damar resin     | exudate         |      | 14%  | 5%   | 4%   | 5.6%  |
| Bamboo shoots   | plant food      | 7%   | 4%   | 1%   |      | 3.0%  |
| Rattan canes    | fiber           | 0%   | 5%   | 0%   | 5%   | 2.6%  |
| Saphan          | exudate         | 10%  |      |      |      | 2.5%  |
| Bong bark       | exudate         |      | 8%   |      |      | 2.0%  |
| Rattan shoots   | plant food      | 1%   | 7%   |      |      | 1.8%  |
| Yang oil        | exudate         |      |      | 4%   | 4%   | 1.8%  |
| Others          |                 | 14%  | 8%   | 19%  | 14%  | 13.6% |
| Total NTFP's    |                 | 61%  | 78%  | 33%  | 48%  | 55%   |
| Other sources   |                 |      |      |      |      |       |
| Livestock       |                 | 16%  | 16%  | 39%  | 27%  | 24%   |
| Rice            |                 | 8%   |      | 21%  | 9%   | 9%    |
| Other crops     |                 | 14%  | 3%   | 3%   | 12%  | 8%    |
| Labour          |                 |      | 1%   |      | 3%   | 1%    |
| Off-farm income |                 | 1%   | 2%   | 4%   | 1%   | 2%    |
| Total others    |                 | 39%  | 22%  | 67%  | 52%  | 45%   |
| TOTAL           |                 | 100% | 100% | 100% | 100% | 100%  |

### 4.3 Household interviews

The third method we used to assess the importance of NTFP’s was a short questionnaire survey, focusing on the family economy. As this was not done in all locations, we will present here a data set from the Nakai area by way of example.

A total of 191 families was interviewed in 5 villages. On average, income from NTFP’s rose from 82,926 kip or US\$85 in 1996 and US\$120 in 1997, which is an increase of 40% (see table 3). Most of this increase was derived from increased collection of “kisi” damar resin. Income from collection of “bong bark” went down, and villagers confirmed that they finished most of the standing stock in the past two years. Selling of wildlife increased sharply: within one year the total earnings of 100 families went up from US\$98 (77,857 kip) to US\$1,297 (1,024,800 kip), an increase of twelve times (1200%).

Table 3: Estimated income from NTFP’s in 5 villages on the Nakai plateau.

| Product<br>(values in kip) | Total Value 5 villages |                   | Av. Value per household |                |
|----------------------------|------------------------|-------------------|-------------------------|----------------|
|                            | 1996                   | 1997              | 1996                    | 1997           |
| kisi                       | 4,684,367              | 13,079,661        | 23,658                  | 66,059         |
| rattan shoots              | 326,606                | 5,071,125         | 1,650                   | 25,612         |
| cardamom                   | 2,196,294              | 1,834,933         | 11,092                  | 9,267          |
| bong                       | 3,919,132              | 1,632,600         | 19,794                  | 8,245          |
| wildlife                   | 77,857                 | 1,024,800         | 393                     | 5,176          |
| others*                    | 1,991,014              | 721,333           | 10,056                  | 3,643          |
| rattan canes               | 3,224,000              | 55,175            | 16,283                  | 279            |
| <b>TOTAL</b>               | <b>16,419,271</b>      | <b>23,419,628</b> | <b>82,926</b>           | <b>118,281</b> |

\*) others include various fish species sold, eaglewood (*Aquilaria crassna*), and wild cinnamon, “chouang” bark (*Cinnamom sp.*). 1US\$=970 kip.

Villagers had been asked earlier to define wealth, which they define primarily as self-sufficiency in rice. They were also asked to rank all families in a villages according to wealth in to wealth categories, using the technique of wealth ranking. From each wealth category, 5-10 families were randomly selected for the family income survey. A rough estimate of family income was calculated on the basis of sales of NTFP’s livestock and other income sources, weighed against expenditures for rice buying (see table 4).

