Cambodia
Proposed Biodiversity and Protected Areas Management Project

Socioeconomic Information Report:
Populations Living in and near Virachey National Park,
Northeast Cambodia

Submitted by Kara Page in cooperation with
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I. INTRODUCTION

I.A. Purpose of the Report

This report was developed as part of a World Bank mission to Cambodia in February and March 1998. The aim of the overall mission was to create a proposal for a Biodiversity and Protected Areas Management project (BPAMP) in response to needs identified in the Royal Cambodian Government’s National Environmental Action Plan. The report provides a recent examination of socioeconomic data and information available on the populations living in and near Virachey National Park in Northeast Cambodia. It presents options for working with those populations to best protect biodiversity and other park resources, and for building a base of support for the park among minority groups and other stakeholders. Other products of the mission included a Biological Information Assessment, a Community Participation Plan, and the final project Proposal.

I.B. Objectives of the Report

The objectives include compiling existing information, to the extent possible, on:

- Identification of local communities (including ethnic minorities) in the buffer areas of Virachey National Park, including identifying vulnerable groups, particularly in Veun Sai, Ta Veng, and Siem Pang districts;

- The general socioeconomic characteristics and livelihood patterns of households within the buffer zone, including gender differentiation and the potential impacts of effective park management on livelihood;

- Land use and formal/informal land tenure in the buffer areas and natural resource use patterns of the people;

- Priority socioeconomic felt needs of the people;
Assessment of the capacity of formal and/or informal institutions in the communities, including indigenous organizations, which have the potential to facilitate local participation in buffer zone/protected areas management planning and implementation; and

Social and economic factors which may adversely or positively affect the ability of local stakeholder group to effectively participate in the park and buffer zone management activities; and

An ethnic minorities development plan to support World Bank Organizational Directive 4.2.

I.C. Methods of Information Collection

The methods of information gathering used for this activity consisted of identifying key contacts and reports, interviewing contacts, organizing and analyzing the coverage provided in the reports, and assessing the information and its adequacy in topics related to Virachey National Park (VNP). Information collection was ongoing on a limited scale throughout the period before this final report was completed. For report-gathering and interviews, two week-long visits were made to Ratanakiri province and one shorter visit was made to Steung Treng province. In addition, information was collected directly through a brief field visit to Veun Sai district, and secondhand through brief field visits to Siem Pang and Ta Veng districts. Fluent Khmer, Lao, and local-language speakers were included in field visits, and in Siem Pang efforts were made to hold separate discussions with men and women, authority figures and ordinary villagers.

Interviews focused on the following issues:

- Identification of local communities living in or adjacent to the park and trends in their movements;
- Socioeconomic information related to communities adjacent to or using park resources;
- Use of natural resources of those populations;
- Related (current and planned) community development activities supported by local, provincial, and national government and non-governmental organizations;
- Key issues (threats, constraints, options) in promoting protection of traditional livelihoods and protected areas management in Ratanakiri; and
- Perceptions of existing government and NGO program implementors as to the most useful contributions outside institutions can make in protecting VNP.

Individuals interviewed include:

**In Phnom Penh:**

- Ministry of Environment (MOE), Dept. of Nature Conservation and Protection (DNCP): Acting Director Chay Samith, Meng Monirak
- MOE, Dept. of Natural Resource Assessment and Environmental Data Management: Pum Vicheth, Chou Sophiak
- MOE, Dept. of Planning: Chan Dara
- MOE/WWF: Eric Wikramanyake, Seng Teak, Ken Serey Rotha, Jack Hurd (latter two also DNCP)
- MOE/UNDP/ETAP: Tin Ponlok, Ruth Bottomley, Paul Im
- IRIC: Kheam Vireak, (frmr.) Tom Kunneke
- CARERE: Joel Charny, Hanneke Meijers
• CEPA: Vann Piseth, Tep Bunnarith, Auv Sophiak

In Ratanakiri:

• Non-timber Forest Products project (NTFP): Gordon Paterson
• Provincial Environment Dept.: Koy Sokha, Hor Hong
• CARERE/IDRC: Tonie Nooyens, Tiann Monie, Caroline McCausland, Conny Van den Berg, Nhem Sovanna, Ken Riebe, Jeremy Ironside, Stephan (CARERE/PDRC: Ream Rin)
• CIDSE: Bunthuen, Tuon Vicheth, Brian Heidel
• UNFPA/Dept. of Planning (census): Julian Hansen
• World Concern: Kevin Olson, Kreg Mallow
• Dept. of Education: Mr. Pirith

In Steung Treng:

• Siem Pang District Chief: Lun Van Di
• Village and commune authorities and village residents in Teak Team, Ochay, Hinsiv, and Chantuk in Siem Pang district
• UNFPA/Dept. of Planning (census): Walter Russyk
• PFD: Soum Sophal, Keo Danny
• YWAM: Philip Scott, Cathy Church, Terry
• Provincial Environment Dept.: Noap Chanthy, Jen Run
• Provincial Rural Development Dept.: Sier Heng

The authors wish to acknowledge the generous time and assistance granted by the above in providing information and suggestions. In addition, Kara Page notes with appreciation the collaborations with: Pum Vicheth, Chou Sophiak, Andy Maxwell, David Ashwell and Koy Sokha as being key to the development of this document.

See Appendix I for a complete list of references for the report.

I.D. Issues in Information Collection for this Report

Defining the study area

Defining the area to be studied is problematic, since not enough information exists on which communities are using or dependent on park resources. Thus for the purposes of this report, and based on extensive discussion with World Bank team members and some community members to see what general usage patterns were, the defining line was determined to be the current "buffer zone" boundary in Siem Pang, Veun Sai, and Ta Veng districts, (although the official nature of this boundary is in dispute), with allowance for communities and stakeholders outside this boundary and still using park resources.

Quality and Quantity of the Information

The information available on populations living within, or closely adjacent to, the Park, is largely available only on an informal and anecdotal basis. The quantitative information available is outdated and unconfirmed, as almost no one visits the area on a systematic basis, especially for the purpose of collecting information. Thus the report provides little guidance in terms of determining the priority felt needs of local people; little information
was available for the report since the primary author was unable to make field visits to communities during this mission. However some secondary information is included from reports on other field visits. The same is true with assessments of local institutional capacity, and socioeconomic factors affecting people’s participation in park management.

Not only is information on the relevant ethnic minority communities largely unavailable, as one might expect with shifting cultivators, but, as Joanna White points out, so too is information on the Lao and (increasing) Khmer populations (1996, p. 47). For park management purposes, this information gap may well be critical. Even within this context of sparse detail, information on Siem Pang is more difficult to obtain as only one NGO works there with any consistency. A plan for working with each of the communities (including highland and lowland peoples) using park resources, to document information about their resource use and management systems, was developed under this project’s proposal to the World Bank (Page 1998).

The most reliable sources of information for the area’s population are the institutional memory and reports of non-governmental organizations working in the area, and the populations themselves. This consultancy was restricted almost entirely to collection of secondary data. Thus this report relies heavily on the former of these sources. Where possible, two or more sources were consulted to verify the information.

Gaps in the Information

Implementing the pilot phase of the Biodiversity and Protected Areas Management Project, requires that gaps in the information base regarding socioeconomic issues in the Virachey National Park area be filled. Extensive data on the differences between local ethnic groups, and even different villages of the same ethnicity, are needed to ensure a sustainable approach to participatory park management. So little about these communities and their perspectives on natural resource use is known that without an extensive consultation (i.e. participatory information-gathering and planning) effort with the majority, and if at all possible, aggregate of villages in the park area, significant planning and implementation errors are likely to be made. Specific information needs identified include but are not limited to:

- Inter-village and inter-ethnicity communications networks and cooperation strategies
- Indigenous leaders known and respected in more than one-two villages, who could help the project in building local capacity to participate in park management
- Local perspectives on resource trends, causes of change, and possible solutions; ideas about cooperation with park management staff
- local perspectives on economic changes underway and on external involvement in resource exploitation; relations with wildlife traders, logging operations, rattan operations, etc.
- Locally acceptable options for alternative economic practices if resource exploitation practices are deemed unsustainable
- Exact, mapped, locations and rules for protecting spirit forests
- Gender roles and women’s and children’s issues; recent changes in these areas
- Cultural or practice differences between ethnic groups and villages within the same group
- Trends in hunting and gathering, mapped locations and routes for collecting wildlife, rattan, bamboo, and other valuable items, and more precise data on amounts harvested
- More information on indigenous medical practices and natural resource use

II. SOCIOECONOMIC CONDITIONS

II.A. Summary

Location and Topography
Virachey National Park, located in Northeastern Cambodia, is recognized by international conservation experts as one of the top conservation priorities in Asia. It is said to house fairly undisturbed populations of tiger, gaur, sarus crane, banteng, possibly kouprey, bear, and elephant (Maxwell 1998). The park area extends over three districts of two provinces, Steung Treng and Ratanakiri. In Ratanakiri province, the park is part of Veun Sai and Ta Veng districts, and in Steung Treng, it is part of Siem Pang district (see Map 1. VNP Area).

It is bordered on the north by Laos and on the east by Vietnam. Virachey is bounded on two sides by major rivers, the Sekong on the west and the Sesan on the south. These two rivers, together with the Srepok (which joins the Sesan upstream of the Sesan-Sekong confluence before they enter the Mekong near Steung Treng), account for an estimated 20-40% of the flow of the Mekong River at Kratie (Baird, 1995). As the Mekong-Tonle Sap system together provide an estimated 70% of the animal protein for all Cambodians and an unknown number of consumers in other countries, the park-as-watershed, or bioregion, is itself key to the country as a whole, and essential for protection of the Sesan's upper watershed. In the regional context, the Sesan-Sekong-Mekong watershed houses the entire eastern branch of the lower Mekong basin, in a river system that comprises more than 800,000 km² and stretches from China to Vietnam (Revenga et.al. 1998).

**Governance Issues**

The area has long been seen as a remote wilderness by national leaders and others based in Phnom Penh and only in recent decades has the Cambodian national government become active in the area. This isolation is partially due to the fact that, within Ratanakiri province, an estimated 85% of the population is comprised of ethnic minority groups practicing swidden agriculture. Within Steung Treng as well, it appears that nearly all populations close to park areas are minorities. These "ethnic minorities" customarily used highland and partially forested watersheds to produce and collect food and other subsistence products. In both Ratanakiri and Steung Treng, certain provincial officials have stated their support for protecting minority peoples' customary land use and access to traditional forest collection areas. These officials, most of whom are ethnic Lao or Khmer, see the unique value allotted to their region in its cultural and natural heritage. Technically, however, all national territory belongs to the Royal Cambodian Government. Logging concessions, for example, have often been awarded by national government officials without consulting provincial leaders. In addition, these two provinces have long been home to bands of Khmer Rouge (KR) soldiers. Many minority people initially supported the KR, as this resistance movement was initiated at a time, in the 1960s, when minorities were discontented about heavy pressure from the central government to surrender their traditional lifestyles and lands to industrial development and centralized control.

Since the early 1990s, non-governmental organizations (NGOs) and international organizations (IOs) have been active in both provinces, working on community development, health, education, institution-building, income-generation, and other activities with local people. More recently, an interest in environment and natural resources management and the rights of minority groups in regard to preservation of traditional lifestyles and access to traditional lands has also developed in the Ratanakiri provincial government and the IO/NGO community. These NGOs have amassed some knowledge about the area and its people, and are becoming familiar with the context in which community development takes place. Local government programs reflect these interests and experiences to a large extent. Together, local government and international/non-governmental agencies in the area have provided most of the documented and undocumented information available for drafting this report. Unfortunately few NGOs work closely with the villages closest to the park, making information on the area scarce.

**Stakeholders**

Virachey and the natural resources it contains are of interest to a broad spectrum of stakeholders from local to international levels. Due to its location adjacent to two other countries which have established protected areas nearby, the international environmental community takes a strong interest in the area.

The primary stakeholders within and close by the park, include ethnic Kreung, Kavet, Brou, Lao, and Lun people. For centuries (estimates place them in this area well before the Angkor period in the 11th century), these people, called highlanders for their custom of living in mountainous regions and farming upland rice, have subsisted on an integrated swidden agriculture-forest management system regulated by spiritual beliefs. Swidden agriculture is another term for slash-and-burn or shifting agriculture. Their concerns and knowledge of forest resources and land management will provide strong support to park management efforts, if they are approached in a way that recognizes their claims and interests.

Lowland communities, primarily ethnic Lao and Khmer, are probably the second most numerous stakeholder group. Their positions in decision-making agencies, and their interests in using the area’s resources to promote...
widespread benefits to the people as a whole, make their concerns highly relevant as well.

Additionally, in recent years, an increasing number of industrial land development interests, foreign and Cambodian, have begun to show an interest in areas just south of the park, and in the case of logging, sometimes in the park. Hydro power projects, logging concessions, commercial crop plantations, and small businesses have moved in and applied for permission in various forms to use the land, and many have been granted it. In addition, virtually uncontrolled illegal timber extraction has begun and seems to be escalating rapidly in pace. Ngozi Okonjo-Iweala, Director of the World Bank’s Southeast Asia unit, said in March that the country’s forests overall will be gone in three to five years (Madra 1998).

II.B. Demography

The area of Virachey National Park in northeastern Cambodia is unique in part due to its low population density and high percentage of ethnic minority peoples. Out of Cambodia’s total population of 9,672,615, the Ministry of Interior has estimated that 3.83% belong to ethnic minority groups (Grainger, 1997). Approximately 16 percent of the country’s minority peoples live in Ratanakiri; additional (but lower) numbers live in Steung Treng province and other northeastern provinces.

II.B.1. Ethnic Groups and Languages

The park area (which is defined here as the land within the officially designated boundary, and surrounding regions from which users are coming) is home to four major ethnic groups including: Kreung, Kavet, Brou, and Lao. In addition, there are small numbers of Tampuen, Kachok, Lun, ethnic Chinese, ethnic Khmer, and ethnic Vietnamese people. Specific numbers for each are not currently available; it is hoped that the recently completed census will provide accurate information. However, estimates for Ratanakiri put the number of Kreung at 14,000, or 22% of the provincial population (72,290 in 1994, according to the Ministry of Environment); Kavet at 2,000, or 3%; Brou at 5,500, or 9%; Lao at 6,500 or 10%; and Chinese at 200, or less than 1% (Colm 1997b). See Map 2. Ethnic Minorities in Northeastern Cambodia for a general presentation of their distribution.

