



UPLIFTING RURAL LIVELIHOODS IN SARAWAK THROUGH ITTO-SUPPORTED PROJECTS

- (I) PD 288/04 REV.2 (F) - DEVELOPMENT OF LANJAK ENTIMAU WILDLIFE SANCTUARY AS A TOTALLY PROTECTED AREA, PHASE IV
- (II) PD451/07 REV.1 (F) – TRANSBOUNDARY BIODIVERSITY CONSERVATION: THE PULONG TAU NATIONAL PARK, SARAWAK, MALAYSIA, PHASE II



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BACKGROUND

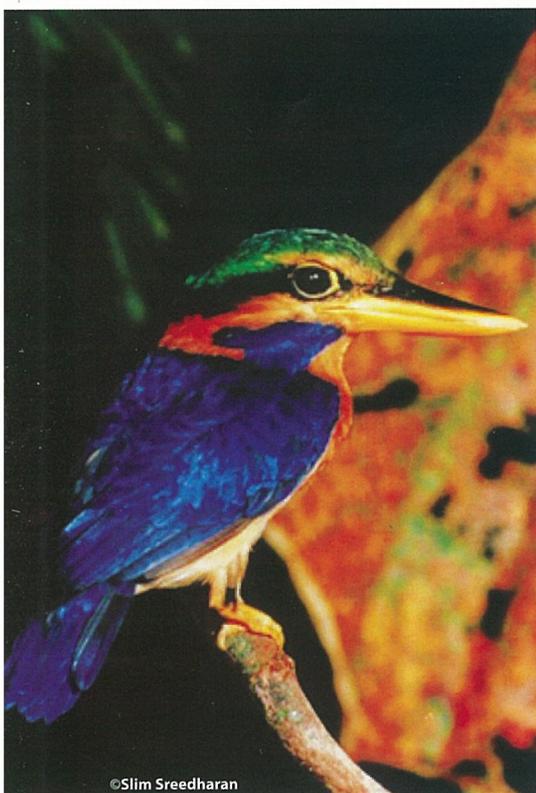
The International Tropical Timber Organization (ITTO) funded two biodiversity conservation projects in Sarawak. Forest Department Sarawak is the Executing Agency of both projects. These projects are entitled 'Development of Lanjak Entimau Wildlife Sanctuary as a Totally Protected Area', and 'Transboundary Biodiversity Conservation: The Pulong Tau National Park'. Both projects have livelihood improvement through community development as one of the specific objectives.

Lanjak Entimau Wildlife Sanctuary (LEWS) occupies about 193,300 hectares of primary forest that traverse the districts of Lubok Antu, Julau, Song and Kanowit, and is Sarawak's largest totally protected area. The Sanctuary's diverse habitats are made up of eight distinct forest types from lowland dipterocarp forest to montane forest on top of Bukit Lanjak at 1,300 metres above sea level. The most important inhabitant of the sanctuary is the critically endangered west Borneo sub-species of orangutan, *Pongo pygmaeus pygmaeus*, numbering about 1,500 individuals.

Up to 120 Iban longhouses with an estimated population of 12,000 individuals are scattered in the districts, with many living close to the

Sanctuary. These Iban people have a long association with the forest and many are still dependent on forest plants and animals for subsistence livelihoods. Because of this, the government has granted special privileges to some longhouse communities to hunt and collect forest produce for domestic use in designated areas in the Sanctuary.

The Pulong Tau National Park (PTNP), at about 60,000 hectares in size, is the largest of Sarawak's 22 national parks, and is located in the northern highlands in Ulu Baram. It's most prominent feature is Gunung Murud, Sarawak's highest mountain at 2,424 metres above sea level, and falls in the Limbang Division. Occupying higher elevations than Lanjak Entimau, its ecosystem and biodiversity are more diverse and complex.



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Rufous-collared Kingfisher (*Actenoides concretus*)



Bracket fungi



Bulbophyllum membranifolium

Note: Unless otherwise mentioned, all photos used are taken by consultants and staff who worked for the ITTO project.