The total sample of 191 families could be divided into four groups along natural breaks according to this income figure. Around half of the interviewed families had a negative net income, which implies that they have a rice shortage (see table 4). The average gross income over all families was \$258 (204,038 kip), from which \$138 was spent on buying rice, leaving \$73 as net income. Income from NTFP’s averaged 41% of gross cash income, compared to 32% from livestock and 27% other income sources.

Table 4: Average family income for 1996 among all 191 families in 5 villages on the Nakai Plateau, divided into four income groups (Values in kip; 970 kip=1US\$).

| Income group      | Richest        | Medium         | Poor           | Poorest         | TOTAL          |
|-------------------|----------------|----------------|----------------|-----------------|----------------|
| No families       | 48             | 60             | 41             | 42              | 191            |
| NTFP's            | 99,740         | 107,555        | 60,461         | 70,487          | 82,926         |
| (% of gross val.) | 24%            | 62%            | 35%            | 90%             | 41 %           |
| Livestock         | 152,220        | 41,500         | 73,462         | 3,900           | 64,914         |
| Off-farm          | 164,000        | 23,667         | 37,667         | 4,000           | 56,199         |
| <b>GROSSVALUE</b> | <b>415,960</b> | <b>172,722</b> | <b>171,590</b> | <b>78,387</b>   | <b>204,038</b> |
| Rice*             | -10,939        | -30,936        | -232,712       | -294,634        | -133,519       |
| <b>NET VALUE</b>  | <b>405,021</b> | <b>141,786</b> | <b>-60,273</b> | <b>-246,464</b> | <b>70,519</b>  |

\*) Amount of money needed to buy rice (negative values) or surplus rice sold (positive values), based on a calculation of surpluses after family consumption, calculated as 300 kg/head/year.

The estimate of 41% for the contribution of NTFP’s to the family income is much lower than the earlier mentioned estimate of 80% obtained in group ranking exercises for the Nakai area (see table 1, paragraph 4.1). We cannot be certain why this is so. We tend to think that the family based interviews are more reliable than the group discussions, but have no firm proof. It could be that group meetings are dominated by village leaders who are often wealthier and have a larger family size, hence tend to collect more NTFP’s and buy less rice than the average family. Perhaps selling of livestock is considered shameful and not readily admitted to in group discussions, hence underestimated. Both methods ideally need more testing. At any rate NTFP’s are without doubt the most important source of income over all families.

Another important point to make is the difference in dependency on NTFP’s between poorer and richer families. The absolute quantity of income derived from NTFP’s is not so much different between poorer and richer families. In fact richer families, who usually have larger number of persons at their disposal, tend to collect more NTFP’s than poorer families. However the poor families are almost totally dependent on NTFP’s as their sole source of income (90%). The richest families get only 23% of their cash income from NTFP’s, as they have also income from livestock selling and other sources. This is aggravated by the fact that richer families do not have to spend this income buying rice, but poorer families spent everything on buying rice and then still need to borrow more or go hungry. Villagers mention the use of tubers and other NTFP’s as a substitute for rice in such a situation. We need to do more intensive survey work to get more definite information on the role of NTFP’s emergency food.

## 5 Exports of NTFP’s

The Ministry of Agriculture produces yearly export statistics of NTFP’s exported (see table 5).

Table 5: Exports of NTFP’s from Lao PDR, 1995-1996

(Sources : Quantities: Min. of Agriculture; Prices: estimates from our own market research).