Most scholars agree that the Kreung, Kavet, Brou, and Lun (the last of which are found in small numbers in Siem Pang) are from the same Mon-Khmer linguistic group. Local experts in these languages note few differences between the Kavet, Brou, and Lun.

II.B.2. Settlement Locations and Movements; Historical, Present and Future

The vast majority of the Mon-Khmer ethnic groups living in the park area today are descendants of people who lived in highland areas for centuries. As the historical locations and cultural practices of each group vary, information on each is presented separately. First, however, a summary of similar characteristics is provided. All of these groups except the Lao are considered "highland" or "upland" peoples; that is, they make their living in the hills and mountains of the area. Generally found within the 200-400 meter elevation range, highland families cut chamkar or swidden fields out of the forest, add to those a little each year for 1-3 years (depending on the soil quality), and then move on to a new field. Their preference seems to be using old fallowed fields, or secondary forest, covered by 5-20 years of regrowth, or secondary forest, before resorting to primary forest for clearing. Thus they typically use the same areas repeatedly. In addition to chamkar, the people rely heavily on forest products, including animals, fish, plants, trees, roots, and fruit, for subsistence. The richest supply of these products are primary forests, thus they have an extremely strong interest in protecting such areas.

There are approximately 60 villages located in or adjacent to the Park buffer zone (using Park resources directly), of which 51 villages are located in Ratanakiri Province and 9 in Steung Treng Province. Average village size is 190 persons or 40 families, excluding District Centers (based on a mosquito net distribution survey by World Concern, Ta Veng district). Many of the village settlements in both provinces are relatively new, not because the indigenous populations shift village locales regularly, but because their locations are artifacts of recent government initiatives to encourage resettlement of indigenous populations along major transportation channels.

II.B.2.1. The Kavet

The Kavet comprise the populations of highest interest in relation to park management in both Siem Pang and Veun Sai districts. Both Kavet and Brou villagers have said that before the 1960s they lived in much more dispersed settlements of 4-10 families, scattered throughout what is now the Park area. These settlements were not randomly dispersed, but were generally clustered in flood plains of several square kilometers in area, along some of the major streams in the Park, including the O Smang, O Lalay, O Kampha, and O TaBok.
Topographic maps of the area, based on 1958-59 aerial reconnaissance, give an indication of some of these original sites (AMS Series L607, 1:100,000, sheets 6437, 6337).

It appears as though the Kavet are gradually shifting their total swidden area toward the north, even though the total area is still parsed out according to village "zones." In Ta Veng, informal interviews with Kavet-Brou villagers suggest a very similar pattern of dispersed pre-war highland forest settlements, relocation to major rivers in the latter half of the 20th century, and only partial acceptance of paddy rice agriculture since then. These groups also are showing a tendency to move back to ancestral territories at the present time, according to interviews conducted with NGO and government officials in the area (Maxwell 1998). While officially situated on the Sesan and Sekong rivers today, a majority of highland communities now have chamkar fields in or just outside the park and live there for 9-10 months out of the year.

Many of these areas are not as fertile as the soils farther north, making the cycle of swidden-forest production less sustainable. NGOs working in Ratanakiri propose to develop activities to support improved methods leading to more sustainable production for these people. The likelihood is that if no technical assistance is provided to these people within the next few years, they will continue to move their chamkars north.

Kavet Villages in Siem Pang:

In Siem Pang district, the Kavet, or Kraveth, as some say, were settled decades ago in interior forests on the eastern side of the Sekong river, according to the chief of the district, Mr. Lun Van Di. He has identified sites settled as far back as the 1930s to 1950s, that are located well within the interior of current park boundaries, which follow the Ho Chi Minh trail from Laos and the O Kampath river between the Sekong and Ratanakiri. (See Map 3. Siem Pang Park and Village Sites.) According to residents of Teak Tiem village, before the Sihanouk era (1955-70), they were located in the Pang Pay mountains of the O Laleay watershed. They were moved by the government in the mid-late 1950s to live along the O Smang river; then moved again by the Khmer Rouge regime to the O Renong approximately four kilometers east of the Sekong river, where a small dam, now in partial disrepair, provided water resources for paddy production. Another group of unclear composition was moved near a stream farther east.

In 1979 the Kavet in Siem Pang fled to Laos to avoid being moved again. They returned in 1984 and the government settled them in six villages along the eastern side of the Sekong, just northeast of the district capital. This was part of a government effort, similar to that in Ratanakiri, to settle and control the residents of these villages. Government extension workers encouraged them to use the fertile paddy area just east of their village sites, but they were not paddy farmers. The six original Kavet villages are nominally still situated along the Sekong river. However, NGO staff working in the area and the district chief agree that these villages are villages in name only; two of the six originally built in the 1980s still maintain residents, primarily older women and children, for part of the year. Gradually, the Kavet are moving back to the forest east and north of their official locations to do chamkar.

The authors know of at least one new village, Hinsiv, which is comprised of nine families who left Kiribass Leu in 1991. These families sought a place to make chamkar close to their village site and to the river. Hinsiv is located roughly 3km from the Ho Chi Minh trail and 2km from O Chantang stream. Another, possibly new, village is called Khanmafung, situated on the west side of the Sekong river north of Nyang Sum. They may maintain chamkar on the east side. It was populated in 1994, according to the district chief, by families leaving Kiribass Leu and Kraom. Both sites are not mentioned in official statistics.

The two original Kavet sites on the Sekong that maintain a population on the river are O Chay and Teak Tiem villages. They also maintain sites farther east; O Chay village maintains chamkar sites within or just bordering the park boundary near the junction of the Ho Chi Minh road and the O Kamphat stream. Teak Tiem maintains chamkar along the O Smang, because the trees there were cut some time ago (i.e. practicing chamkar is easier there), according to the village chief. The rest have moved farther east on a fairly permanent basis to resume farming chamkar. O Chay, Teak Tiem, Kiribass Leu, and Kiribass Kraom maintain paddy relatively near the river. The latter two also maintain paddy on the upper O Smang.

Kirivongsa Leu and Kirivongsa Kraom (upper and lower Kirivongsa) villages moved back to the upper O Smang in 1993, and, according to the district chief, the government has refused to recognize them in this location. They have indicated a desire to continue moving east. All of the livelihood activities mentioned above are considered to be within the park buffer zone or the park itself if they take place north of route 194 and east of the Sekong.

Kavet Villages in Veun Sai:
In Veun Sai district, Ratanakiri, most Kavet villages traditionally were settlements of 5-10 families, located along streams in the upper O Lalay watershed, rotating swiddens along a roughly linear pattern following the stream. Each sub-village family grouping used an area extending approximately 5 km along a stream. Within that area, each plot might be actively farmed for 2 years and fallow for 3-5 years, so that a total of 3-4 plots were needed within each sub-village territory to allow a rotational system. The fallow period maintained its purpose of allowing the soil to rest in this short amount of time, compared to many swidden systems, as the dominant vegetation is bamboo, which grows rapidly and replenishes soil organic matter quickly. The traditional swidden system may not have involved much cutting of dense forest on the mountain slopes (Maxwell 1998). In informal discussions in Veun Sai town, a mixed group of men (park rangers and village volunteer rangers) from communities in this area identified the general locations and sizes of their communities’ chamkars. (No opportunity was available for discussion with local women.) See Map 4. Veun Sai Park and Village Sites.

II.B.2.2. The Kreung

A number of villages in Veun Sai district in Ratanakiri are Kreung. Exact ethnic make-up of villages in Veun Sai, outside of Kok Lak commune, will be available when census figures are released. Estimates are that the villages west of the district town are Kreung and include some Lao people. The district town itself is a mix of Chinese and Lao (and some say, Vietnamese). Those sites east of Veun Sai town include some Tampuen and Kachok peoples. In Ta Veng district, 4 villages are Kreung.

II.B.2.3. The Brou:

Nineteen of the 23 villages in Ta Veng are Brou. Most Ta Veng villages are in the same situation as those in Siem Pang and Veun Sai; that is, the government states that, officially, they are on the Sesan river, while in actuality, they live nearly all year in their chamkar in or near the park. Several Brou villages in Ta Veng do stay in the officially recognized sites on the river and cultivate paddy instead of chamkar, however. See Map 5. Ta Veng Park and Village Sites.

II.B.2.4. The Lao:

In Siem Pang district, Smoar and Chantuk villages are Lao-speaking but the people are mostly ethnic Khmer. Chantuk, for example, situated at the crossing of route 194 over the O Smang river, is comprised of 75 Lao-speaking families and 23 Lun families. Lao speakers generally practice paddy rice production, while Lun people make chamkar. The village was settled “a long time ago” according to local authorities, and has not moved. In Ratanakiri, a development worker who has been in the area for years estimates that 2/3 of the population of the western end of the Sesan in Veun Sai is Lao/Chinese, while 1/3 are highland peoples. Hat Pok, Phnom Kok, Pak Ulan, Tiem Krao, and Veun Sai all house numerous people of Lao descent. Government officials in all park area districts are largely Lao; very few are highlanders. Frequently highland people in this area learn Lao as a tool for communications beyond the village, rather than Khmer. The Lao traditionally maintain paddy rice fields near the Sesan river, and graze buffalo in grass fields in the same areas. They also conduct seasonal fishing in Sesan tributary streams.

II.B.2.5. Other groups:

In addition to the above, there are small groups of Tampuen, Kachok, ethnic Chinese, ethnic Khmer, and ethnic Vietnamese in the park area in Ratanakiri. While details of the differences in the locations and livelihoods from above groups are not currently available, a number of useful pieces of information were collected. For example, while this cannot be stated as a broad truth for all ethnic Chinese living in the area, repeated comments to the effect that most trade, including wildlife trade, is handled by this group, may point toward a need for environmental education and alternative income-generation activities with them in later projects. Most Chinese in the area live in Veun Sai town. They have lived there for a number of decades.

The Lun in Siem Pang were located closer to the park area during the Khmer Rouge regime; now they are on the river’s east side and in Chantuk village.

II.B.3. Population Size and Growth Patterns

Currently available information is fairly spotty. The table below, adapted from pre-census figures used by United Nations Fund for Population Activities (UNFPA) and Ministry of Planning census teams, provides what are assumed to be the most recent and accurate data. (Note: spelling for localities in the park area differ widely. We have used the spelling provided by the source in each case.)
Table 1. Population Figures for the Park and Surrounding Areas

<table>
<thead>
<tr>
<th>District</th>
<th>Commune</th>
<th>Village</th>
<th>Ethnic Group(s) where known</th>
<th>No. of households</th>
<th>No. of Persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Siem Pang</td>
<td>Santepheap</td>
<td>Kirivongsaa Leu</td>
<td>Kavet</td>
<td>89(-)</td>
<td>462(-)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kirivongsaa Kraom</td>
<td></td>
<td>48</td>
<td>275</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ou Chay</td>
<td></td>
<td>95(-)</td>
<td>477(-)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Teak tiem</td>
<td></td>
<td>52</td>
<td>282</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kiri Baas Leu</td>
<td></td>
<td>56</td>
<td>260(-)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kiri Baas Kraom</td>
<td></td>
<td>86</td>
<td>418</td>
</tr>
<tr>
<td>Seekong</td>
<td>Chantuk</td>
<td>Lao</td>
<td></td>
<td>89(-)</td>
<td>536(-)</td>
</tr>
<tr>
<td></td>
<td>Lon</td>
<td>Lun</td>
<td></td>
<td>39(+)</td>
<td>212(+)</td>
</tr>
<tr>
<td>Sub-totals:</td>
<td></td>
<td></td>
<td></td>
<td><strong>8</strong></td>
<td><strong>2922</strong></td>
</tr>
<tr>
<td>Veun Sai</td>
<td>Baan Pong</td>
<td>Baan Pong</td>
<td></td>
<td>140</td>
<td>787</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Baan Fang</td>
<td></td>
<td>168</td>
<td>813</td>
</tr>
<tr>
<td>Haat Pak</td>
<td>Haat Pak</td>
<td>Lun ?</td>
<td></td>
<td>106</td>
<td>640</td>
</tr>
<tr>
<td></td>
<td>Veun Hay</td>
<td></td>
<td></td>
<td>40</td>
<td>238</td>
</tr>
<tr>
<td></td>
<td>Pak Laav</td>
<td></td>
<td></td>
<td>20</td>
<td>238</td>
</tr>
<tr>
<td>Kaa Choun</td>
<td>Kaa Choun Leu</td>
<td>Tampuen ?</td>
<td></td>
<td>61</td>
<td>305</td>
</tr>
<tr>
<td></td>
<td>Kaa Choun Kraom</td>
<td></td>
<td></td>
<td>56</td>
<td>308</td>
</tr>
<tr>
<td></td>
<td>Vang</td>
<td></td>
<td></td>
<td>20</td>
<td>131</td>
</tr>
<tr>
<td></td>
<td>Vay</td>
<td></td>
<td></td>
<td>26</td>
<td>104</td>
</tr>
<tr>
<td></td>
<td>Tiem Leu</td>
<td></td>
<td></td>
<td>32</td>
<td>211</td>
</tr>
<tr>
<td></td>
<td>Kaa Lim</td>
<td></td>
<td></td>
<td>31</td>
<td>225</td>
</tr>
<tr>
<td>Kaoh Pang</td>
<td>Paa Toeng</td>
<td>Brou</td>
<td></td>
<td>40</td>
<td>244</td>
</tr>
<tr>
<td></td>
<td>Laang Aav</td>
<td></td>
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<td>29</td>
<td>173</td>
</tr>
<tr>
<td></td>
<td>Paa Hoy</td>
<td></td>
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</tr>
<tr>
<td>Kaoh Peak</td>
<td>Koh Peak</td>
<td></td>
<td></td>
<td>48</td>
<td>411</td>
</tr>
<tr>
<td></td>
<td>Phaaak Naam</td>
<td></td>
<td></td>
<td>58</td>
<td>413</td>
</tr>
<tr>
<td></td>
<td>Khuon</td>
<td></td>
<td></td>
<td>48</td>
<td>425</td>
</tr>
<tr>
<td>Kok Lak</td>
<td>Laa Lai</td>
<td>Kavet</td>
<td></td>
<td>57</td>
<td>249</td>
</tr>
<tr>
<td></td>
<td>Rak</td>
<td></td>
<td></td>
<td>88</td>
<td>433</td>
</tr>
<tr>
<td></td>
<td>Laa Meuy</td>
<td></td>
<td></td>
<td>65</td>
<td>416</td>
</tr>
<tr>
<td></td>
<td>Traak</td>
<td></td>
<td></td>
<td>28</td>
<td>180</td>
</tr>
<tr>
<td>Paak Kaa Lan</td>
<td>Paak Kaa Lan</td>
<td></td>
<td></td>
<td>104</td>
<td>545</td>
</tr>
<tr>
<td></td>
<td>Kampong Chaam</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phnum Kok</td>
<td>Phnum Kok Laav</td>
<td></td>
<td>Kreung or Brou?</td>
<td>28</td>
<td>168</td>
</tr>
</tbody>
</table>
Women usually outnumber men in villages of the Northeast region, due largely to great losses during various wars and occupations. For example, in Teak Tiem village in Siem Pang, the ratio of men per 100 women is 80;
and in O Chay, 71 (NRDP 1998).