Waterfall near PTNP



White-lipped frog (*Rana chalconota*)



Iban woman with the fruit of her labour

Local communities living near the PTNP are the Kelabit, Lun Bawang and Penan. About 2,400 Kelabit people live in the Kelabit Highland area. Bario is their main settlement and is made up of 17 villages, while several other villages are located nearby or close to the Kalimantan border. Long Lellang, located south-west of Pulong Tau, is occupied by the Kelabit and Penan.

The Lun Bawang people are occupants of the Maligan Highland, that is located north of the Kelabit Highland, with their main settlement at Ba' Kelalan, where about 1,000 people live in 12 villages.

Farming of highland rice, popularly known as Bario rice in Bario and Adan rice in Ba' Kelalan, buffalo rearing and salt mining are the main occupations of the Kelabit and Lun Bawang people.

About 450 Penan live outside the southern and western boundaries of the PTNP. Some families are still semi-nomadic. While many are learning to grow paddy and plant tapioca, they still depend on the forest for sago starch, vegetables and meat.



A Lun Bawang woman collecting pandan leaves for making mats



Kelabit women winnowing paddy



Penan woman weaving the famed *ajat* from rattan



COMMUNITY-BASED DEVELOPMENT

The Forest Department's and ITTO's strategy to improve community livelihoods is through the implementation of community-based activities in Lanjak Entimau since 1998 and Pulong Tau since 2005. These activities were implemented after consultations with the different communities on their most felt needs.

LANJAK ENTIMAU WILDLIFE SANCTUARY

1. FISH FARMING IN VALLEY PONDS

Fish farming is a popular choice among the Iban participants in Lanjak Entimau to satisfy their needs for protein and for additional cash income. As indigenous fish species like ikan semah (*Tor douronensis*), takes several years to reach marketable size, the fast growing red tilapia (*Oreochromis* sp.) was introduced, after consultation with the Department of Agriculture. With proper care, this species attains marketable size after six months.

Fish farming must involve an entire longhouse community because of the high cost of valley pond construction. The activity is carried out jointly with the people on a *gotong-royong* basis. Valley ponds are preferred to concrete tanks because running river water is more conducive for fish growth. Local participants help to select suitable rivers or streams and Forest Department and ITTO will estimate and acquire the necessary materials, consisting of cement, iron rods, iron nettings and poly pipes, and transport them to the site. The local participants will be responsible for collecting stones and sand that are aplenty in the rivers. Trained and experienced project staff from Forest Department help to supervise the construction and provide on-site training to the participants. Fish fries and feeds are also provided free at the start.

All participating longhouses are required to sign a memorandum of understanding (MoU) to cooperate and work diligently to look after the fish. If a member assigned to feed the fish on a particular day fails to do so, he or she will be fined RM2.00 and the money will go into a joint account. Another condition is that of the proceeds from the sale of the fish, 50% will be deposited in a joint bank account, 25% used for maintenance and to buy fish fry and feeds, and the remaining 25% to be shared among the participants. Currently fish is sold to longhouse residents at RM8.00 per kilogramme.



