

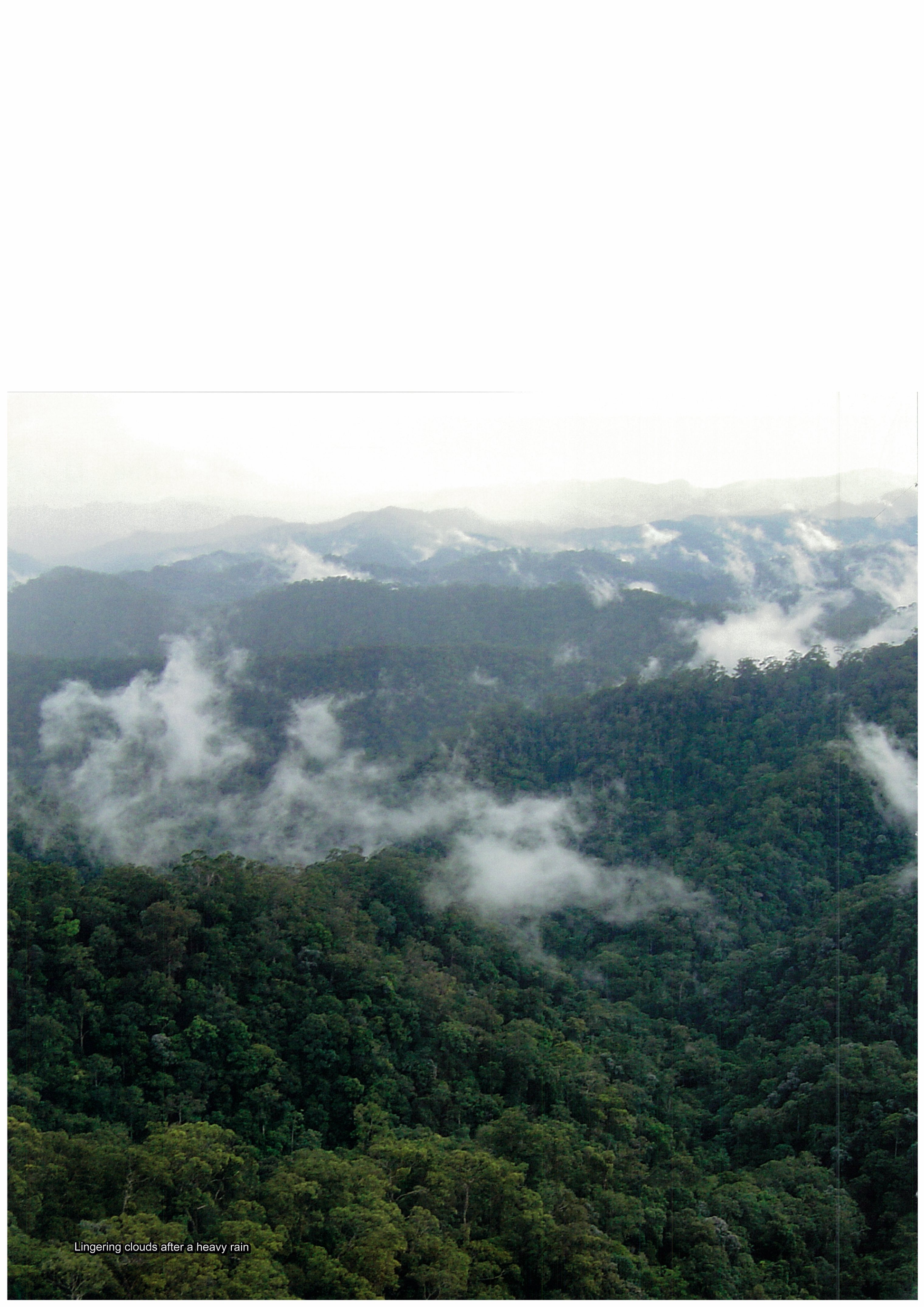
Chapter 4

LANJAK ENTIMAU AS A LIFE SUPPORT SYSTEM

Through evapotranspiration the forest creates clouds and rain, shelters and cools the environment. Excess ground water accumulates to form rivers. In Sarawak, it is the rivers that have shaped the lives of its peoples, socially, culturally and politically. For the rural communities the rivers are a vital means of communication besides providing water for drinking, washing and agriculture.