Average household size varies. The National Institute of Statistics puts the average number of persons per household in the relevant Siem Pang communities between 4.4 and 6.0. This average carries out in many of the Ratanakiri villages as well. The problems of data quality persist in estimating population growth rates. A verbal estimate from local development workers is that the stable balance of births and deaths in minority villages, which have little access to modern medicine, has created a zero percent change per year. A commune chief in Siem Pang estimates that the population is growing in Kavet communities there at a rate of 2 percent per year. One published report puts the figure at 5.13% per year (DNCP/MOE, 1995).

Highland peoples are said to create new villages or move whole existing villages only every 2-3 generations on average. This is caused by population increases or in response to political events or other difficulties (Colm 1997). Most of the population growth in Ratanakiri is derived from immigration of ethnic Khmer and Lao people from lowland areas (Sugiarti 1997).

II. C. Subsistence Practices and Land Use

Subsistence food production and collection systems existing in the VNP area are indivisible from land use and land management practices. So integral to the survival of the ethnic minorities is access to their traditional lands for farming and forest collection, that a villager in Ratanakiri noted recently that "our [village] boundaries extend only to our chamkars – that’s one hour’s walk – but we support our living in an area much further than that, in the forest beyond our village boundaries. These forests are like our market place – they are where we find wildlife, malva nuts, rattan and so on. If a company takes those forests, we’ll be dead.” (Cited in Colm 1997: 11).

Self-sufficiency and reliance on traditional systems are also an integral component of local cultures. While acceptance of new ideas is occurring rapidly in many highland communities, those "modern" approaches that are easily integrated into customary ways are those that people can see have an advantage for them. Finally, most subsistence practices by minority populations are parts of a diverse, sustainable system, assuming certain conditions, such as low population density, and freedom from forcible relocation, are met.

II.C.1. Land Use

Land use among the people who use resources in Virachey National Park can be broken down at the most generalized level into 5 basic categories:

a. Village settlements
b. Swidden agriculture
c. Forest gathering and hunting
d. Wet-field rice agriculture
e. Conservation (Spirit Forests)

For each of these categories of present-day land use, recent history and change must be considered before describing, or attempting to assess the sustainability of, existing systems. Recent history and change is discussed in some detail in Section II.B.2. Settlement Locations and Movements. Although there are no accurate quantitative data concerning land use in the Virachey highlands (except unverified land use maps from IRIC, 1996), it is important to consider oral historical information from the indigenous communities themselves when considering evolution of the landscape and its biodiversity.

a. Village settlements

In Ratanakiri, villages are often laid out in a roughly circular arrangement, with a ceremonial or assembly hall located near the center of the village. Some of the villages, particularly those located right on the Sesan, follow the riverbank in a more linear arrangement, with roughly 100 meters between the riverbank and the forest or paddy edge. Houses for families of 7-10 are usually built on low pole supports. Long houses are not common in this part of Ratanakiri (Maxwell 1998). No information is currently available on patterns of village layout in
Siem Pang.

Settlements have household gardens within their boundaries; their most common products include gourds, pumpkin squashes, melons, tubers, chilies, pulses and greens, plus bananas, jackfruit, cashew, milkfruit and papaya from the trees. Kapok trees are common as village markers, and, along with banana groves, may serve ceremonial purposes. Animal traffic includes dogs, pigs, chickens, and some buffaloes and oxen. Dogs help with guarding and hunting. The other animals are needed for food, sacrificial ceremonies, and plowing.

b. Swidden Agriculture Systems

Swidden-forest systems in the park area are characterized by a high level of complexity. With their wide diversity of crops and collected foods, and stepped harvest periods throughout the year to ensure food security, they are well-regulated and sophisticated systems. (See Figure 1.)

The type of agriculture variously termed slash-and-burn, shifting cultivation, swidden, and locally referred to as chamkar, is the dominant mode of agricultural production for the indigenous populations in the park buffer zone. Swidden cultivation in Ratanakiri, as in most areas where it is common, has never been studied systematically, so assessments of its sustainability are spurious, usually based on strongly biased, anecdotal observations. The common attitude that swidden systems cause deforestation because the plots are cleared and burned from forest, is almost never balanced by any consideration of ecological processes involved in forest recovery, nor by consideration of the variation in impact among different swidden methods, nor by comparison for damage occurring from other causes of tree-felling. Since Conklin (1954) and Geertz (1963) first suggested that swidden was a "canny imitation of the tropical forest," which reflects evolved relationships between people and forests, there has been a trend among researchers to try to pinpoint conditions under which swidden methods may be sustainable (Kunstadter et al. 1978; Dove 1983). There is a consensus among researchers that swidden sustainability often depends on the length of the fallow period, which allows forest recovery after cultivation, and that destructive changes in traditional cultivation/fallow regimes are often related to the pressure of increasing regional population density. In this light, it should be borne in mind that population density in Virachey National Park and its buffer zone is still extremely low compared to most ecological subregions in Southeast Asia, and, in fact, the population density of the park may actually be lower now than it was during the long period of time when the park's diverse biota and landscape were evolving. Park management planners should carefully consider how traditional chamkar methods in the Virachey highlands might be seen as an essential component in the evolution of its biodiversity, and how those methods might be incorporated into plans for the conservation of that biodiversity.

Chamkar is the traditional agricultural system used by highland, indigenous populations almost exclusively. According to available information, ethnic Lao villages in Veun Sai and Siem Pang districts do not engage in swidden cultivation in the park area.

Figure 1. Food Production and Collection Calendar: Stages of Activity and Availability

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bamboo shoots</td>
<td>Bamboo shoots</td>
<td>Bamboo shoots</td>
<td></td>
</tr>
<tr>
<td>Forest cassava</td>
<td>Forest cassava</td>
<td>Forest cassava</td>
<td></td>
</tr>
<tr>
<td>Yams</td>
<td>Yams</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green leaves</td>
<td>Earth mushrooms</td>
<td>Earth mushrooms</td>
<td></td>
</tr>
<tr>
<td>Cold mushrooms</td>
<td>Latex mushrooms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fruits</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chamkar preparation involves a number of careful steps. Families (sometimes only men) cut forest in January, let it dry through February, and burn it in March and April. In the rainy season they plant upland rice, vegetables, fruit trees, and herbal and medicinal plants. Chamkars typically house a wide variety of crops, and even within the bounds of one crop, there are usually several different species. For example, rice, the staple crop of the upland farming system, is usually sown with 3-7 varieties that can be harvested at different periods in the year, but the number of species goes up to 26 in several Kreung villages, and up to 28 in Lalay village,
Veun Sai (Emerson 1997). Other chamkar crops include: herbs and spices, legumes, roots, gourds, melons and cucurbits, sugar cane, chilli, corn, and onions. There are wide differences in the varieties and amounts of food crops produced by minority groups and even between villages belonging to the same group. Perennial trees and shrubs are also grown, both in villages and around chamkar houses.

The majority of the Kavet and Brou populations may only stay in the villages for two-three months of the year, after harvest. (It is not known what differences there may be in Lun chamkar, only that they do this and not paddy.) This period occurs roughly from November to January-February, after which preparation of swidden fields begins. The rest of the time most people establish residence in their chamkars. Usually, however, some people remain in the village throughout the year to guard houses and take care of gardens, fruit trees and paddy rice fields.

At present, Kavet people in Kok Lak commune in Veun Sai district, cultivate plots for 1-3 years (rarely 3 years), depending on the productivity of the site. Active plots cover 2-3 ha. per household. Individual plots may be expanded by roughly 30% in the second year (and again in the third year). Cultivation continues until decreasing productivity from the plot no longer justifies working such a large area. In their current total swidden area, along the lower O Lalay, on both sides of the Royal Decree Boundary, plots are cut from varying successional stages of secondary semi-evergreen forest. Some of these forests may not have been cut for 20-30 years or longer.

For Kok Lak commune, two important observations should be kept in mind: 1) the current swidden regime seems not to be sustainable, in the sense that land requirements are high, and more relatively old forest is cleared each year than is allowed to recover. Rather than being a contained, rotational system, their chamkar area is constantly shifting into new areas of relatively mature forest. However, 2) the Kavet traditionally did not cut chamkar from forests at the foot slopes of the mountains, as they are now doing, but rather cut patches from bamboo forests located within what is now the park. This traditional bamboo swidden was, according to oral histories, more rotational in nature than their current system. Park management planners should consider that the traditional bamboo swidden system may be sustainable and compatible with conservation objectives for the park.

Development personnel familiar with Kok Lak commune have noted that the residents are gradually shifting their swidden areas up into the park. Rather than being seen as inexorable encroachment on park territory, this may be a reversion to a simpler, more efficient, more familiar and less destructive livelihood than the one the Kavet have been led to adopt by artificial resettlement.

c. Forest gathering and hunting

In addition to the swiddens, the use of forest products is an essential part of the subsistence system for minorities. In the dry season, the forest becomes the "cupboard" for them; it provides the food they typically need to sustain them from the time the rice runs out until the next harvest (between February and October). Women and children collect forest cassava (k’doich) and dumloang, fruit, nuts, leaves, medicinal plants, fuelwood, thatch and basket materials, and small fish from streams. Men hunt for small animals for food, fish for larger species, cut poles for construction and timber for coffins. The district chief of Siem Pang notes that the Kavet people still hunt all kinds of animals (including elephants, of which he says there are still many) for food and trade, not only small ones. During the Khmer Rouge period and the 1980s, guns were widely available and the result has been an increase in hunting. In recent years, the government bought back a number of these weapons.

Virachey National Park is a source for numerous non-timber forest products (NTFPs) and wildlife, used by the indigenous communities both for subsistence and for trade. The areas used for hunting and collection of NTFPs are much more extensive and often much farther from village sites than chamkars. Unfortunately, there is very little information about the details of hunting or collection in the park area, and what little information is available comes from informal interviews with villagers, primarily in Veun Sai District.

The most important non-timber forest product in Virachey is rattan (pdao, in Khmer). There is currently no good information on the distribution of rattan resources in the park area, and such a map is needed to begin to assess its potential value for community development, and to develop plans for its sustainable management.

Other essential NTFPs include bamboo, malva nuts (samrong), and a host of other plants and plant products which are used for construction, tools, crafts, food, and traditional medicine. From one study near the park (Bann 1997) approximately 300 types of forest plants were found to be used by Kreung villagers. Many of the plant uses recorded in O Chum are probably also widespread in the park area. At least rattan, bamboo, and samrong are known to be abundant in the forests of the Virachey highlands.
Villagers have also traditionally hunted in the highland forests. Although there is a consistent observation that wildlife populations have declined significantly since the early 1980s, reports are still common of large animals like tiger, himalayan black bear, malayan sun bear, gaur, Sambar deer, muntjak and civet. The most commonly traded animals are turtles, monitor lizards, and pangolins. For subsistence hunting (e.g., for rabbits, forest rats, etc.), villagers do not have to go far.

Hunting and forest collection, from a land use perspective, are relatively extensive activities. Depending on the product and its intended use (for food, trading, selling for money, etc.) villagers may go as far as two days from the village for hunting. Hunting grounds may, theoretically, overlap with those of another village, based on information from communities south of the Sesan. However, there are so few communities located north of the river that hunting grounds may not overlap, simply because one commune's territory may be too far from another commune to make it worthwhile to use. Park volunteer rangers from Kok Lak Commune indicated that their present hunting territory includes the whole upper O Lalay watershed (several thousand hectares), plus any fruitful territory between the watershed and their village. Kok Lak villagers have indicated that, although they know that wildlife is abundant at Phnom Veal Thom, a mountainous area noted for being rich in wildlife, they do not necessarily go there. Koh Pang commune serves as the gateway to Phnom Veal Thom, because of relative ease of access, but even villagers there may not have been to the mountain, 18-20 km to the north, for several years. Ta Veng villagers also may go far to the north for hunting, although there is no clear information from that area. Basically, the villagers indicate that land they choose for hunting is the closest productive land. Since the early 1980s, all have had to go farther from their villages for hunting. If wildlife populations could be restored in the lower park area, villagers would not have to go so far.

Since the 1960s, government desires to see the minority peoples settled in closer physical proximity to the centers of power, and the increasing conversion of the park areas to a market economy, have created pressures on the traditional swidden cycle and local culture.

Table 2. Natural Resource-based Food Products in Swidden-Forest Systems

<table>
<thead>
<tr>
<th>Products</th>
<th>From House/Garden</th>
<th>From Chamkar</th>
<th>From Watershed</th>
<th>Forest/Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bamboo shoots</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forest cassava</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mushrooms (13 types)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leafy vegetable (3 types)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elephant trunk leaves</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yams (5 types)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taro</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mango (2 types)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rambutan</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malva nut</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plum</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other fruits (at least 4 types)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gourds, chilies, fruit, pumpkins, melons, tubers, herbs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic Animals</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rice (up to 28 types)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sugar cane, onion, corn</td>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>

Table 2. illustrates the range of germplasm biodiversity being preserved through the use of this combined swidden-forest system. The NTFP study identified more than 60 forest vegetables and 21 forest fruits being collected and used, and the number and types vary from village to village (Emerson, 1997: 13). As noted, Bann’s study (1997) found approximately 300 types of forest plants in use by villagers. Biodiversity experts in
other countries have noted that agroecosystem biodiversity in traditional farming systems often greatly exceeds that of monocultural and more permanent cropping systems. The ecosystem and cultural services provided by this biodiversity should not be underestimated. It is important to note that there is a greater variety of forest products available in evergreen than in deciduous dipterocarp forests (Emerson, 1997: 13-14).

d. Wet-field Rice Agriculture

Located near most of the villages in the park buffer zone are low flat areas suitable for paddy rice. In Ratanakiri paddy rice depends on rain; there is no irrigation other than rudimentary flow control channels. Rice fields are located mostly on the Sesan flood plain, in alluvial soils of intermediate fertility. Production for paddy rice averages more tons per hectare than chamkar rice, yet the number of varieties are fewer. Commercial fertilizers or pesticides are not used, and seed stock is native (Maxwell 1998).