Working together to construct a valley pond at Rumah Robert, Ng. Maong



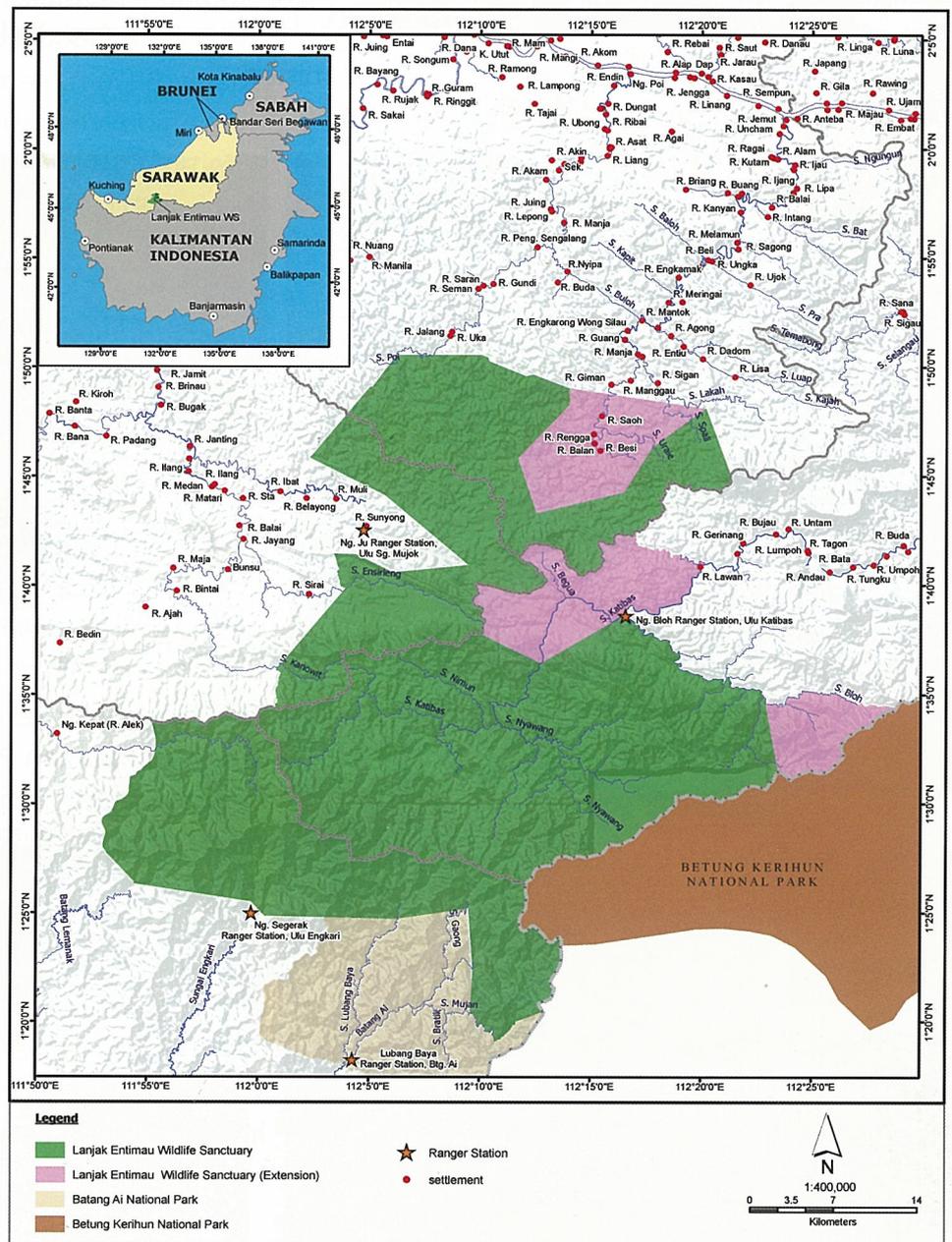
Valley pond of Rumah Entili

MENT ACTIVITIES

In the Ulu Mujok region, participating longhouses have agreed to schedule harvesting at different times of the year. This will enable them to buy fish from each other and ensure regular supply of protein throughout the year. Pioneering longhouses such as Rumah Anthony Bau have recorded harvests of over 250 kilogrammes a year.

To-date, in LEWS, a total of 29 fish ponds have been constructed for 27 communities and two schools in Ulu Mujok in Julau District, and Ulu Kanowit and Ulu Ngemah in Kanowit District. **Map 1** shows the locality of LEWS and the settlements surrounding it.

Fish culture has also been introduced to the Kelabit communities in Bario and Lun Bawang communities in Ba' Kelalan under the PTNP project.



Map 1. Locality of LEWS and the settlements surrounding it.



Releasing fish fry at Ng Ngungun, Ulu Ngemah



Iban woman selling fish at Rh. Manding, Ulu Mujok

2. TAGANG SYSTEM

The *tagang* system of restoring fish stocks in natural rivers has been introduced to three longhouse communities in the Ulu Engkari area outside of LEWS. Decreasing fish stock often arises because of over fishing and silting of rivers. Under this system, a river is divided into three zones, red, yellow and green. The red zone is a spawning zone where fishing is strictly prohibited. Yellow zone is for controlled fishing, while green zone is where normal fishing is permitted.