|                             | Quantity  | Unit  | Price (kip) | Value(kip)    | Value(\$) |
|-----------------------------|-----------|-------|-------------|---------------|-----------|
| 1 cardamom                  | 461,337   | kg    | 4,500       | 2,076,016,500 | 2,232,276 |
| 2 "kisi" damar resin        | 3,098,192 | kg    | 160         | 495,710,720   | 533,022   |
| 3 sugar palm fruits         | 865,109   | kg    | 500         | 432,554,500   | 465,112   |
| 4 bong bark                 | 1,236,675 | kg    | 130         | 160,767,750   | 172,869   |
| 5 broom-grass               | 502,266   | kg    | 250         | 125,566,500   | 135,018   |
| 6 orchid stems              | 49,000    | kg    | 2,000       | 98,000,000    | 105,376   |
| 7 rattans (big diameter)    | 246,366   | stems | 372         | 91,648,152    | 98,546    |
| 8 paper mulberry bark       | 563,402   | kg    | 150         | 84,510,300    | 90,871    |
| 9 dried lizards             | 7,237     | skins | 11,141      | 80,627,417    | 86,696    |
| 10 yang oil                 | 185,240   | liter | 337         | 62,425,880    | 67,125    |
| 11 eaglewood                | 3,327     | kg    | 10,000      | 33,270,000    | 35,774    |
| 12 bamboo shoots            | 165,000   | kg    | 200         | 33,000,000    | 35,484    |
| 13 "hak tin hung" ferns     | 10,160    | kg    | 3,232       | 32,837,120    | 35,309    |
| 14 benzoin                  | 15,866    | kg    | 2,000       | 31,732,000    | 34,120    |
| 15 bamboo canes             | 141,655   | stems | 200         | 28,331,000    | 30,463    |
| 16 Draceana plants          | 103,261   | kg    | 245         | 25,298,945    | 27,203    |
| 17 rattan fruits            | 41,288    | kg    | 500         | 20,644,000    | 22,198    |
| 18 "peuak meuak"/"saphan"   | 107,500   | kg    | 187         | 20,125,000    | 21,640    |
| 19 malva nuts               | 17,230    | kg    | 558         | 9,614,340     | 10,338    |
| 20 "si siet" bark           | 5,000     | kg    | 1,500       | 7,500,000     | 8,065     |
| 21 rattans (small diameter) | 37,398    | stems | 150         | 5,609,700     | 6,032     |
| 22 vomica nuts              | 23,632    | kg    | 134         | 3,166,688     | 3,405     |
| 23 "kheua hem"              | 58,900    | kg    | 10          | 589,000       | 633       |
| 24 sticklack                | 2,200     | kg    | 150         | 330,000       | 355       |
| 25 charcoal                 | 234,500   | kg    | 100         | 23,450,000    | 25,215    |
| 26 incense powder           | 100       | kg    | ?           | -             | -         |
| 27 "man on ling"            | 3,355     | kg    | ?           | -             | -         |
| 28 "kheua tip ti"           | 22,000    | kg    | ?           | -             | -         |
| TOTAL                       |           |       |             | 3,983,325,512 | 4,283,146 |

Table 6: Main exports from Lao PDR in 1996.

| PRODUCT                         | VALUE (million \$) | % OF TOTAL EXPORTS |
|---------------------------------|--------------------|--------------------|
| NTFP’s                          | 4.3                | 2.5                |
| Timber                          | 64.5               | 38                 |
| Manufacturing (mainly textiles) | 45.0               | 27                 |
| Hydropower electricity          | 16.0               | 9.5                |
| Coffee                          | 12.0               | 7                  |
| Others                          | 26.5               | 16                 |



|       |       |     |
|-------|-------|-----|
| TOTAL | 168.3 | 100 |
|-------|-------|-----|

In general, exports of NTFP’s from Champasak Province rose sharply in volume between 1994 and 1996 (see Annex 2). E.g exports of yang oil increased from 83 tonnes in 1994 to almost 700 tonnes in 1996. While yang oil’s price remained stable around \$0.35, the price of cardamom went up sharply from \$1-\$4 in the same period. This trend indicates that pressure on forest resources by outside buyers is increasing. It underlines the need to develop sustainable management systems to avoid depletion of the resource base.

Another issue with the export of these products is the large price increase accrued along the marketing chain. An example of this can be seen in the trade of yang oil (also known as gurjun oil), the oleorsin of *Dipterocarpus alatus*. The villagers in Laos sell their product for US\$0.16/kg and the final Bangkok buying price is at least US\$1.20/kg. (see table 7). The distribution of profits along the market channel shown in the table above indicates that the greatest jump in prices occur between the village collector and the exporter to Thailand and to a lesser degree between the exporter and the final Bangkok price.