Paddy rice is relatively new to the indigenous peoples, largely for the same reasons that official village locations are new. Along with governments’ initiatives to resettle highlanders away from traditional dispersed highland sites, there have persisted, up to the present day, government attitudes and policies which discourage swidden agriculture in favor of wet rice agriculture. Many of the indigenous peoples were first introduced to paddy rice during the Khmer Rouge era, which, in this part of Cambodia, began as early as the mid-1960s, but took hold in the early 1970s. Many villages (5000 people) upstream of Veun Sai fled to Vietnam or Laos in 1974 and did not return until after 1979 (Colm, pers. comm). For the Kavet in Kok Lak commune, moved down to the Sesan in 1975-76, the introduction to paddy rice was disastrous. Many villagers were killed for breaking their plows or letting their buffaloes die, as they were unfamiliar with using either. Although many villages in the park buffer zone have by now partially adapted to wet rice cultivation, buffer zone management planners should keep in mind the history of the villagers’ initiation to this system, which may affect their receptivity to its adoption.

Another issue that may be changing the community-oriented culture of many minority villages relates to competition for labor in raising paddy and chamkar crops. As paddy is cultivated in the same seasonal period as chamkar, communities that maintain both must be split for a significant part of the year. The division within the community on who maintains paddy and who maintains chamkar seems to depend on the family group and its desires. No clear pattern emerges from current information. This issue could have significant gender implications and park managers should study it further.

Ethnic Lao villages in Veun Sai and Siem Pang districts have traditionally relied exclusively on wet rice for agricultural production (along with village gardens). A number of highland communities who learned paddy farming techniques during the resettlement period, have received buffaloes from an international NGO to aide in farming. Paddies are prepared in May or early June, at the beginning of the rainy season, and plowing requires the use of buffaloes. Rice is planted in June and is harvested in December-February. According to one study, minority people are not opposed to switching to lowland rice production to achieve improved food security. However, this would require adequate technical assistance and other inputs, and would impinge on a number of cultural/diet values held by the people. Women are concerned, Sri Sugarti notes, "that this will (sic) change the variety of the family diet. They need vegetables, because they cannot eat rice only...The [culturally-held] value of self-sufficiency does not allow them to buy [vegetables] when they can produce by themselves." (1997, p. 4)

In ethnic Lao villages in Veun Sai and Siem Pang Districts (Smoar and Chantuk) residents generally stay in the villages throughout the year, as agricultural production depends almost exclusively on paddy rice, not swidden. Here oxen are used for cart transportation. The Lao in Veun Sai maintain paddy rice fields north and south of the Sesan river, and graze buffalo in grass fields in adjacent areas. They are reputed to set fires for hunting wildlife in these fields, and to conduct seasonal, and unsustainable, fishing in Sesan tributary streams using modern fishing methods, although this has not been confirmed. The Kreung and Brou of Ta Veng, and the Kavet of Veun Sai, are also known to use poisons. No information on the roles of women and men in the Lao livelihood system is currently available.

e. Spirit Forests

Another key component of the highlanders land use system is the spirit forest. For more details on how these areas represent conservation sites and are culturally important, see Section II.E. It is not known if ethnic lowland peoples maintain such conservation areas.

II. D. Economy

II.D.1. Subsistence Economies:
Fundamental to the traditions of ethnic minorities in Ratanakiri is a belief in self-sufficiency. In addition to the food production and collection activities described earlier, and which form the basis for the subsistence economy in ethnic minority communities, a number of other activities involving local production are considered essential to the livelihood and culture. Production and collection of natural resources materials for house construction, fuelwood, ceremonies, and other things come under this heading (see Table 3. for an illustrative list of several non-food products used).

Table 3. Non-food Subsistence Products (illustrative list only)

<table>
<thead>
<tr>
<th>Non-food Product</th>
<th>Use (m-men, w-women)</th>
<th>From Chamkar</th>
<th>From Forest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rattan (8+ types)</td>
<td>Making baskets (m,w), rope</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Bamboo (3-14 types)</td>
<td>House construction (m), roofing (w), flooring, walls (w), fencing, baskets, fish and animal traps, axe handles (m), cooking and storing rice (w), rafts</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Gourds (4+ types)</td>
<td>Water or seed storage and transport</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Grass and leaves (3 types)</td>
<td>Mat weaving, brooms, storage boxes</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Tree trunks</td>
<td>Carving mortar and pestle, corner posts on houses (small trunks), altars/shrines, canoes, coffins (m)</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Resin</td>
<td>Torch and lamp fuel, boat caulking, basket dye</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Incense</td>
<td>Air odorizer, ceremonial use</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Dyes (2 types)</td>
<td>Coloring clothing in traditional patterns</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Cotton</td>
<td>Weaving clothing and blankets</td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

(Table adapted from Emerson, pp. 20-34.)

Rattan and bamboo, for instance, provide material for making baskets, which people need to collect all manner of items from the forest. Bamboo provides the materials required both for domestic use and for trade outside the community (through Veun Sai town). Indeed, Kok Lak commune villagers continue to trade the large ph’or bamboo in Veun Sai, which they began doing long ago from their traditional village sites.

II.D.2. Market Economic Activity:

The NTFP study found that most ethnic communities collect forest fruits largely only for household consumption, except for malva nuts. These are sold to traders from the bigger towns, then forwarded to Phnom Penh and Vietnam. Malva nut trees produce small to moderate amounts of fruit for six years, and in the seventh year, produce a bumper crop. At this time, one tree can yield up to 100 kg of nuts, which can be sold at an average of 1500-2500 riel/kg, depending on proximity to traders and markets (Bann 1997). This is an extremely important NTFP for ethnic minorities.

Using traditional collection methods, villagers would collect malva nuts after they have fallen. As the price has increased in recent years, they have increased the practice of cutting down the trees to collect all the nuts at once. This activity has implications for sustainable forest management, and should be considered in any community-based natural resource management plan. As an illustration, residents of Chouy village in Ta Veng began cutting the trees only last year; previously they had forgone this more profitable route as they feared the forest spirits in those trees. The fact that they no longer hold this belief indicates a market-driven erosion in the traditional culture, which would otherwise be helpful in protecting forest resources (Emerson, 1997: 16).

Rattan occurs widely and is relatively easy to obtain, yet some types grow slowly and could become scarce if demand was to rise. One Kok Lak villager, in explaining the community economy, said "rattan is our gold." (Gordon Paterson, pers.comm., February 1998). Without it the villagers would be poor. Rattan comes from dense, moist forests, and only mature stems are commercially valuable. For the varieties growing in Ratanakiri, it is not clear how quickly it grows or whether it might be somehow cultivated, but development workers estimate that individual stems in a forest may need to grow for 20 years before they are commercially usable. Estimates of its value come from a study for northern O Chum district (Bann 1997) where rattan is valued at 750 riel (approx. US$0.30) per kg in local markets, and each household harvests 50-100 kg per year.
Extraction of rattan from an area north of the Sesan in Ta Veng is occurring on an increasing basis, and flowing out of the country into Vietnam, according to two NGOs and a number of villagers in the area (Maxwell 1998). If this interest were to be captured and utilized by local people, rather than extracted out from under them, planned approaches could be better implemented with the help of local NGOs, for example. The Kavet of Veun Sai also derive a substantial amount of income from selling bamboo in the district town for 300-400 riel per 6-10 meter piece.

As tourism to Ratanakiri expands, handicrafts made by minority villages sell for higher prices in Ban Lung than they would fetch in the village. Baskets, for example, cost 3000-5000 riel in a village, but up to 25,000 riel in the capital. It takes a man or woman (both make baskets) three evenings to make one basket.

Steel is another important local product, but one which relies on the outside market for supply. Kavet men, in particular, are known for the hoes, knives, and other tools needed in farming and forest life. Some products made of steel locally are sold to their Lao neighbors.

Other information gathering efforts conducted by the authors for the current report also found anecdotal evidence of substantial trade in wildlife, particularly among the Kavet in Siem Pang, and among unnamed communities in Veun Sai. Smoar and Chantuk villages were mentioned as villages that trade in wildlife through Veun Sai (along the road between Siem Pang and Veun Sai). These wildlife typically include (according to Lun Van Di): pangolins (a type of scaly anteater), bear, kouprey, cranes, and deer. He also believes that animals are sold across the district in Laos, not up the river. The same is true for log exports, he says. Until a few years ago log exports were driven up through the mountains to the border; now they are taken across the district westward to Laos. One recent visitor to Siem Pang said there are many logging trucks and much logging activity in the district (W. Russyk, pers.com., March 22, 1998). Sources in the area add that a new agreement is in place recently between the military in Steung Treng province and a Taiwanese company that has a history with the Lao military over the border. The agreement is purported to propose a new road between the Lao border near the Khone Falls and Steung Treng town, and then due east to Vietnam across Ratanakiri. It is not clear what purpose this road would serve, as the Lao border at this point is officially closed.

The fishing trade in Steung Treng is also very active, and relates to both Sekong and Sesan tributaries as many of the species upon which highland and lowland people in the park area depend spawn here (Baird, 1995). The Fisheries department is said to reward the highest bidder every year with exclusive fishing licenses for various points on the Mekong and Sekong tributaries. There is strong evidence that this fishery is exploited in a highly unsustainable manner. The use of grenades, poisons, electric wires, and tight-weave bamboo screens are commonly cited.

The ethnic Chinese and Vietnamese are reputed to be primarily traders in Veun Sai; they are said to be based in the district capital and to ply the rivers or to receive custom in their homes and shops trading goods to local people and buying from them. From local people they buy rice, wildlife, and handicrafts; they sell salt, MSG, clothes, cooking pots, mats, medicine, livestock and tobacco.

II. E. Cultural Issues and Conservation

Swidden-forest systems are closely tied to local beliefs and culture among minority communities in the park area. Emerson notes that different groups share many customs, but also have differences, even within the same minority group. This makes it necessary to approach resource conservation efforts in the area in a way that is tailored to the specific practices and beliefs of the village concerned. Blanket approaches will likely be less effective.

For example, in discussing the potential for moving upland people away from the *chamkar* system toward more permanent paddy rice cultivation, Sugəarti notes, “we gain many insights about general[ly] sustainable approaches [from the “*chunchiet*” or minority system of livelihood], e.g. self-autonomy for local forest management, (traditional) democracy and leadership, safety net system for ... disadvantaged group[s], equity and gender-balance, and coping strategies...” (1997, p. 5) Thus the swidden food production system is not only used to support food production, but many aspects of cultural tradition as well.

Another culturally important component of highland livelihoods are conservation areas, or spirit forests. Spirit forest areas cannot be categorized using a standard, scientific classification system. Indigenous highlanders in Ratanakiri recognize these forest areas as home to particularly strong spirits. Often exploitation of any resources from such forests is prohibited, and violation of such taboos can result in serious disease or death for the offender and/or for adjacent villages. Besides exploitation, there may be other activities prohibited in spirit forests, such as swearing, talking loud, or breaking branches.
As an example, when loggers recently began cutting timber in a spirit forest in northern O Chum district, a village elder went to inspect the damage. He did not confront the loggers, but on his return to the village he succumbed to a high fever and died three days later. Villagers attributed his demise to angry spirits, offended by the elder's neglect in protecting the forest. In this case, the loggers may not have suffered any particular ill effects of their actions, but the elder was apparently held accountable for not adequately caring for the forest. This indicates that although visitors may, or may not, be able to flout traditional taboos with impunity, villagers responsible for the land area will suffer for offenses to the forest spirits (G. Paterson, pers.comm., 1998).

Although there is presently no information on spirit forests in the park, community land-use maps from other areas in Ratanakiri have always included some area for spirit forest, often on mountain tops. Park managers, in their efforts to include local communities in park planning, need to keep in mind that forest spirits are very real phenomena in the landscape experienced by indigenous communities.

II.F. Land Tenure

In recent years, development literature has focused increasingly on the importance of land tenure or land security among local communities. This issue assumes particular importance in places where local indigenous communities represent evolved customary land use systems which are not readily recognized by an imposed national legal structure. From the standpoint of conservation and natural resource management, it has become clear that local communities' land requirements must be explicitly recognized by the State if those communities are expected to participate in conservation of natural resources; otherwise there is no incentive for local communities' participation in the very demanding activities of resource planning and management.

Although there is no concrete information on the history of indigenous groups in the highlands of northeastern Cambodia, historical records back to the 4th century A.D. mention trade relations between coastal towns and highlanders (Hickey 1983). The earliest records mention the power of the highland kingdoms and their rich natural resource base. Such groups as the Jarai were obviously long established in the highlands when tributary relations were recorded with the Khmer kings in 1600-1900s A.D.

Based on informal interviews with village elders, some description of traditional land tenure in northern Ratanakiri is possible. Before relocation in the 60s and 70s, settlements probably consisted of dispersed hamlets of 5-10 families, each hamlet occupying and using an area of land in which chamkars rotated over a period of 4-7 years. This regime (1-2 years cultivation, only 3-5 years fallow) worked as a rotational system in riparian bamboo groves, e.g., along streams in the upper O Lalay watershed. We don't have a clear idea of how, within each hamlet, chamkar areas were or are chosen by individual households. In nearby O Chum district, one member of a family may select a location based on simple observations of soil fertility or productivity, then confirm the appropriateness of the location based on the nature of dreams while sleeping in the site. This procedure and others observed in Ratanakiri generally involve first the selection a site based on potential productivity, followed by some action (ceremony or dreams) which indicate to the villager the support or resistance of spirits. In a Kreung village in O Chum, it was said that in a positive dream, the spirit would ask them to plant a certain type of banana which survived through the dry season. If bad dreams or another omen indicate displeasure of local spirits, another site is chosen. Availability of water nearby is important, as women, whose responsibility it is to collect water, would need much time to do so if it were not nearby (Kelkar et.al. 1997).

Two common misconceptions concerning swidden agriculture can adversely affect government acceptance of traditional tenure. One is that villages and village lands have always constantly shifted, that swidden cultivators are constantly degrading new forest areas. In fact, oral histories from the Virachey highlands and interviews with related ethnic groups elsewhere in Ratanakiri reveal that most village settlements and chamkars occur within long-standing geographical limits recognized by villagers and by other villages. Chamkars are rotated within these village boundaries, and even when village sites change, usually in response to a high rate of disease or mortality, the new site will be located within the recognized village territory. Exceptions do occur, especially as a result of government relocation initiatives of the 1960s and 70s. But established, long-term village territorial limits are the norm in Ratanakiri, not the exception.