Dialogue with longhouse residents



Tagang site at Ulu Sg. Engkari



Signage showing yellow and green zones

The longhouse residents of Rumah Bada, Rumah Jaong and Rumah Patrick have adopted this system by agreeing not to fish in the Engkari River until the stock, mainly of *Tor* sp. (ikan semah), has been replenished.

Since the launch in February 2010, fish stock in the river has increased. Participants can expect high incomes when they are ready for sale in about two years. The current price for one kilogramme of semah in the towns is at least RM80.00.



Tagang river may be restocked with fish fry



Tor sp. (Ikan semah) caught at Ulu Sg. Engkari

3. CROP CULTIVATION

Planting indigenous fruit trees is another choice of the people. Popular species include petai (*Parkia speciosa*), pulasan or mak (*Nephelium ramboutan-ake*), isau (*Dimorcarpus longan*), and dabai (*Canarium odontophyllum*). Interested farmers are provided with planting materials and fertilizers, including on-farm training on planting, budding and marcotting, and care and maintenance.

Successful farmers in Ulu Mujok and Ulu Katibas such as Tuai Rumah Gerasie Kapi and Kallang Melamun have been able to increase their incomes by up to RM4,000 per successful harvest with all the fruits being sold to longhouse residents.

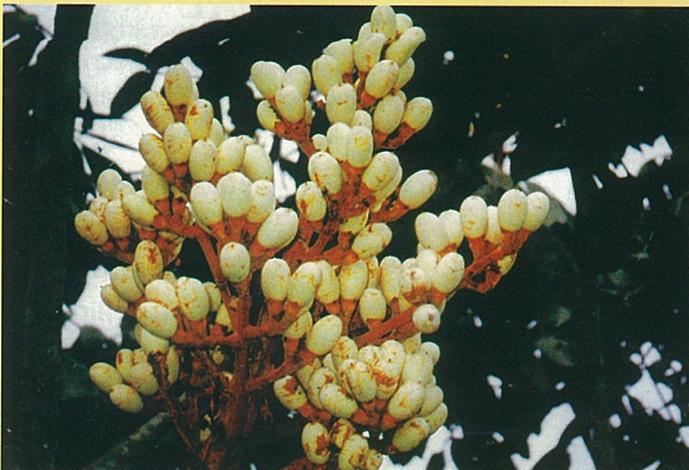
In LEWS, a total of 181 communal and individual plots have been planted in Ulu Mujok, Ulu Kanowit, Ulu Katibas and Batang Ai by the end of 2009. The same has been introduced to the Penan of PTNP since 2005.



Training on fruit tree planting, Ulu Mujok



Fruit garden of Rh Mengiring, Ulu Mujok



Immature dabai fruits (*Canarium odontophyllum*)