Table 7: Prices of yang oil from Lao forest collector to Bangkok.

| level:      | village collector | village buyer | district trader | exporter to Thailand | exporter from Bangkok |
|-------------|-------------------|---------------|-----------------|----------------------|-----------------------|
| sale price: | US\$ 0.16         | US\$ 0.26     | US\$ 0.48       | US\$ 0.70            | US\$1.20              |

It therefore seems that a useful intervention would be to assist the collectors to form an association which sells directly to the Thai importer. In the case of yang oil this might be an intermediary or a representative of a company based in Bangkok which is distributed directly to customer. Supporting the market chain at this link would also help solve some of constraints mentioned by Thai importers referred: difficulties in dealing with Lao entrepreneurs, delivery problems, quality problems and so on.

Yang oil also provides a good example of the problem of lack of clear government regulations. Since 1995, the Provincial authorities of Champasak province did not issue new quota for yang oil exports from its Province, saying that yang oil harvesting often causes forest fires and increased the death of yang trees. This action potentially reduces income earning possibilities for villagers. According to the villagers, a single tree can be tapped for 50 years if handled well. It would seem that this is a durable system, provided new trees are planted. This issue should be investigated further. The project could provide objective methods of monitoring of the production and biodiversity indicators, that could be used as basis for making policy decisions.

Finally, there is the problem of unrecorded trade, which is not taken into account in official figures. A good example is the lively trade in orchids and other ornamentals, taking place at the Lao-Thai border. Our survey identified some 90 species of ornamentals being exported, of which 56 species of wild orchids. On average 5,000- 7,000 plants are sold per month. This trade leads to rapid extinction of rare orchid species. The average price at the Lao side is 12 baht (\$0.50) per plant, at the Thai side it is 38 baht (\$1.50) per plant. Most plants are directly transported to Bangkok, where they fetch prices from anything between two dollars to five thousand dollars per plant. The size of this trade is estimated at \$100.000 per year, making orchids the fifth biggest exported forest product of Champasak province after timber (\$10.9 million) , malva nuts (\$900,000), cardamom (\$500,000) and yang oil (\$100,000). Three main options could be explored by the project: (i) feasibility study for cultivation of orchids in villages; (ii) group building among market sellers, to get more control on the trade; (iii) trade bans on endangered species.

## 6 Traditional use areas and boundaries

### 6.1 Participatory mapping of forest resources

Where do villagers collect their NTFP’s from? We used three data collection methods to answer this question: land-use type ranking, forest block ranking and sketch mapping. In addition, we did rapid forest inventories in each village. In general villagers discern main land use types such as dry dipterocarp and evergreen forests, paddy fields and upland rice/fallow fields , streams and ponds etc. Within the evergreen forest, they discern many forest blocks, usually delineated by streams “huay” or other landscape features such as roads or rocks. Again we will use a data set from the Nakai area to illustrate our results.

Firstly we asked villagers to define and rank main land-use types where NTFP’s are collected. (see table 8). Interestingly, an overall 60 % of NTFP’s was classified as collected from streams, ponds, paddy fields, grass fields, and fallow fields which are not strictly forest areas. Only 25 % was said to be derived for the evergreen forest and mountains.

Table 8: Collection areas for NTFP’s, ranked according to relative importance, by villagers in 3 villages on the Nakai Plateau, March 1997.

| Landtype   | Village                      | Nakai |       | Sopphe |       | Thalang |       | All  |       |         |
|------------|------------------------------|-------|-------|--------|-------|---------|-------|------|-------|---------|
|            | men/women                    | men   | women | men    | women | men     | women | men  | women | overall |
| dong/pou   | evergreen forest/mountains   | 15%   | 29%   | 25%    | 25%   | 32%     | 22%   | 24%  | 25%   | 25%     |
| kok        | dry dipterocarp/pine forests | 25%   | 13%   | 14%    | 20%   | 8%      | 16%   | 15%  | 16%   | 16%     |
| palao      | fallow regrowth              | 20%   | 26%   | 14%    | 15%   | 8%      | 18%   | 14%  | 20%   | 17%     |
| houay/nong | streams/ponds                | 25%   | 22%   | 38%    | 30%   | 33%     | 33%   | 32%  | 28%   | 30%     |
| thong/naa  | grassfields/paddy fields     | 15%   | 10%   | 10%    | 10%   | 20%     | 12%   | 15%  | 11%   | 13%     |
|            |                              | 100%  | 100%  | 100%   | 100%  | 100%    | 100%  | 100% | 100%  | 100%    |

Secondly, we would ask villagers to specifically list and rank the evergreen forest areas as to their importance for collecting NTFP’s. Villagers are able to identify forest blocks and main products collected per block. They also gave estimates of the total yield of main products for each blocks. In the individual family interviews we had also asked the specific quantities collected by each family for each location, which could also be used to calculate block yields (see table 9).