The second misconception, related to the first, is that swiddens are cut from mature forest. In fact most swiddens in Ratanakiri choose sites of secondary forest for their chamkars. Some of these may be 10-20 years old, which early visitors may have considered mature because they were not accustomed to assessing the rapid regeneration of some tropical forests. The first criterion for selection of a chamkar site is soil fertility, as mentioned above. Another consideration is the labor involved in clearing, which could be quite a burden in mature forests where numerous large trees require much more time for felling and burning than in secondary forest. Swidden cultivators will thus avoid cutting mature forest where possible, when areas of productive secondary forest are available.
Other areas in Ratanakiri have yielded accounts that neighboring villages respect each others' traditional geographical limits. Formal boundaries have never been necessary, either because there was enough territory for each village's needs, or because territorial conflicts could be worked out by consensus among interested communities. Typically it is taboo for any villager to establish a plot which requires him or her to cross another village's *chamkar* area. In fact, permission of the "owner" is often required for a person from a neighboring village even to cross another family's *chamkar* (Colm 1997).

Most villages are defined by traceable relations to a common ancestor. In cases where villages become too large, they may split into two, e.g., Phnom Kok Leu (Upper Phnom Kok) and Phnom Kok Kraom (Lower Phnom Kok), or La Meuy Thom (Big La Meuy) and La Meuy Tuich (Little La Meuy). This does represent an expansion of territory, but is not a frequent occurrence.

For more information on land tenure, please see Section IV.A. Legal Framework.

II. G. Health

Provincial health in Ratanakiri revolves around the Provincial Hospital in Banlung and nine district health centers. Some NGOs (Health Unlimited, World Concern) have been working to improve access of villages to basic health services, but funding is very limited and the needs of the communities are overwhelming. Only World Concern is working in the park area, in Ta Veng district, and, at this point their program focuses on non-formal education.

Of the nine district health centers in Ratanakiri, three are located in the park area: one in Ta Veng, one in Veun Sai, and one in Kachong, a few km upstream from Veun Sai on the Sesan. For those centers, as for most of the province, malaria is by far the most serious health risk, based on the number of visits to district health centers (PHD summary figures, 1996-97). Although all district health centers have the capacity for blood testing and treatment of malaria, fatalities, province-wide, are 3% in the first half of 1997 and 2.5% for the whole year. The figure for highland villages may be much higher, as many cases go unreported, and access to treatment is difficult. The province is currently seeking European Community support for a malaria program.

Other specific threats to health in the park area include, in order of importance, diarrhea, lung infections, intestinal parasites, skin diseases, and throat infections. Many of these problems affect infants and children. Although there are no reliable figures for infant mortality, Som Siphal, Director of Operational District Health Centers in Ratanakiri, estimates (and this is corroborated by numerous informal interviews) that an average woman in the highlands will go through 7-9 births in her life, of which 2-3 children will survive to adulthood. The chief of Teak Tiem village in Siem Pang notes that at least two out of every ten children under the age of one die each year. Adulthood is a status reached early, as most marriages occur when men are 14-16 years old, and women are 13-14 years old.

One major problem is that villagers in the highlands have traditionally seen disease as an expression of angry spirits, so there is not an automatic impulse to turn to government health officials to resolve health problems. Some progress is being made in basic education about hygiene. Simple but pervasive problems with diarrhea and intestinal parasites in children could be alleviated by more careful cooking of foods and boiling of drinking water. Villagers in the park area have only recently been instructed in prevention of malaria, and many are still not accustomed to sleeping under mosquito nets, although nets have been distributed in several communes. Non-formal education programs in Kok Lak Commune and several villages in Ta Veng district are helping to address basic health issues, and there is some training of traditional birth attendants (TBAs).

Generally, physical access to medical care is one of the biggest problems in the province. The PHD does not have money for vehicles, per diem, sometimes even salaries for health workers to travel. Settlements are dispersed, and that situation is not likely to change. It is difficult both for health workers to reach villagers for care and education, and it is difficult, often impossible, for villagers to go to district health centers.

There is no good information about traditional health practices for communities in the park area, other than the observation that many NTFPs are used for traditional medical treatments, and the general observation that many problems are dealt with by animal sacrifice. However Joanna White (1995) has discussed traditional village health beliefs for a Kreung community in O Chum district. There is no information on health traditions in the local Lao communities.

Park planners should consider not only that communities using the park have the problems outlined above, but also that park staff and visitors (researchers and tourists) will have to be aware of the serious risks associated with endemic malaria. Park planning will have to consider that current government institutions are incapable of dealing with medical emergencies which might occur in the park, and that the nearest reliable health care is...
located 40 minutes from Veun Sai, in Banlung.

A brief survey of traditional medicinal use in Veun Sai and several other districts in Ratanakiri was conducted in early 1996. Healers in this area were interviewed, and interviewers accompanied them around their home villages of Lalay and Ka Lan to collect plant samples (Emerson, pp. 18-19).

The survey found that healers with extensive knowledge of medicinal plant use and custom outside their own extended family are the exception in minority communities. Most ethnic minority people obtain their medicine or have learned their knowledge from Khmer or Lao traditional healers, called Kru Khmai or Kru Barang. "The research suggested that 600-800 plants are used in traditional medicine" curing ailments such as diarrhea, fever, colds, malaria, vitamin deficiency, and post-natal disease. Plants are collected in primary forest, secondary growth, chamkars, river banks, paddies, and weed patches round villages. Tree-derived medicines made up 56% in the sample, 30% from shrubs, 10% from herbs and 4% from vines. Healers noted that they collect what they need without causing damage to the plant.

In Siem Pang, little is known about the health system. One NGO, Youth with a Mission (YWAM), is working with the Kavet villagers to train TBAs and village health volunteers. They have also helped build capacity at the district hospital in Siem Pang town across the Sekong river from the official Kavet village sites. However, to go there villagers require transport and they would often be coming from farther inland than the riverside sites. No government clinics or health staff are currently located in the park area.

II. H. Education

Formal education is practically non-existent in the park area. Villages generally do not have qualified teachers, and if they did, the teachers and students might not have time for school during normal daylight hours. For the province as a whole it is very difficult to find qualified teachers, following standards defined by the Ministry of Education, Youth and Sports in Phnom Penh. There are now about 2000 students attending the primary school in Banlung, and there is a very high dropout rate after grades 4-5. There is only one secondary school in the province, in Banlung, with 483 students, but again the dropout rate is very high after grade 9. Of the secondary school students in Banlung, only 5-10 are from Ta Veng and Veun Sai, most of them probably from Veun Sai town.

Because of the difficulties in implementing formal education, the Provincial Education Department has recently decided to put significant effort into a program of non-formal education (NFE). This effort is spearheaded by the provincial rural development committee (PRDC) NFE Working Group, in coordination with NGOs already involved in NFE, namely, CIDSE, NTFP, World Concern, and CARERE. Until recently, there was limited coordination among the NGOs, but there is a will to improve coordination of the content and coverage of the different projects in the near future.

The program calls for an initial 8-day training of NFE instructors. Trainees are villagers, usually two per village. They begin the first module of 50 lessons in basic Khmer literacy in their villages, with classes held at night. Attendance is restricted to 20-25 people per class, with preference given to women, VDC members, chiefs and vice-chiefs, and elders. The format is both instruction and discussion. There is frequent monitoring by NFE Working Group trainers during this initial module, which should be 2 visits per month. After three months, the instructors go through a 3-day refresher course. The first module should take approximately 4 months. World Concern has been trying instruction in Kreung literacy in a small number of Kreung villages in Ta Veng, using the Khmer alphabet. They report that villagers learn more quickly using this approach than nearby Brou villagers learning literacy in Khmer.

After initial instruction in literacy, subsequent modules may cover topics such as natural resource management, conservation and/or agriculture. It should be noted that although groups of lessons have been referred to here as modules, lessons after basic literacy may be designed as a stand-alone units, so that participants will not necessarily fall behind after missing one or two lessons.

Within the park area, World Concern is currently working in 7 out of the 21 villages in Ta Veng district. NTFP-Ratanakiri is working in one commune, Khum Kok Lak, out of a total of 8 communes in Veun Sai. It is not clear how or where the classes are scheduled when villages split up into hamlets during the chamkar season. Current ongoing activities in NFE are to be considered by the community participation coordinator during the park planning process proposed here. No schools are currently operating in park area communities in Siem Pang.

II. J. Gender Issues
Women’s roles in park area settlements have not been studied any more systematically than has society as a whole in that region. Nevertheless, recent studies in nearby areas provide an indication of the general position that women hold in highland communities. Women in ethnic Lao and other non-highland groups are also not well-studied. See Institutional Issues, below, for a discussion on women’s roles in village decision-making processes.

Upland swidden cultivation systems are, worldwide, considered as women’s farming systems (Kelkar et al. 1997). The multiple, stepped cropping and harvesting cycle is important for food providers, generally women, in meeting family needs and maintaining sustainability over time. If women in park area communities are indeed the holders of much of the knowledge about these systems, park planners and researchers studying the swidden systems during the project will need to ensure that highland women participate as research guides and informants.

Potential Constraints on Women’s Participation in Resource Management and Development Activities:

In the farming systems of highlanders, women are under heavy time constraints due to their dual roles as farmer and childcare/house care managers. They do not travel as frequently as men to sell or buy items in markets. Men often control finances and financial decisions in the family, as opposed to in Khmer/Lao/Chinese culture, where women manage the money. Women in highland cultures have an additional barrier to involvement in the economic sector due to their lower education in Khmer/Lao languages. Emerson suggests that this may lead, as trade increases, to a growing "gap in power relations" between women and men (1997a). Considering the unequal workload among highland women and men in nearby districts, estimated at approximately 14 hours for women to 9 hours for men (Van den Berg 1998), such a growing gap may affect women in an increasingly adverse manner.

Changes in the community-oriented nature of some traditional groups in the area are likely to be an issue of concern for the project. Sugianti demonstrated that “in Khmer/Lao society the poorest group is the most vulnerable, and women-headed households are the most vulnerable [of these]... [Yet,] in other ethnic group women-headed households are not necessarily the poorest...because the traditional society support system still works well” (1997). If changes in market access are increasing some women’s livelihood difficulties even in the community-oriented traditional societies, as Emerson claims, project planners will need to ensure that activities do not worsen the situation.

Another issue that may be changing the community-oriented culture of many minority villages relates to competition for labor in raising paddy and chamkar crops. As paddy is cultivated in the same seasonal period as chamkar, communities that maintain both must be split for a significant part of the year. The division within the community on who maintains paddy and who maintains chamkar seems to depend on the family group and its desires. Many communities in the park area are matrilineal, and bilocal, meaning they often pass land from generation to generation through their daughters, and new families locate either near or with the wife’s or husband’s family. Their location is determined by which family requires more labor assistance. Therefore, as the labor and production systems in the region shift, changes in this cultural system may also come about.

Although women historically have had full land rights in Cambodia, highland women fit into the category of ethnic minorities, as yet undefined by the state (see section on Legal Framework, below). Thus the interests of highland women may be threatened in the context of external pressures affecting their communities as whole. No clear pattern has yet emerged on trends in these areas from current information. Nevertheless, land and labor issues could have significant gender implications and park managers must study them further in the context of documenting participatory appraisal discussions.

II. J. Institutional Issues

Following are brief descriptions of some of the key institutions and societal structures in place and operating in the park area, particularly relating to community-level development:

Provincial Structures:

A key institution working to support rural development in each province is the provincial rural development committee (PRDC). The committee is a consortium of representatives from the governor’s office and various provincial departments, including the departments of environment, rural development, health, women’s affairs, agriculture, education, and others. These member institutions in the PRDC also have their own activities underway. Many cooperate closely with the IO/NGOs noted below.

Village Structures:
In a study conducted in two nearby districts in Ratanakiri, a governance system was documented in four villages of Kreung, Tampuen and Jorai peoples. Villages are guided by an elders’ council, a village development committee organized by the NGO CIDSE, and the village chief, appointed by the state. Important decisions, such as choosing a new village site, are discussed and agreed upon by all adult villagers, men and women. Membership in the elders’ councils is determined by inheritance; individual clans within the village have their own elders make decisions for them. Women were represented in one of the four village councils studied (Kelkar et. al. 1997). Women are frequently represented in VDCs in Cambodia, including in highland areas.

**International Organizations and Non-governmental Organizations:**

All IO/NGOs in Ratanakiri and Steung Treng work in close collaboration with appropriate government, provincial, district, commune, and village officials.

1. United Nations Development Program-CARERE: Since 1991, CARERE has been operating in Ratanakiri. The program supports the PRDC in planning, implementing, and capacity building for local-level development. PRDC establishes village development committees (VDC) in each village, after conducting a participatory rural appraisal, then supports the development efforts of the VDC. CARERE-PRDC works with 52 villages in Ratanakiri, of which four are in the park area in Kok Lak commune, Veun Sai district.

The International Development Research Centre (IDRC) has also merged with CARERE in their Ratanakiri program. IDRC staff focus on natural resource and land management research, and support to the Yeak Laom Protected Area communities, who are trying to preserve the volcanic lake and customary lands on which they live.

2. Health Unlimited: Since 1990, HU has been in Banlung, working with provincial health care staff to strengthen their efforts. They work on management, provide staff support, and provide training at the provincial level, and help organize community-level health care groups. The last of these initiatives is structured to work with VDCs in the areas where CARERE and another NGO, CIDSE, work.

3. Non-Timber Forest Products project: This Oxfam/NOVIB-supported NGO aims to help communities manage and protect natural resources, improve their quality of life, and strengthen their traditional and cultural identity. They provide technical assistance on natural resources and sustainable agricultural issues, and support a non-formal education (NFE) project, which is coordinated with CARERE, World Concern, and CIDSE. NTFP has supported the six villages in Poey commune, O Chum district, (near the park), in their efforts to develop a community forest management proposal and plan. NTFP works in Kok Lak commune in Veun Sai, and is planning work in the near future in Ta Veng.

4. World Concern: Since 1996, this NGO, which supports an NFE project and health care initiatives, has been operating in Banlung. It provides support to at least nine villages in Ta Veng district, and two in Banlung. World Concern aims to expand activities in the near future to include agricultural support and microcredit.