Freshly harvested dabai fruits

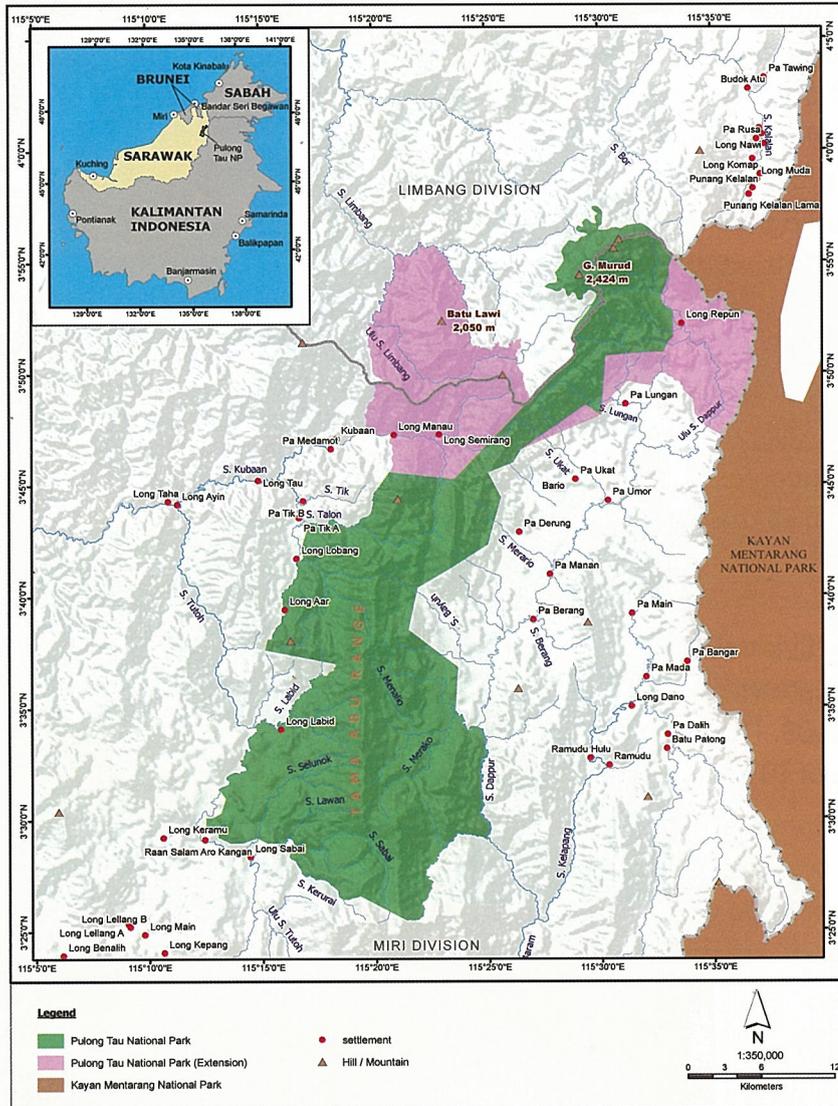


Petai (*Parkia speciosa*)



Pulasan or mak (*Nephelium ramboutan-ake*)

PULONG TAU NATIONAL PARK



Map 2. Locality of Pulong Tau National Park and its settlements

1. REHABILITATION PLANTING OF ULU MERARIO WATER CATCHMENT IN BARIO

The PTNP project is also leading efforts to rehabilitate the degraded environment of the Ulu Merario water catchment. Protection of the catchment is vital to ensure adequate water supply for the recently constructed mini hydro, for domestic use, and for irrigating numerous wet paddy fields in Bario. The planting site is located at the foot of PTNP. A nursery in Bario has been established to prepare planting materials of economically important species like local fruit trees, cinnamon and scented wood or gaharu (*Aquilaria*) and timber trees (*Agathis*). The tree replanting programme, launched in March 2010, are being keenly participated in by the local communities and students. **Map 2** shows the locality of PTNP with its settlements.

In realizing the importance of the catchment to their well being, the village communities of Bario Asal and Arur Layun have signed a memorandum of understanding to refrain from felling any tree inside the national park.



Participants at the rehabilitation planting



Nursery at Bario



ITTO visitors after tree planting, 25 May 2010



Philip Lakai, Penghulu of Bario planting his tree

2. ASSISTANCE TO PENAN COMMUNITIES

Various facilities and amenities, training and education were provided to the Penan villages of Ba' Medamot, Long Lobang, Pa' Tik A, Pa' Tik B and Long Sabai which are located in the vicinities of PTNP. This assistance has brought about significant changes in the lives of 500 Penan people living in these villages.



Old run-down houses of the Penan of Ba' Medamot



New houses for Penan of Ba' Medamot



Crossing the Kubaan river without a bridge



The Kubaan suspension bridge



Training the Penan on crop cultivation



Penan primary school children after receiving shoes and stationeries from the project

2.1 GRAVITY-FEED WATER SUPPLY

This is provided for 15 families in Long Lobang and 22 families in Long Sabai, with connections to kitchens, toilets and bathrooms. Poly pipes (1 km for Long Lobang, 2 km for Long Sabai), cement, steel cables for supporting the pipes across rivers, wash basins and toilet bowls are supplied, with construction headed by Forestry staff.

Two other gravity-feed water projects, for the villagers of Ba' Medamot and Pa' Tik B, are under planning.