Lanjak Entimau is where many big rivers begin their long journeys into the sea. Located in the headwaters of the Batang Rajang and Batang Lupar, the Sanctuary occupies two watersheds and four drainage blocks. These drain into the two major rivers of Batang Rajang in the north and northwest, and Batang Lupar in the southwest, with the Rajang block alone occupying 77% of the total drainage basins. The Katibas, Kanowit, Poi and Ngemah form the major tributaries of the Rajang; while Ai, Lemanak and Skrang drain into the Batang Lupar. Along the banks of this network of rivers live more than 12,000 Iban people in 100 longhouses, just as their ancestors have done for many years in the past.





Lingering clouds after a heavy rain



The Batang Ai Hydro Dam is situated south of Batang Ai N.P. and receives water from the Lanjak Entimau and Batang Ai watersheds to generate electricity.



For transportation, the Iban use specially designed wooden longboats with narrow bodies and powered by small outboard engines. These boats are ideal for negotiating swift flowing rivers with dangerous bends, rocky outcrops and boulder beds that most often give rise to numerous rapids. Where the water is too shallow for the engines, the boatmen use wooden poles to push the boats forward. This river transport is used to send children to school, go to their farms, visit friends and relatives, and do business in the towns.



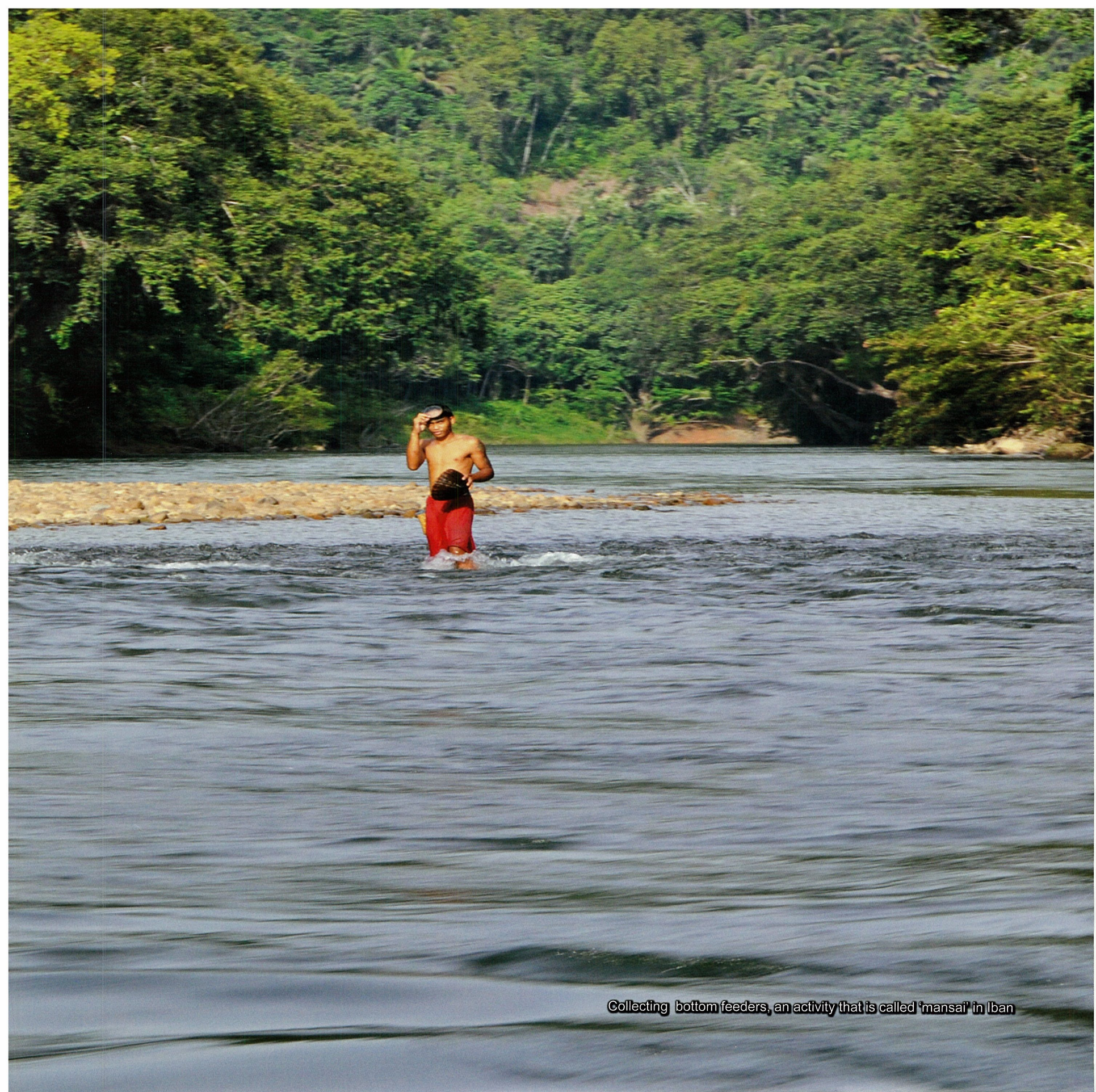






Bounty from the river





Collecting bottom feeders, an activity that is called 'mansai' in Iban



Iban lady holding the highly priced ikan semah (*Tor duronensis*)

The people do not have to venture far into the forest to get what they need. Fish provides a ready source of protein. Many timber trees and fruit trees thrive on the fertile alluvial soils near the rivers. Belian or Borneo ironwood (*Eusideroxylon zwageri*) is a must for longhouse posts, being strong and extremely durable and resistant to termite attack. Another much valued tree is the engkabang jantung or illepe nut tree (*Shorea macrophylla*). This tree produces an excellent timber for house construction and boat building, and oil extracted from the nuts is consumed. When exported, the oil is used for making chocolates and cosmetics. However, supply is irregular as the tree only flowers and fruits at intervals of 3 to 5 years. The tree is also protected.

Popular fruits like durian (*Durio*), rambutan (*Nephelium*), dabai (*Canarium odotophyllum*) and petai (*Parkia speciosa*), and wild vegetables provide the farmers with additional cash income. Wild vegetables are harvested from the shoots of the pantu (*Eugeissona*) and rattan palms, and from gingers (*Etilingera*) and ferns (*Stenostachys palustris*, *Athyrium esculentum*).



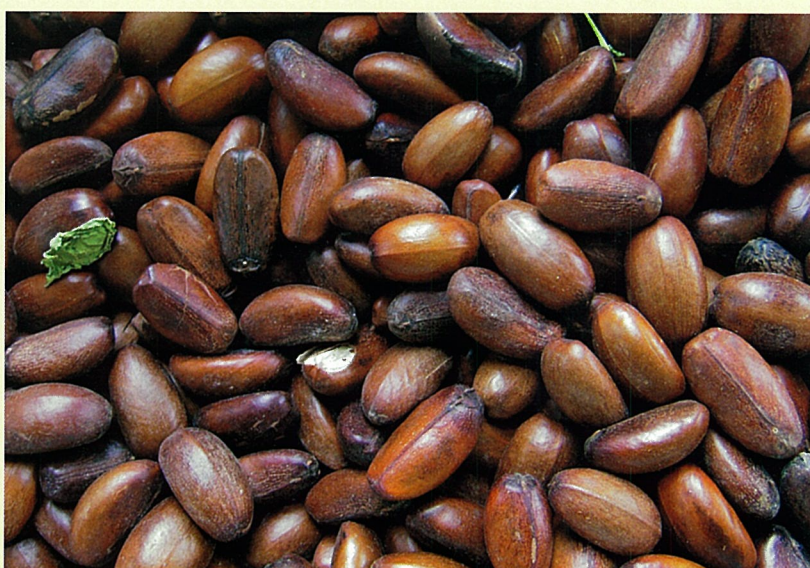
Nephelium rambutan-ake (Mak)