5. CIDSE: CIDSE works in approximately 26 villages in Ratanakiri helping communities determine their own priorities through participatory rural appraisal, then supporting them to establish small development projects including: rice banks, cow banks, local health care, literacy, sustainable agriculture, village volunteer veterinarians, reducing women’s workloads, capacity building for VDCs, etc.

6. World Wildlife Fund: WWF-Hanoi began providing support to the provincial environment department in early 1998. Its efforts are focused on strengthening the park staff capacities through training and providing basic equipment for ranger patrols and park management. WWF has an office in the Ministry of Environment in Phnom Penh.

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**III. PRESSURES ON LOCAL PEOPLE AND PARK NATURAL RESOURCES**

**III.A. The Potential Impacts of Effective Park Management on Local Livelihoods**

The question of potential impacts on local people is complicated by how "effective" park management is defined. This paper will define it as a process which, as described in the *Community Participation and Development Plan* submitted to the proposal team on March 12, closely involves communities in identifying and managing resource use in and around the park. Evidence has shown that approaches which fail to work constructively with communities reliant on park resources, as is the case with Virachey National Park, are...
doomed to be ineffective in protecting those resources.

In light of the secondary nature of the information used for this report, potential impacts can only be estimated. The VNP area is dominated by peoples that are heavily dependent on park-area natural resources for their livelihood. Some of these populations have been unhappy before with forces that have attempted to move them into other production systems and locations. It seems likely that cooperation may be difficult for park rangers to obtain, therefore, if park management plans call for excluding people from their traditional areas. If extensive consultation with affected populations takes place before decisions are made on park zoning and resource use, and adequate provision is made for alternative economic options identified in close collaboration with those populations, it appears that difficulties of this nature would be less likely to occur. In particular, "effective" planning that includes options such as "customary use zones," as have been considered in Preah Sihanouk (Ream) National Park in southern Cambodia, will support improved traditional resource use on a sustainable level and local livelihoods will not suffer unduly.

III.B. Other Pressures on Local Livelihoods and Park resources

Pressures on local people and park resources, that do not result from local livelihood practices, have also been identified anecdotally. These pressures include the following:

1. Fire in grassland areas bordering the Sesan in Ratanakiri
2. Planned hydro power development
3. Logging
4. Poaching
5. Rattan and bamboo extraction
6. Illegal fishing methods
7. Lowland peoples' applications for ownership of highland minorities' customary lands
8. Agroindustrial Development
9. Lack of Minority land tenure

For example, during a recent expedition to find out more about Siem Pang, an Environment Ministry team was effectively prevented from visiting a village in the park area by a group of soldiers, despite previous agreement from high-level officials. The team spoke with local officials familiar with activities in that village and learned that logging trucks are taking loads out of the area every day. No details are available to illustrate how this pressure is affecting villagers. In other areas of the country where this has occurred, however, villagers have had difficulty subsequently in finding the trees they need for collecting resin or building houses or coffins. They also typically are required to go farther afield for hunting, as wildlife declines are caused by the loss of habitat. See Colm 1997a for further detail on difficulties being posed to local communities in Ratanakiri where similar events are underway.

III. C. Social and Economic Factors that can affect the ability (positively or negatively) of local groups to effectively participate in park and buffer zone management activities

The socioeconomic factors that may impinge on local groups’ ability to participate effectively in park and buffer zone management can be defined as historical/cultural, geographical, and temporal. These are outlined below.

Historical and cultural factors can be explained through the different realities experienced by traditional peoples and "modern" cultures. Among Ratanakiri's highland populations, self-sufficiency is a cultural value that may help prevent the people from readily accepting the market economy in all its forms. This condition of subsistence may be perceived as "poverty" by outsiders, who cannot see the additional values often attached to it, including, for example: community cohesiveness and independence, and internal decision-making processes which place fairness high on the list of criteria. The historical and current lack of similar education and health infrastructures to lowland communities are another barrier, both to understanding and to the overall ability of highland communities to participate in modern society.

Physio-geographical factors are another aspect of life in the park area. Physical distance and difficulties in access to transport, communications, education, health, market access, and development assistance are common problems for remote communities. In the health sector, for example, physical access to medical care is one of the biggest dilemmas faced by local people. Provincial health officials do not have money for vehicles, per diem, or sometimes even salaries for health workers to travel. Settlements are dispersed, and that situation is unlikely to change. It is difficult both for health workers to reach villagers for care and education, and it is difficult, often impossible, for villagers to go to district health centers.

Market access is another area constrained by physical factors. Sugiarti’s market survey "shows that supply and
demand cause price fluctuation which cannot be easily followed by most farmers because information flow is impeded by bad transportation, roads, and communications. At the same time a monopolistic system applied (sic) to certain commodities, e.g. meat, herbal medicine, cashew nut, benefits only certain groups.” (1997a)

This is supported by Taylor, who assembled evidence of how uplanders are frequently negatively affected by increased marketing of non-wood forest products. Physical factors also constrain development assistance. Development has been provided to some areas of indigenous residents, but few are in the park area due to the difficulty in reaching it.

Temporal factors are an aspect of constraint on local participation that may be unique to ethnic minorities. Although most development activities must address their particular challenges in a limited amount of time, rural communities, particularly peoples holding somewhat different world views than their neighbors, may not always follow the desired schedule. One NGO working in Veun Sai district has gained experience in the area; staff there know that if the ideas presented to villagers are attractive to them, they will generally come to participate, once they have talked about it among themselves. This may take up to a year, according to Gordon Paterson (pers.comm. 1998).

IV. ETHNIC MINORITIES DEVELOPMENT PLAN

IV. A. Legal Framework

The history of the legal framework in which Cambodia’s ethnic minorities exist has been difficult, as illustrated by White and Bourdier: “Contact with the Khmers is recent. During the Sangkum period, the Cambodian government for the first time implemented national development policies, unfortunately without the agreement of the local population. The intention was to civilize and khmerize the people of the forest who were regarded as ignorant, superstitious, unable to manage themselves and sauvage....This appears to be completely false....Villages function according to customary notions...customary law,...means that spiritual forces do have...power....This...must not be perceived as mere superstitious beliefs...” (1996:23) In fact these customary laws are the only “legal frameworks” by which minority villagers still live in nearly all highland communities.

Legal structures have, by and large, not been a component of interaction between Cambodian Khmer authorities and the ethnic minorities of the park area. Many interactions have in fact been discordant, and have been caused by each side’s differing perceptions of the appropriate approach toward decision-making and development that should occur in the area. For example, in the late 1960s, HRH King Norodom Sihanouk admitted the people’s unhappiness with the national development policy implementation noted above [which required the resettlement of the people along the Sesan and Sekong rivers], yet he maintained that the priority problem with Ratanakiri was underpopulation and that they needed more roads and immigration to solve it (Realités Cambodgiennes 1968, cited in Colm 1997b: 31).

An even more noteworthy illustration of this extralegal relationship is indigenous people’s involvement in Khmer Rouge activities. Among minority villagers, disenchantment with government resettlement policies created a willingness to listen to and work with the rebel movement. When General Lon Nol took power in a 1970 coup, the Khmer Rouge manipulated local sentiment throughout the Northeast to maintain and increase its hold, and the General never regained control of Kratie, Steung Treng, Ratanakiri, or Mondukiri (Colm 1997b).

In recent years the people and the government have finally begun discussing the value of Cambodia’s minorities and cultural diversity in general. In June 1997, after numerous, participatory workshops around the country, a policy was drafted to address the interests of highland peoples and national policy makers. The writers, members of the government’s Interministerial Committee (IMC) on Highland Peoples Development, a high-level group housed within the Ministry of Rural Development (MRD), discuss issues related to land, environment, agriculture, education, health, culture, and infrastructure. Representatives from highland communities and international non-governmental organizations see this policy as a progressive and urgently needed step (see Appendix 3. Proposed Policy Guidelines on Highland Peoples Development). As of November 1997, however, the policy had not yet been approved and signed into law.

The proposed policy for highland peoples development states: “All highland peoples have [the] right to practice their own cultures and adhere to their religions and traditions. Leaders, elders, women as well as men will be involved in the process of development and cultural preservation. Local organizations or associations established by highland peoples to conserve and strengthen their cultures and to manage their natural resources are strongly encouraged by the government.” And: “Provincial Rural Development Committee structure[s] and traditional local organizations shall be enabled to determine development priorities and implement development activities, as well as managing their natural resources and environment” (IMC 1997a, points 2 and 5).
Point 3 declares that: “The Royal Government, together with the Provincial government and Highland people’s communities, shall establish procedures to recognize and protect customary land use rights of the highland peoples and to avoid further unlawful deforestation. The highland people must be consulted and agreement must be made to ensure that benefits will be shared by the highland peoples.” These three points clearly refer to issues developed in the BPAMP proposal.

Particularly relevant to the park management project are the following points from the draft policy guidelines (Appendix 3.): “The government will ensure that the lands the highland people traditionally occupy and have used over the past centuries are identified and protected. This includes the lands to which they have access but which are not exclusively used by them.” (IMC 1997b, pt. 2.2) And: “The customary land rights and the demarcation of customary village boundaries shall be recognized, endorsed and protected by the government....” (Pt. 2.3) The project must support the formalization of these guidelines in action and in intent.

Over the last several years there has also been increasing recognition from the Ratanakiri provincial government and IO/NGOs that indigenous communities should be granted rights of secure access to land-based resources which they have traditionally used. Following pilot studies from O Chuon, Banlung, and O Yadao districts, several options for land security were outlined in a provincial seminar held in Banlung in March, 1997. The seminar outlined three basic approaches as appropriate for indigenous communities to secure access to their paddy fields, chamkars, and/or collection forests (Colm 1997a). All of these options are available within the constraints of current Cambodian land laws:

1. Individuals may gain title to up to 5 hectares of land for agricultural use, usually for wet rice production. This is the most common type of title for lowland Cambodia.
2. Villages could apply for title as associations, and manage the village land communally. This option is specified by article 36 of the 1992 Land Law, but no precedent existed in Cambodia as of 1997. It is an appropriate adaptation of the national land law to the traditional tenure systems of indigenous highland communities.
3. A village or villages could form an association to apply for long-term concession of usufructory rights in relatively mature forests. Traditional highland collection and hunting forests, and some spirit forests, would be managed as community forests by the associations, with guidance and support from relevant government agencies -- these include the Ministry of Agriculture, Forests and Fisheries (MAFF), MAFF’s Forestry Department, the Ministry of Environment (MOE), the MRD, and the Ministry of Interior.

Since the 1997 seminar, initiatives to acknowledge land security for indigenous groups have continued with the strong support of the Provincial Governor’s Office. As of March 1998, there is support at both the provincial and national levels for a subdecree which has been drafted to clarify the conditions for communal title to village lands. Related to this is a province-wide program in land rights education, sponsored by Departments of Land Titles, MRD, provincial forest, agriculture, and environment departments, the NGO CARERE, and ADHOC (a Cambodian human rights NGO). This land rights education program will be implemented in several districts in 1998.

No such initiatives are present in Steung Treng, where outside groups are heavily exploiting the area’s natural resources. Minority communities in Siem Pang district, near the park, are severely affected by this over exploitation. Legal protection is urgently needed there. This project also aims to improve protection and management efforts in collaboration with ethnic Lao and other lowland communities in the park area, and with the wider body of stakeholders through the region. For further background on how current land use and tenure conditions evolved, please see Section II.C.

IV.B. Strategy for Local Participation

This strategy for community participation and development corresponds with the approach of the World Bank project proposal to strengthen the capacity of the Ministry of Environment to conserve biodiversity in protected areas in collaboration with local stakeholders, specifically in Virachey National Park (VNP). This approach will help optimize protection of biodiversity by systematizing adequate consideration of the needs of communities and stakeholders, particularly ethnic minorities, surrounding VNP and other protected areas.

A. Strategy for Community Participation and Development

The objectives of this strategy are: to enhance park management by including the knowledge, views, and cultural traditions/ideas of local communities dependent on park resources in the design of a management plan; to build on local communities’ inherent interest in resource use and movement toward improved park management and toward improved livelihood approaches in communities; to build local ability to manage park resources on a sustainable basis (i.e. after external funding ceases); and to help lessen destruction of park resources by communities in need of sustainable livelihoods. The project will build on the “adaptive
management” model, which integrates monitoring and evaluation directly into the planning and implementation processes.

I. Overview of Community-level Approach:

a. Park area communities: In each park-area village, the project will conduct participatory information collection exercises (such as PRAs). There are approximately 60 villages seen as directly dependent on park resources. The World Bank mission in Cambodia decided in March 1998 to work throughout the park area to build knowledge about the socio-economic and biological situation, to build a base of support for the project, and to identify communities that are encroaching closely on park resources and determine with them how best to protect the resources. This initiative is part of a network of project activities, including park management plan development, map development, biological and agricultural research, socio-economic information collection, and local level development pilot projects. It would lay the groundwork and begin the information collection leading these other activities. See Schedule of Implementation, below for the time frame in which this will occur.

The PRA program will be conducted using commune-level teams (see next page) that will be in place throughout the project. Non-formal education will also be conducted in each village. Village volunteer rangers will be elected from each village and these will have a key role in both the PRAs and the NFE program. Information on natural resource use and socioeconomic status, and the “priority felt needs” of each village, as determined during the PRAs, would help provide general direction for the participatory and socioeconomic aspects of the overall park management plan. Volunteer rangers will act as key liaisons between villages and park ranger staff, provide guiding services and natural resource knowledge to ranger teams and biologist research teams, as recommended in the draft policy guidelines (point 1.7, see Appendix 3.). Most villages involved will be comprised of ethnic minorities, including Kavet, Kreung, Brou, Lao and Lun. Some may also have ethnic Tampuen, Kachok, Khmer, Chinese, Vietnamese, and other groups represented.

b. Pilot development communities: In-depth community participation and development will be conducted during the pilot project in three representative groups of villages. These "communities" will be from each district (if possible), and will comprise a number of villages sharing cultural and/or familial links or experiencing similar difficulties in managing natural resources, due to external incursions or poor soils or similar factors. Each village within a "group" would be assisted to prepare a community natural resource management plan, in cooperation with the commune team and local environment and agriculture officials. These plans would provide direct information needed to develop the overall VNP management plan, and would be included as key components thereof. The plans would also lead to other activities, including: 1) an agreement between the residents of a village and local authorities to protect the resources used by that community; 2) where possible, an agreement between the grouped villages to identify the common elements of their individual village-level agreements and design a group plan to protect their larger area together; 3) a plan to investigate and establish pilot economic development opportunities for these villages using micro credit funds provided by the project, and/or other development projects, such as schools or health clinics or small-scale enterprises, for which the village submits a proposal.