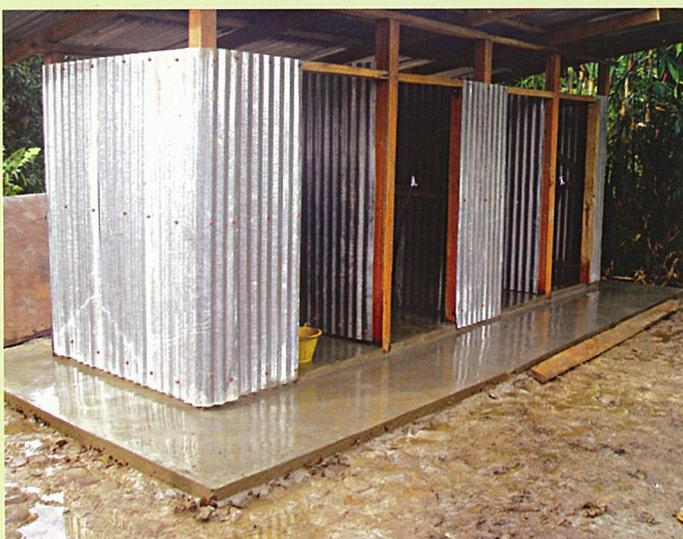
Constructing dam for gravity-feed water supply at Long Sabai



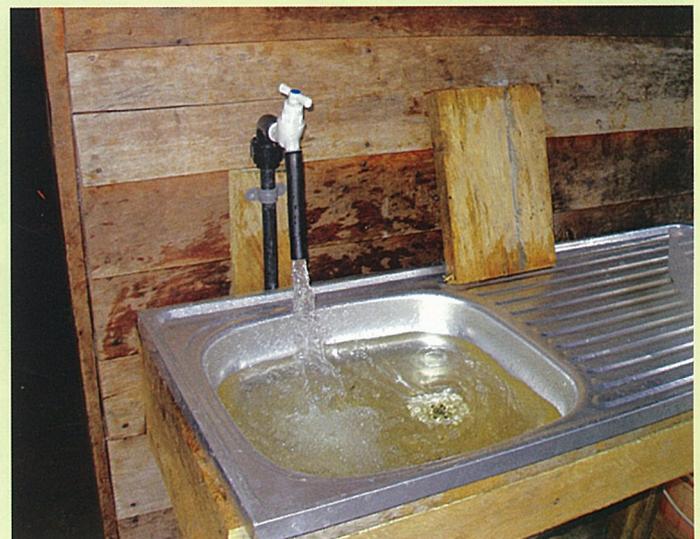
Transporting materials by caterpillar tractor with the help of Samling



Laying water pipe across a river at Long Sabai



Toilet and bath at Long Sabai

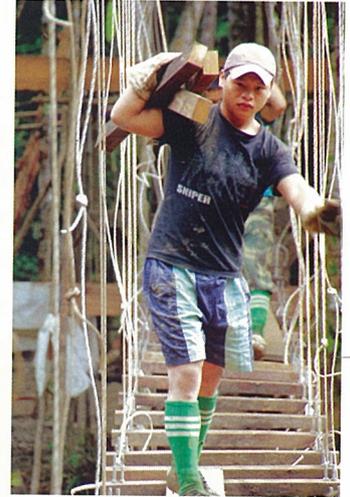


Gravity-feed water and sink at Long Sabai

2.2 SUSPENSION BRIDGE ACROSS THE KUBAAN RIVER

Penan residents and their children who go to school in Bario use a 12-km long jungle trail that crosses the Kubaan River near Semirang River (a tributary of Kubaan) and the Ngelah River near the village of Pa' Tik B. These two rivers are dangerous to cross after a heavy rain. Four years ago, one pregnant Penan mother died after giving birth in the forest because she was unable to cross the Kubaan River in time to seek emergency treatment in Bario.

The 32-metre long bridge represents an integrated approach to uplifting livelihoods and making it safer for the school going Penan children. The bridge was launched by the Director of Forests Datu Hj. Len Talif Salleh on 17 December 2009. The jungle trail was also upgraded at the same time.