Table 9: Comparison of estimates of total village harvests of 3 key NTFP’s in 5 villages on the Nakai plateau, using family survey data and villagers forest block ranking estimates.

|                     |          | Survey | men's block ranking | women's block ranking |
|---------------------|----------|--------|---------------------|-----------------------|
| Khone Ken           | kisi     | 4,213  | 3,950               |                       |
|                     | cardamom | 711    | 3,500               |                       |
|                     | bong     | 11,202 | 10,800              |                       |
| Kaoy                | kisi     | 17,086 | 8,300               | 14,500                |
|                     | cardamom | 167    | 280                 | 586                   |
|                     | bong     | 1,139  | 2,000               | 1,700                 |
| Nakai               | kisi     | 11,878 | 4,100               | 47,000                |
|                     | cardamom | 0      | 600                 | 75                    |
|                     | bong     | 15,414 | 4,400               | 2,650                 |
| Sop Phene           | kisi     | 0      | 61,000              | 57,000                |
|                     | cardamom | 0      | 1,400               | 55                    |
|                     | bong     | 19,030 | 17,000              | 2,000                 |
| Thalang             | kisi     | 3,667  | 29,000              | 49,500                |
|                     | cardamom | 0      | 400                 | 101                   |
|                     | bong     | 2,360  | 18,000              | 12,700                |
| TOTAL<br>5 villages | kisi     | 36,844 | 106,350             | 168,000               |
|                     | cardamom | 879    | 6,180               | 817                   |
|                     | bong     | 49,145 | 52,200              | 19,050                |

For “kisi” resin, the family interview estimates were much lower than the block ranking. For cardamom, the women’s ranking estimate was close to the interview estimate, for bong bark, the men’s estimate was very close. Unfortunately, there was no opportunity to feed back these differences to the villagers involved. Quantitative ranking of forest block productivity would seem potentially a powerful and quick tool, but may needs more testing.

Thirdly, villagers could usually draw a map of their resource use areas or forest (see map in annex 3). These area’s can more or less be matched with the topographical maps. More intensive mapping could be done using inexpensive GPS units. Such a map could then be used to measure densities of NTFP’s and interviews with collectors to assess their estimates of yield from each block. These villager defined forest blocks could also become a powerful tool in setting up a truly participatory system for land use planning and community forest management.

## 7 Main issues of sustainability

### 7.1 Subsistence use

In the subsistence use, depletion of wildlife is the most disturbing trend for conservationists. For the local people, insecure access rights to the forest resource and decreased availability of products are the main

concerns. These trends need further investigation. In the following paragraphs we outline some potential for solving these problems.

### 7.1.1 Securing access rights

Access rights of village communities to forest resources may be secured by government allocation of land use rights to these communities. This option has already been frequently proposed by village communities and will be undertaken by the project. While a general process of land allocation has already been initiated by the Lao Government, the project would have role in adding a dimension of sustainable management.

### 7.1.2 Sustainable use of food products and wildlife

The use of food products could be made more sustainable by :

- 1- making villagers aware of the relation between diet and health; trying to eat more healthy diets, especially for children;
- 2- exploring the possibility of commercialising some products that are becoming scarce in neighbouring Thailand, where there is an increasing demand for ‘forest delicacies’ such as ‘man tien’ tubers (*Dioscorea* sp.) and fruits of ‘mak fai’ (*Baccaurea sapida*);
- 3- making sure that there are enough plants and animals left to regrow for next year. This will be very difficult because the number of people is growing so quickly and the demand for forest products gets bigger every year, whereas the forest area gets smaller every year. So we also need to look at :
- 5- exploring the possibility of raising some quick growing animals like frogs, fish;
- 6- exploring the possibility of planting some plants which have become scarce;
- 7- hunting regulations, forest management.