II. Context for Minority Participation: Achieving participation by ethnic minorities in the VNP area will depend to a high degree on the external context. Key external factors in achieving participation will include legal status of minority communities, legal access of minority communities to traditional agricultural and forest-collection areas, information gathered about current threats and practices, and non-minority stakeholder participation in management plan development.

Legal Status and Resource Access. As noted above, ethnic minorities in Cambodia do not yet have formal legal status and recognition as a people. A policy has been drafted to address this issue but it has yet to be formalized. This fundamental step must be accomplished to allow park-area indigenous groups to have confidence in the process of participating in park planning and implementation.

Similarly, continuance of customary access to, and management of, traditional resource use areas, including swidden agricultural areas and primary forest hunting and gathering sites, is recognized in the draft policy but not as yet in law. Such recognition is slowed due to the unclear status of the general highland peoples policy. The project will actively provide support for the passage of the draft policy. Once these protections are in place, an Indigenous Peoples (or Khmer Leu) Council should be created to sit in and assist with provincial decision-making on issues affecting minority peoples in Steung Treng and Ratanakiri, as recommended in the first draft of the Highland Peoples Development policy in March 1996 (IMC/MRD 1996: 36). The project will assist in improving understanding of swidden and forest collection systems through support for a study of these systems in the area (see Schedule, below).

Stakeholder Participation. Stakeholders besides minority communities have economic interests in the park and
will affect the degree to which minority people can both participate and continue to manage resources sustainably. In addition, stakeholders are likely to be the cause of the most destructive incursions into park territory. For these reasons their interests and capacity to change behavior must be part of the park management process.

A.1. Project Activities for Community Participation and Development

Activities that are exclusively designed to support the participation of ethnic minority communities in the project fall into two categories: 1) All-park activities, i.e., activities to be conducted in each park-area minority village; and 2) Pilot activities, i.e. activities to be conducted in three groups of villages. See IV. F. Schedule of Implementation and Estimated Costs, below, for more details.

A1.1 All-park Community Activities

1.1a Community Participation and Development Core Teams: During the first few months, the project will hire and train a Community Participation Coordinator and teams of at least five people from various backgrounds to conduct PRAs and the NFE program in each commune. Two members of each team will be retained per commune after the PRA phase is completed. Their terms of reference will be to conduct on-going liaison with communities, conduct NFE programs, develop community-based natural resource management plans where required, advise in-community preparation of development project proposals, and arrange for technical assistance. In addition, they would work with the coordinator to establish a "village support network" to provide information and access to resources about development opportunities outside the scope of the Biodiversity project. They would also help in studying the sustainability of existing land use systems (swidden, NTFP extraction, etc.), conducting a threat analysis, organizing a community information exchange workshop and stakeholder discussions, and managing a micro-credit fund to support development projects.

Training for the above teams will be conducted in the 2nd quarter (year 1) and will include: PRA, principles of local people’s participation in parks and protected areas, how community-based NRM works (examples from other countries as well), and principles of non-formal education. It will also address gender issues, conflict resolution, principles of working with ethnic minorities, etc. Teams will be comprised of special ranger staff (these will be retained after teams are scaled back in the 2nd quarter of year 2), village volunteer rangers, provincial environment department staff (one from Steung Treng if possible), central Ministry of Environment staff, and other provincial development department staff; local NGO staff should assist in this process as appropriate.

1.1b Community Appraisals. [Note: most field-based community appraisal activities will be conducted during the dry season.]

The first activity in working with a community will be a participatory appraisal and non-formal educational discussion with the community. This step begins with an open agenda, slightly focused on natural resource use, for an appraisal of community livelihood practices, cultural values, and other socioeconomic background. Information is collected on general land use patterns, forest and water system use, trading and market activity, health and food security status, and local views on how these systems are changing. General resource use, mobility, and land use area maps are done by sketching. Then an analysis of the greatest assets and issues of the community is conducted. This discussion leads to an interactive educational session on park management and natural resource sustainability, focused on the issues of greatest import to the community, as determined by their own analysis. (Further educational opportunities are included later in the process.)

This step is designed to begin building trust between communities and the outside facilitation/education team; encourage community members to think through natural resource issues as they perceive them without influence from outsiders; and finally to follow up and share information on the issues they themselves identify as important. Where the community expresses interest, selection of a volunteer ranger to work with park staff to keep records and share information can be accomplished at this point also. (Some 10 communities in the area already have volunteer rangers.)

As determined by the community appraisal process, follow-up activities would take place in each village, including the following options: 1) monitoring visits by park rangers and commune-based project teams; 2) village-village exchange to facilitate learning and coordination on a commune, district or provincial level; 3) systematic non-formal education on natural resource management; and 4) two-way communication about park and community developments.

1.1c Non-formal Education: The goal of this activity is to allow the community to learn and think on their own about what the park can mean for them. During the first few months, a trial set of NFE materials will be
developed for use in the Community Appraisals (above), based on curricula developed in Ratanakiri by various non-governmental organizations and the Dept. of Education. (Curricula now in development in Phnom Penh by the Ministry of Environment and several international organizations can also be considered). These materials will be appropriate for work with the local communities (non-Khmer speaking, non-literate in most cases), will focus on the primary values of VNP as a way to protect natural resources and to the extent possible, traditional land use management practices. The materials will be developed in short, informal, discussion-based modules or guide sheets. Based on the primary issues raised by an individual community during the PRA, team members will select appropriate modules for the discussion. They should be used at the end of the PRA process INSTEAD of a planning session. Communities that find this of sufficient interest and/or are significant actors in using unsustainable practices in the park will be invited to become pilot communities in which more intensive planning and development will occur under the project.

Scaled-down core teams (two persons per commune) will continue the NFE program on a periodic (semi-annually) after the PRAs are all complete, along with village volunteers, in each community. This component of NFE programming will include more of the information needed by communities to organize around issues of natural resource management, how to resolve natural resource conflicts within communities, how to manage funds for small natural resource-based enterprises, how to interact with external agencies, etc.

1.1d Community Resource Management/Buffer Zone Management Training:

Familiarity with and understanding of community roles in park management is critical to park planning, management, implementation, and monitoring from the national to local level. Training for MOE staff on “the principles of community participation and resource management,” with examples from Cambodia and other countries, will be part of the overall staff training. For training staff within this unit and within the Community Forestry offices in MOE and the Ministry of Agriculture, Forestry and Fisheries (MAFF), intensive PRA practice is recommended; the same is recommended for provincial environment and ranger staff in future.

Efforts to develop a systematic integration of this issue into training is already underway in the Ministry, through the combined efforts of the Protected Areas Dept., and support organizations including SPEC, ETAP, and WWF. At the Ministry level, the Natural Resource Assessment Dept.’s socioeconomic information unit should also be included. Efforts to include the Department of Forestry’s Community Forestry office will also be made. The Biodiversity project will contribute to all these efforts.

1.1e Stakeholder Participation: The project will incorporate a process of identifying stakeholders and building a base of support for the park. Activities would include:

A roundtable presentation and discussion within the environmental community in Phnom Penh, to introduce and discuss the project. This would be attended by representatives of all departments within the MOE; international organizations having projects within the MOE; MAFF, MRD, and other national figures.

Annual “stakeholder” workshops in each district, held in collaboration with the provincial environment department and district chief. These would be attended by all commune and community leaders in that district, along with government agencies and NGOs having activities ongoing in that district.

Awareness building discussions on topics including: what are parks, conservation, community roles in conservation from around the world, and the unique opportunities for cultural and natural resource protection available in Ratanakiri and Steung Treng.

An inter-ministerial, inter-provincial committee established to coordinate VNP policy and management in support of the park director and parks and project staff. In addition to officials from the Ministry of Environment, Ministry of Agriculture, and Ministry of Rural Development, and from Steung Treng’s and Ratanakiri’s provincial government, representatives of the following groups should be present: ethnic minority leaders, IO/NGOs, police and/or military, and concession holders.

A1.2 Pilot Community Activities

Between the community appraisals and the initiation of pilot activities, time is allowed for teams to assess the information collected, and for interested communities to come forward. Criteria for selecting communities for work past the first step must be balanced between those that indicate an interest of their own accord, and those determined by park managers to be using practices that require changes. For the purpose of sustainable community support of the process, the former is the dominant criterion. [Note: Other pilot activities of this kind are being implemented in other parts of Cambodia and should be referenced to provide useful experience and lessons for activities in the Virachey area; e.g. the World Bank/MAFF project implemented by Associates in
Rural Development.

At this stage, commune-based project teams will make a second visit (i.e. after an appraisal is completed) to interested communities to develop a plan for the management of community resources and related development activities in the context of park management. This plan builds on the priorities established by the community in their appraisal. It may include:

- Actions for improving livelihood systems based on natural resource use, and for improving income-generation, food security, health, education, and other related issues;
- More precise and detailed boundary, land use, and mobility maps (the latter two for both men and women) (this activity would contribute significantly to appropriate zoning for park access and use);
- Detailed catalogues of natural resource (land, forests, and fisheries) items used by men and women in the community;
- A set of regulations agreed on by all members of the community for managing resources, (the regulations would be agreed upon also by park staff);
- Indicators the community would define as showing successful achievement of the above; and
- A vision of the community's future as they would like to see it.

Community Resource Management Plans: During this step, communities would work with the core teams and park staff to develop guidelines for sustainable resource use in the park. A key component of this process would be detailed traditional land use maps, which would in turn be used for discussions of zoning areas within and outside the park boundary as "multiple use areas," "community development zones," "traditional use areas," etc. (See Preah Sihanouk Management Plan zoning categories for suggestions on how to classify these areas.)

As determined by the community appraisal process, follow-up activities would take place in each village, including the following options: 1) all the options open to "non-pilot" communities near the park, as described above; 2) capacity building for local institutions; 3) technical assistance for improving agricultural sustainability or micro enterprise development, etc.; and 4) access to funding for small scale development projects. See IV. F. Schedule of Implementation and Estimated Costs for more details.

IV. B. Framework for Community Participation:

This framework describes the immediate outcomes to be achieved by the implementation of the stated community participation strategy. Also included are tangible outputs to be developed by the end of the three-year pilot project and the actions required to achieve them. See the Implementation Schedule, below, for the time frame in which these activities would be conducted during the three-year period.

<table>
<thead>
<tr>
<th>Immediate Outcomes</th>
<th>Outputs</th>
<th>General Actions</th>
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<tbody>
<tr>
<td>1. MOE protected areas management staff will have community participation skills.</td>
<td>Systematic integration of CBNRM and/or PRA in training system for MOE-DNCP, park staff and rangers</td>
<td>Park ranger and protected areas staff training, including PRA and/or community-based natural resource management (CBNRM) principles and methods (see section A. for breakdown of training categories)</td>
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<td></td>
<td></td>
<td>- Cross-training for park staff and &quot;community participation&quot; core teams on complementarity of roles in park management</td>
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<tr>
<td>2. External community (provincial and district officials, local and international NGOs, other stakeholders, etc.) will be supportive of community participation and development aspects of VNP planning process</td>
<td>Advice and collaboration from partner agencies</td>
<td>General project outreach (on-going) to build support (for core team members and other park staff) from line ministries, the NGO community for NFE program and for village support network, and other stakeholders including concession holders, military officials, etc.</td>
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3. Local communities and others will be motivated, by their awareness of the importance of the issues to their own survival, to contribute to the management of VNP

- Community Appraisals (all villages)
- Non-formal Education (NFE) program (all villages)
- CBNRM Plans (3-5 communities, or groups of villages)
- Village Volunteer Rangers (all communities not already having one)
- PRA and non-formal education processes leading to analysis by communities of need to use resources sustainably
- participatory local natural resource management plan development leading to agreement by community to integrate improved natural resource management practices where needed
- participatory selection of one volunteer (para) ranger from each village (if none exists) to work closely with official ranger staff
- awareness-raising workshops and outreach to the wider park-area community to build a base of support (e.g., to business leaders to consider tourism potential, etc.)

4. Local communities will participate (with core team, park staff, biologists, etc.) in assessments of the extent and sustainability of existing and projected land use practices

- Community Appraisals
- CBNRM Plans
- NFE program
- Report on ecological sustainability of existing land use practices
- PRA and non-formal education processes leading to analysis by communities of need to use resources sustainably
- scientific study of various types of swidden and other land use systems in practice in the area; their maintenance of habitat for biodiversity and watershed services, agroecosystem biodiversity and germplasm conservation maintenance, management and use of primary and secondary forest systems
- mapping traditional and possible future land use areas for protection of existing sustainable practices, improvement of unsustainable practices, and zoning of park land use areas (see section A. for proposed zoning categories)

5. Local communities will participate (with core team, park staff, biologists, etc.) in identifying community-based practices that are unsustainable and will develop local management plans to address these

- CBNRM Plans (3-5 communities)
- participatory local natural resource management plan development leading to agreement by community to integrate improved natural resource management practices where needed, and by park and project staff to provide technical assistance in alternative development and improvement of agricultural sustainability in existing systems and protection of traditional access to customary areas.

6. Local communities will help core teams and other park staff to identify externally-driven practices that are unsustainable

- Threat analysis
- study to systematically examine issues already anecdotally identified as potential threats, including hydro power, road, and plantation development; lack of fire control; lack of protection for traditional land use areas; encroachment and land speculation; uncontrolled logging; illegal rattan and bamboo extraction; and poaching
- information-sharing between communities and park staff on the extent, sources, and means of alleviating these pressures
- contact and negotiation with stakeholders in large-scale unsustainable development (concession holders, police, military, etc.)

7. Local communities will participate in identifying opportunities for development projects that provide alternatives to unsustainable practices

- Proposals for micro projects collaboratively developed by communities and core teams
- Core teams assess and approve/reject proposals, finance successful items through community development micro project fund and community monetary contributions and in-kind support
- Core teams support community access to “village support network” to find technical assistance and financial support for community development proposals outside the scope of park management and “unsustainable practice” alleviation
### IV.C. Technical Identification of Development/Mitigation Activities

Following are a number of key activities and approaches the project will incorporate to ensure that indigenous peoples in the project area are not harmed by the project activity. Most points are supported by Cambodian government policy statements and/or other research.