A young Penan helping to build the bridge



Completed suspension bridge



Crossing the Kubaan without a bridge



Director of Forests and Penan chief cutting ribbon to open the bridge



Log bridges along trail need to be replaced regularly



Penan boy in river crossing stunt

2.3 PLANTING OF INDIGENOUS FRUIT TREES AND VEGETABLES

More than 60 families in the villages of Long Lobang, Pa' Tik A and B, Long Sabai and Ba' Medamot have benefited from on-farm training in fruit tree and vegetable planting and their maintenance. The training included making of burnt earth for fertilizers. Gardening tools such as hoes, spades and parang are provided free to the participants. Vegetable seeds and fruit tree seedlings are also supplied. Many villagers have already started to enjoy the bananas, star fruits, rambutan as well as vegetables that they have planted.

The project will continue to upgrade the skills of the farmers with further training and monitoring.



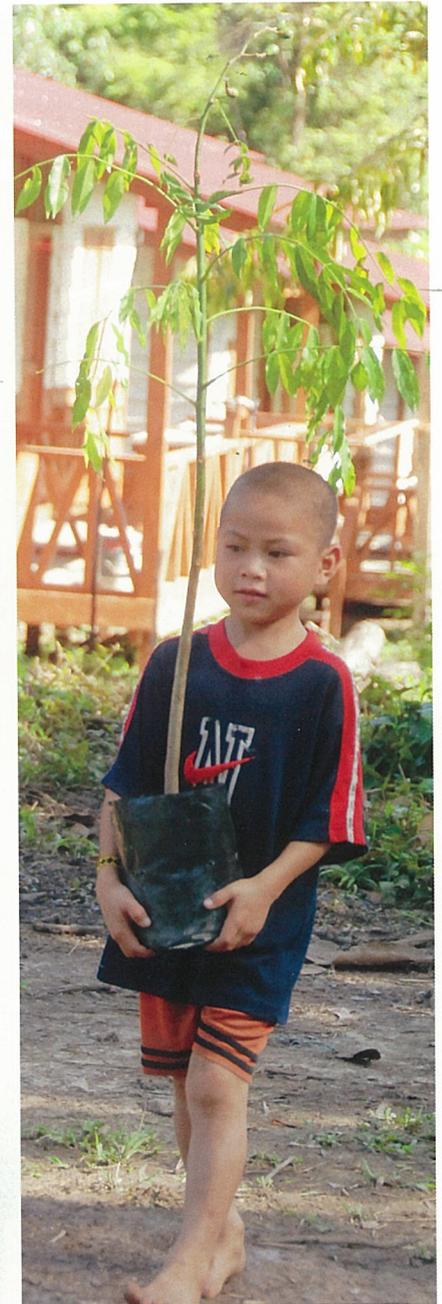
Crop cultivation at Long Lobang



Distributing vegetable seeds at Long Sabai



Burning the soil to make fertilizer at Pa' Tik A



Young Penan boy carrying fruit tree seedling for planting



Vegetable plot at Long Lobang



Paddy field, banana and tapioca plants at Long Lobang

2.4 REGISTRATION OF BIRTH CERTIFICATES AND MYKAD

In collaboration with the National Registration Department in Kuching, the project helped 264 Penan and other applicants to apply for birth certificates and MyKad in 2008 and 2009. The applicants were brought to four centres in Bario, Long Lelang, Long Banga and Samling's Kelisa Camp, where officers from the National Registration Department were present to process their applications. Food was provided to the applicants during their stay at the centres.



A Penan child enjoying her packed lunch



A Penan boy having his photograph taken



Penan girl getting thumb printed at Long Banga



Applicants at Kelisa Camp



Tebaran Agut, semi-nomadic Penan chief of Ba'Tepen undergoing processing



Part of the big crowd that turns up at Bario

2.5 NEW HOUSING AT BA' MEDAMOT

The Ba' Medamot housing is the largest activity undertaken by the Pulong Tau N.P. project. In spite of the remoteness and lack of road access, the project team was able to complete the construction in less than two months, in November 2010. This was made possible with the assistance of Samling and Erickson Air Crane in transporting and airlifting the building materials to the construction site.

Fifteen units are allocated to the Penan families, two units for use by Forest Department as office and park rangers' post, one unit for information centre, and two units for visitors' accommodation. A dam was also constructed over a nearby river to provide gravity water supply to the village.