### 7.1.3 Sustainable use of non-food subsistence products

Bamboo houses are found in all villages. They are inhabited by the poorer families. The main reason why people try to replace bamboo structures with wooden ones is that bamboo is not durable: bamboo mats have to be replaced every 3-5 years because of insect damage and rotting. There could be a big potential for introducing durability treatments to prolong the lifetime of bamboo products. E.g. the production of pre-pressed bamboo wallmats, presently imported from Vietnam, might find an easy market in Lao PDR. As bamboo shoots are also an important consumer product, the production of high quality bamboo construction materials may be combined with bamboo shoots production.

Rattans were collected heavily for export over the past fifteen years. They have become scarce to the point that commercial exploitation has almost ceased and large diameter rattans are basically depleted. In view of the strong world market demand for rattan furniture, it may be worth while to try to plant rattans, especially large diameter types. This has been done successfully in Indonesia and Malaysia. It takes 7-10 years for these rattans to reach harvestable sizes.

The bark of the paper mulberry, ‘po-sa’, *Broussonetia papyrifera*, has potential for paper handicraft products, sold to tourists in northern Thailand in the form of umbrella’s, stationary paper etc.

In many villages, people rely on a large variety of traditional medicines for curing common illnesses such as stomach problems, cold, fevers, light wounds, etc. This knowledge needs to be preserved. Buying of western medicines is ranked high as a source of expenditure in most villages. Local medicines may be a better and cheaper alternative in some cases. The project could raise villagers awareness of the value of local medicines. Here we seek co-operation with the provincial health services, who have specialists on medicinal plants.

## 7.2 Commercial use

The importance of NTFP’s for export was highlighted earlier (see chapter 5) How sustainable is this large scale harvesting of forest products? Ecologically, most at risk are products that are heavily in demand, harvested destructively and regrow slowly or not at all. Typical examples of such products are: orchids, rattans, *Dracaena*, eaglewood, hak tin hung fern roots (see table 10).

Table 10: Ecological sustainability of various exported NTFP’s

| Criteria  | Typical products                               | Level of sustainability |
|---|--|-------------------------|
| 1 destructive harvesting, very slow regrowth only in special forest surrounding | Orchids, rattans, <i>Dracaena</i> , eaglewood, | immediate danger        |
| 2 destructive harvesting, fast regrowth but requiring special surroundings      | “hak tin hung” fern roots, “kheua hem” vines,  | under threat            |

|  |   |   |
|--|---|---|
| 3 destructive harvesting, medium long regrowth (4-6 years), little special ecological requirements | all barks of “bong”, paper mulberry, “saphan” & “sisiet”    | stocks are being depleted but could be regained if actively managed |
| 4 fruits, danger of cutting to ease harvesting under high harvesting pressure                      | sugar palm fruits, rattan fruits, malva nuts,               | overharvesting is probably taking place.                            |
| 5 exudates, slow depletion of stock through deforestation  | “kisi” damar resin, yang oil,                               | without forest protection not sustainable on the long run           |
| 6 destructive harvesting, fast regrowth, can grow anywhere   | bamboo canes, bamboo-shoots, “khem” grass/brooms, sticklack | sustainable if some replanting is effectuated                       |
| 7 exudates, fast cycle, low harvesting pressure  | benzoin,  | sustainable if prices get better                                    |
| 8 partly cultivated, no effect of harvesting on stand  | cardamom  | very sustainable if maintained                                      |

Most other issues threatening the sustainable use of NTFP’s have already been discussed above: the general state of poverty among rural people, rapid deforestation, market pressure from outsiders, unstable prices, lack of clear government regulations, lack of processing capacity, lack of access to information, uncertainty on forest access rights giving little incentives for communities to manage forests. Village collectors and other stakeholders involved in NTFP use should become aware of these issues to be able to make informed choices to forge solutions.