1. To support the on-going process of recognition of highland peoples rights to help maintain the natural resource base and avoid further alienation from mainstream Khmer society, the Bank should encourage the Royal Cambodian Government to approve the IMC policy as drafted in June 1997, and the community forestry sub-decree, and the community forestry agreement from Poey Commune (see below), as ‘benchmarks’ for progress during the pilot park management project. Cambodia today carries much momentum toward accomplishing this goal: former co-Prime Minister Prince Norodom Ranariddh, in campaigning for the recent elections, noted July 15 that he would review, and he hoped the World Bank would develop a master plan for, forest concession agreements to see how best to protect the country’s forests; the Ministries of Environment and Agriculture have been considering a sub-decree to permit communities to manage forests in a concession-like agreement with local authorities; an agreement, worked out between six minority villages in Ratanakiri and local authorities including the provincial governor, is also at the national level awaiting approval; an analyst studying community forestry for a recent World Bank project, implemented through the Ministry of Agriculture, also determined that: "Policy makers in Cambodia should look at developing legal mechanisms for granting forest-use rights to individuals as well as the community approach already adopted [in Poey Commune, Ratanakiri, for example]..." (Fox 1997:12). This author refers to the project of six communities who have developed a forest management agreement together and in conjunction with local forestry and environment officials, with the support of the Non-Timber Forest Products project. This example is the model seen for the activities proposed in this paper. See Appendix 4. for more information.

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<tr>
<th>8. Local communities’ management plans and broader views for the national park will be integrated into design of larger VNP management plan</th>
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<tr>
<td>- Community views (compiled from PRAs and also presented by selected representatives) presented in workshop and proceedings to discuss VNP plan with stakeholders</td>
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<tr>
<td>- Agreement from stakeholders to support communities’ contributions to planning, management and monitoring of VNP</td>
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<tr>
<td>- Agreement from stakeholders on next steps for addressing externally-driven (unsustainable) practices</td>
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<tr>
<td>- Completed CBNRM plans integrated as background documents in plan; common elements of community-management integrated into plan guidelines</td>
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<tr>
<td>- Workshop to bring community representatives and/or volunteer rangers from communities with completed CBNRM plans together to identify common elements; on-going network to support communication and information-exchange between volunteer rangers established</td>
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<td>- Stakeholder gathering(s) (at district, province, and national levels) to present and discuss VNP management plan options; representatives from above workshop present common elements and case studies of community views; core teams and other park staff present common elements of external causes of unsustainable practices; proceedings circulated widely for comment</td>
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<tr>
<td>- Management plan development team incorporates &quot;common elements&quot; as identified above into guidelines (as &quot;adaptable community considerations&quot; because depending on how many communities have completed their own plans, this group may not be representative)</td>
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<th>9. Development project trials will be underway</th>
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<tr>
<td>- Proposals financed and projects initiated with start-up training and/or organization activity</td>
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<td>- Technical assistance, where requested, in: community institution-building, micro enterprise development and natural resource-based income generation and management, sustainable agriculture, etc.</td>
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<td>- on-going communication and support from core teams and rangers to communities, through volunteer network and in follow-up monitoring visits (see next outcome and action)</td>
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<th>10. Local communities will be providing data to support the park management system</th>
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<tr>
<td>- Volunteer rangers will each have logbook to record information about new findings, violations of community plan guidelines, externally-motivated activities in the area, etc.</td>
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<tr>
<td>- Park rangers and village volunteers and small community groups meet periodically to share information about new developments</td>
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2. The project should place emphasis on consultation with as many affected minority communities as possible. “No development project may proceed unless the affected community groups are duly notified and informed, and have had the opportunity to participate in preceding consultations, and unless Environmental and Social Impact Assessment Studies have been conducted with the full participation of the affected Highland Communities.” (IMC 1997b, pt. 1.5)

3. The project should emphasize identifying and strengthening indigenous peoples groups or inter-village associations. As noted in the draft Highland Peoples policy: “Local organizations or associations established by highland peoples to conserve and strengthen their cultures and to manage their natural resources are strongly encouraged by the government. (pt. 2) Provincial Rural Development Committee structure[s] and traditional local organizations shall be enabled to determine development priorities and implement development activities, as well as managing their natural resources and environment.” (IMC 1997a, p. 1.5)

4. The project must place emphasis on strengthening the existing, sustainable livelihood and resource management systems of ethnic minorities in the park area, and support their wishes to protect those resources from the overexploitation of outsiders. “The customary land rights and the demarcation of customary village boundaries shall be recognized, endorsed and protected by the government...” (IMC 1997b, pt. 2.3) Essentially, the project can capture the interest minorities have in preserving the land, and enlist their assistance as forest “protectors,” if it implements the participatory approaches recommended.

5. The project should work with communities and scientific specialists to assess the sustainability of the current practices in use throughout the park. Those that are sustainable should be supported and protected; those that are not should be improved and/or replaced with better options, at the community’s discretion. “The strengthening and improvement of fallow [swidden agriculture] systems as practiced by the highland peoples will be recognized and supported by the government. (p. 1.4) The government recognizes the indigenous methods of land cultivation and forest products gathering, which the highland peoples use to support their livelihood.” (IMC 1997b, pt. 2.5) NGOs working in Ratanakiri already have plans to develop activities to support improved methods leading to more sustainable production for the people. The likelihood is that if no technical assistance is provided to these people within the next few years, they will continue to move their chamkars north.

6. Where communities have traditionally used land that is now within park boundaries, mechanisms should be developed to allow them to continue that use along the guidelines noted in pt. 5, above. Customary use zones, limited hunting and gathering privileges, and other similar exclusions for traditional use by ethnic minorities should be implemented in those areas. Areas to be organized this way should be determined first through participatory resource mapping during the PRAs, and then verified through the use of ranger patrols and aerial photography/videoography. By the end of the three-year project, there should be adequate data available to compile a comprehensive land-use plan for the park and surrounding area. Representatives of minority and other park area communities should approve this land use plan before it is finalized.

7. Another issue that may be changing the community-oriented culture of many minority villages relates to competition for labor in raising paddy and chamkar crops. This issue could have significant gender implications and park managers must study it further.

8. Although many villages in the Park buffer zone have by now partially adapted to wet rice cultivation, buffer zone management planners should keep in mind the history of the villagers’ initiation to this system, which may affect their receptivity to its adoption.

IV. D. Institutional Capacity

Little information is currently available to assess the national government institutions dealing with indigenous peoples issues. Following is a discussion of what is known about this question and about local indigenous peoples organizations and the IOs/NGOs and local authorities that work with them. Again, little information is available on this subject at the moment due to the isolation in which park-area communities live. Information collection with those communities is a critically needed component of further park planning work, therefore.

The IMC is supported in its work in Cambodia by the United Nations Development Program’s Highland Peoples Program (UNDP-HPP), which works in four countries in Indochina. In Ratanakiri, UNDP-HPP is supporting two UN volunteers to support the IMC’s work. The volunteers work in collaboration with the UNDP/CAREERE office there. Their mandates overlap. One primarily supports the ADHOC land rights education process; the other conducts action research on highland women’s roles and the alleviation of some of their workload.

CARERE and the provincial rural development committee (PRDC) are supporting a process of establishing
village development committees (VDCs) in the 52 villages where the program operates. Four of these are in
the park area in Kok Lak commune, Veun Sai district. In late 1996, a study to assess local perceptions and
understanding of VDC function was conducted by CARERE in four villages. It found that most people did not
truly understand what these foreign-sponsored institutions were for, but that they participated if someone asked
them to. Some felt that such organized meetings and processes would lead them straight back to “PolPot
Time.” Most, when asked about women’s roles in VDCs, said it was a good thing (Sugiarti, 1997b).

IV. E. Monitoring and Evaluation

Monitoring and evaluation is an integral part of the planning and implementation phases of the project, in
addition to the conclusion thereof. In the above section on a “Strategy for Participation,” plans are suggested
for community-based and stakeholder participation, including monitoring and evaluation, in the park
management process. This monitoring and evaluation comes under several particular actions, including: 1) the
proposed pilot activities would work on the adaptive management model, integrating M&E into the system as
needed; 2) village volunteer rangers: these community representatives would help regular ranger staff monitor
activities in the park and would be involved in core commune teams and other implementation activities; 3) a
Khmer Leu council would be involved in assessing progress before the end of the three year project; 4)
communities involved in the community-based planning would evaluate their progress and the project
occasionally throughout the project and their concerns would be addressed by project managers in the
remaining project period. The project should also support the national policy guidelines, in draft, which note
that: “The PRDC structure and traditional village committees will monitor land use and set up measures to
ensure sustainable ways of using natural resources.” (IMC 1997b, pt. 2.3)

IV. F. Schedule of Implementation and Estimated Costs

This workplan outlines the detailed actions, time frame by quarter, and estimated costs for each required to
achieve the above outputs and outcomes. Please note: costs are very preliminary figures.

Description of Activities

Schedule of Activities

<table>
<thead>
<tr>
<th>Activities</th>
<th>Responsible Party</th>
<th>Resources Needed</th>
<th>Estimated Cost</th>
<th>Year 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hire and train Community Participation Coordinator</td>
<td>Park Director and community participation specialist</td>
<td>2 person-mos. to select and train coordinator</td>
<td>22,000 USD (if 36 mos. local and two mos. expat. salaries)</td>
<td></td>
</tr>
<tr>
<td>Hire and train core Community Participation and</td>
<td>Coordinator and specialist</td>
<td>6 person-mos.</td>
<td>102,000 (720 mos. average local salary ($100/mo.) for 12 communes x 5 persons/ team x 12 months -- 3 mos. salary, workshops, travel, perdien)</td>
<td></td>
</tr>
<tr>
<td>Development teams</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NFE curriculum dev’t and testing</td>
<td>Coordinator, teams, and PRA/NFE specialist</td>
<td>1 person-mo.</td>
<td>7,500 (1 mo. expat sal. -- this activity is partially developed under above step)</td>
<td></td>
</tr>
<tr>
<td>Planning of PRA/NFE visits</td>
<td>Coordinator and teams</td>
<td>1 person-mo.</td>
<td>1,000</td>
<td></td>
</tr>
<tr>
<td>PRA/NFE visits</td>
<td>Coordinator and teams</td>
<td>60 p-m</td>
<td>10,000 (teams travel, supplies for 60 PRAs)</td>
<td></td>
</tr>
<tr>
<td>Village volunteer</td>
<td>Teams and</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Selection</td>
<td>Villages</td>
<td>Hours</td>
<td>Cost</td>
<td></td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>--------</td>
<td>-----------</td>
<td></td>
</tr>
<tr>
<td>Cross-training: regular ranger staff observe a PRA &amp; core team staff observe patrols; village volunteers present views</td>
<td>- Parks Director, Coordinator, rangers, teams, volunteers</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Scale back PRA/NFE teams</td>
<td>- Coordinator</td>
<td>- 0.5 p-m</td>
<td>- 24,000 (estimate 2 salaried contacts per commune x 12 commune x 20 mos. of remaining time in project)</td>
<td></td>
</tr>
<tr>
<td>Project outreach for long-term external support</td>
<td>- All staff, especially Advisory Council, Parks Director, Coordinator, MOE advisors</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>CBNRM plan development</td>
<td>- Coordinator, scaled-back teams</td>
<td>- 26 p-m</td>
<td>n/a (see above)</td>
<td></td>
</tr>
<tr>
<td>Further NFE refinement and implementation</td>
<td>- Coordinator, teams, park staff</td>
<td>- 0.5 p-m</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Study of swidden and existing land use practice</td>
<td>- biology/agro-ecosystem specialist, coordinator, teams</td>
<td>-6-8 p-m</td>
<td>- 25,000</td>
<td></td>
</tr>
<tr>
<td>Mapping traditional and potential land use area for zoning and protection (this data to be incorporated into MOE's EDSS)</td>
<td>- teams</td>
<td>- maps, paper, GPS</td>
<td>- 2,000</td>
<td></td>
</tr>
<tr>
<td>Threat analysis</td>
<td>- park staff, local development authorities, NGOs, coordinator and teams, community leaders/village volunteers, EIA specialist</td>
<td>- workshop room, 1 p-m, travel, perdiem</td>
<td>- 8,000</td>
<td></td>
</tr>
<tr>
<td>Community planning and information exchange workshop</td>
<td>- coor. &amp; teams, community leaders</td>
<td>- workshop room, travel, perdiem</td>
<td>- 300</td>
<td></td>
</tr>
<tr>
<td>Stakeholder workshops (one per district &amp; one national)</td>
<td>- coor. &amp; teams, parks director, MOE staff, NGOs, local government, military, police, community leaders</td>
<td>- workshop rooms, travel, perdiem, catering</td>
<td>- 6000 (1500 each)</td>
<td></td>
</tr>
<tr>
<td>Assessment of development project proposals</td>
<td>- coor. and teams</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
</tbody>
</table>
The total cost as currently estimated is equal to US$328,600 for three years.

**Socioeconomic Information Report – Appendix I. Bibliography**


Bann, Camille, *An Economic Analysis of Tropical Forest Land Use Options, Ratanakiri Province, Cambodia*, (Economy and Environment Program for Southeast Asia/IDRC), June 1997. Also, *Appendix 5: Selected Forest Inventory Data for Representative Half a Hectare of Forest in Phnom Ta Pean, Ratanakiri*.


CARERE, CIDSE, Health Unlimited, IDRC, Oxfam, *Seminar and research on customary resource use in NE Cambodia: Proposed support to the Royal Government of Cambodia’s Inter-ministerial Committee on Highland People’s Development*, n.d.


CARERE-RATANAKIRI, *Workplan 1997: Sustainable and equitable area development “from vision to action - SEILA at test”*.


Colm, Sara, *Options for Land Security Among Indigenous Communities, Ratanakiri, Cambodia*, (Banlung, Non-Timber Forest Products Project), May 1997a.


Emerson, Bridget, *The Natural Resources and Livelihood Study: Ratanakiri Province, NE Cambodia*, (Ratanakiri: The Non-Timber Forest Products Project, 1997).


Interministerial Committee for Highland Peoples Development (IMC), *Proposed General Policy for Highland Peoples Development*, June 19, 1997a (draft)

Interministerial Committee for Highland Peoples Development (IMC), *Policy Guidelines for Highland Peoples Development*, June 19, 1997b (draft)


Lun Van Di, (Siem Pang District Chief), personal communication, Steung Treng, March 13, 1998.

Madra, Ek, “Prince Ranariddh wants to review forest deals,” Reuters July 15, 1998.


Paterson, Gordon, (Director, Non-timber Forest Products project), personal communication, Feb. 21, 1998.