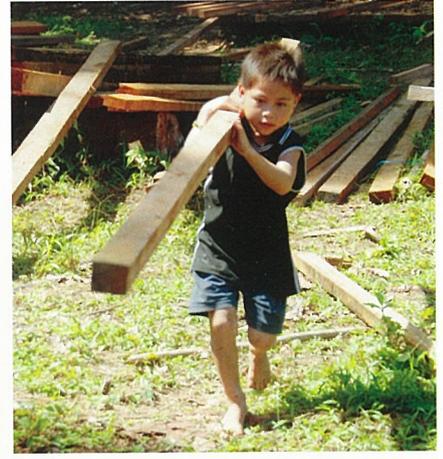
The Penan were also trained on vegetable and fruit tree planting and their maintenance.



Readying material for airlift



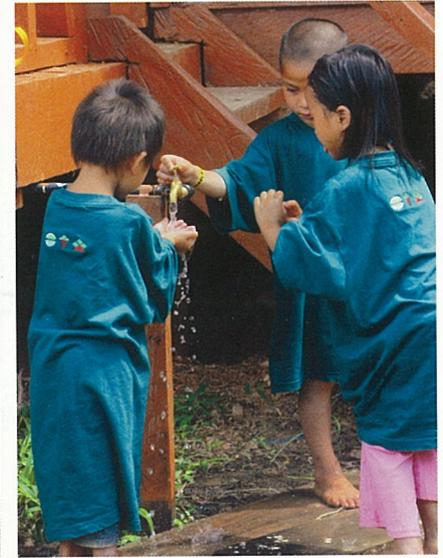
Lift-off!



Our youngest Penan worker



Building in progress



Children enjoying the gravity-feed water supply



The new housing has brought about a dramatic change in the lives of the Penan

SUCCESS AND SUSTAINABILITY

Community-based activities are aimed at helping communities or individuals who wish to learn and develop entrepreneurial skills for livelihood improvement. Introducing the concept has not been easy. Regular field visits and dialogues are necessary and helpful to explain the project's objectives and win the trust and cooperation of the people.

In spite of the initial assistance provided by ITTO and the Executing Agency (Forest Department), not all implemented activities produce the desired results. In fish culture and *tagang*, an entire longhouse community or several communities will be involved. Success is possible only with strong and effective community leadership, integrity, willingness to work on a *gotong-royong* basis, and putting community interest above self interest. Participants must also be determined to continue with the activities after initial assistance from FD and ITTO. Several fish farms were abandoned either because the participants had migrated to the towns or the fish was stolen before they could be harvested. Farmers who participated in fruit tree planting must similarly tend to their crops.

Although initial cash incomes may be small, the people have been able to enjoy a ready supply of fish protein and this has made it less necessary for them to fish in the rivers. The fruits also sell well as there is a high demand for species like petai and dabai among local residents. Above all, it is encouraging to note that earlier participants in the Ulu Mujok have been able to sustain their business without having to depend on the ITTO project.

In implementing its activities, the PTNP project have been able to count on the logistical support of timber companies like Samling, Shin Yang and others, to transport both materials and staff to as near the project sites as possible; for the final stretch of the journey which can still take many hours, the Penan themselves help to carry the materials. These companies have also been forthcoming with other contributions, both in cash and in kinds.

Good planning, stakeholder participation and commitment, and a lot of hard work are necessary in order to achieve good results. We are happy that our initiatives have helped to make a difference in the lives of the local communities living around LEWS and PTNP. Through awareness education, the people have also come to better understand the government's policy on sustainable forest management and nature conservation. Many have come to the realization that because of the existence of the Sanctuary and National Park, they have been able to enjoy clean water and fresh air, and above all, an abundance of plants and animals in the forests around them.

To sustain the work of ITTO after the projects completion, Forest Department Sarawak is planning to set up a new Community Development unit in 2011.



A tree of rhu bukit (*Gymnostoma sumatrana*)



We would like to acknowledge the following donors for their contributions to the projects:

Development of Lanjak Entimau Wildlife Sanctuary as a Totally Protected Area

Switzerland

Japan

USA

Transboundary Biodiversity Conservation - The Pulong Tau National Park

Switzerland

Japan

Norway

Republic of Korea

USA

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