Before starting any activity like involving long term investment of commitment, we will have to do a feasibility study: what is the potential market, what would our investments be, what technical skills and what inputs will be needed, what is an economical size of the enterprise etc. etc. This kind of feasibility study should be undertaken only after villages have expressed an interest in doing such a pilot project.

## 8 Implication for RRA work

Above we have identified a number of possible activities that could be undertaken by the project together with villagers to improve livelihood to improve biodiversity conservation. Again we should stress that these are merely ideas to be put forward to villagers for consideration. The villagers themselves will have to decide how they want to proceed. How can the project assist villagers in making such decisions?

The project is presently involved in a participatory planning process (PRA). This process consists of a series of meetings with specific interest groups within one village community. These meetings were divided into two parts: one part focusing on general village development priorities, the second part focusing on NTFP’s. This makes choices easier for villagers. It also allows the project to clarify its limited ability to support larger village development projects.

In the first session, villagers are asked to list the five most important village development priorities. Subsequently, villagers were asked to list for each priority goal, what their own contribution could be, what external assistance they would require from the government, from our project and from other projects. This information was recorded on big poster paper, for everybody to see (see table 11). We then told villagers that we will investigate each of these projects, establish to what extent our project could contribute, and seek to contact suitable third party organisations who are specialized in the required field. We then made an appointment to come back and talk about these subjects in a follow-up meeting after 2-3 weeks.

Table 11: Format for village development priorities ranking

| Activity | Rank of Importance | Villagers Input | Government Input | Our project’s Input | Other project to contact |
|----------|--------------------|-----------------|------------------|---------------------|--------------------------|
|          | 1                  |                 |                  |                     |                          |
|          | 2                  |                 |                  |                     |                          |
|          | 3                  |                 |                  |                     |                          |
|          | 4                  |                 |                  |                     |                          |
|          | 5                  |                 |                  |                     |                          |

Part two is a consultation on specific NTFP related activities, that villagers would like to engage in with the project. We first reviewed the list of NTFP’s collected in the village, as recorded during earlier RRA work. We then asked villagers to select the NTFP’s they would like to discuss in terms of improvement. For each

selected NTFP, a small discussion group was formed, by asking volunteers to choose their favourite topic. In any meeting, 3-9 groups would thus be created, consisting each of 2-5 persons.

Each group was then asked to discuss the main problems and to propose solutions for five main aspects of using this product: harvesting, planting, processing, marketing and conservation/forest management. A table format was given to record the findings of each discussion group (see table 12). Each discussion group would then spend an hour or more to discuss and write up their findings.

Table 12: Format for small group discussions on each NTFP pilot project

| Activity                             | Problems | Solutions | Starting date | Do/Not do |
|--------------------------------------|----------|-----------|---------------|-----------|
| 1 Planting                           |          |           |               |           |
| 2 Harvesting                         |          |           |               |           |
| 3 Processing                         |          |           |               |           |
| 4 Marketing                          |          |           |               |           |
| 5 Conservation/<br>Forest management |          |           |               |           |

Returning to the general group, each discussion group presents its findings, which are recorded on a big sheet of paper. We then asked for each proposed activity whether anybody is interested to actually undertake this activity. If yes, we asked volunteers to put their names forward to be recorded as an pilot group. Next we recorded for each pilot group when their first activity should take place and when their next meeting should be. This would usually be within 2-3 weeks after the present meeting.

At the end of each session, a group of interested individuals may decide they want to carry on with a certain activity or pilot project. According to needs, the NTFP project may put in associated inputs such as training for literacy and basic accounting skills, small business development, technical training, gender awareness etc. In this way, we may be able to induce a village development process which may ultimately lead to a more sustainable use of NTFP’s.

Typical activities now being undertaken at village-level are: experiments on planting NTFP’s as a cash crop, sustainable harvesting, processing/quality control, marketing, land allocation and community based forest management. Research on specific topics (e.g. role of NTFP’s in nutrition, gender analysis, feasibility studies for processing/marketing), training of staff/user groups and monitoring and evaluation are continuing to feed into the on-going PRA process.