Parkia speciosa (Petai)



Durio zibethinus (Durian)



Elateriospermum tapos (Perah) with edible fruits





Eugeissona utilis palm (pantu) with edible shoots and sago starch (right)
Etlingera punicea (tepus) with edible flowers (above)

Chapter 5

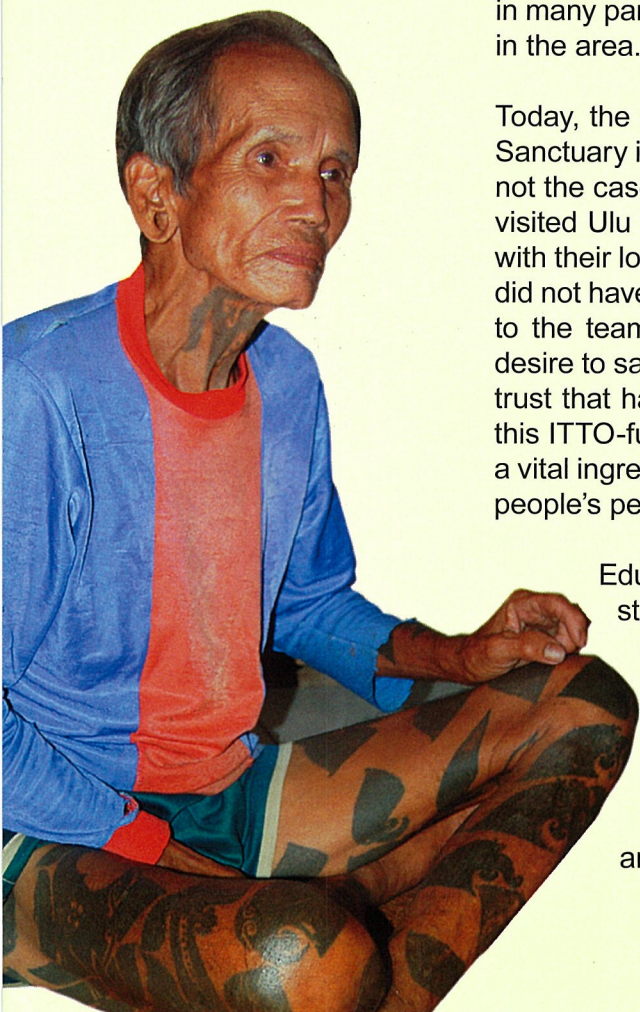
THE PEOPLE OF LANJAK ENTIMAU

The Iban people live in 100 longhouses around the periphery of the Sanctuary. From the Ulu Kapuas in Kalimantan, Indonesia, their ancestors first reached the Batang Ai area around the mid-16th Century. Many migrated or *bejalai* to seek fertile land for farming and sometimes to escape from headhunters. Around the 1800s, a group from the Batang Ai moved across to the Rajang Basin and some settled in Ulu Katibas that now forms a part of the Sanctuary. Interviews with Api anak Sanun, the *Tuai Rumah* or headman of Rumah Api longhouse and others in Ulu Katibas indicated that their ancestors were already living in the area around 250 years ago, and many families later moved down to settle in the Batang Rajang.

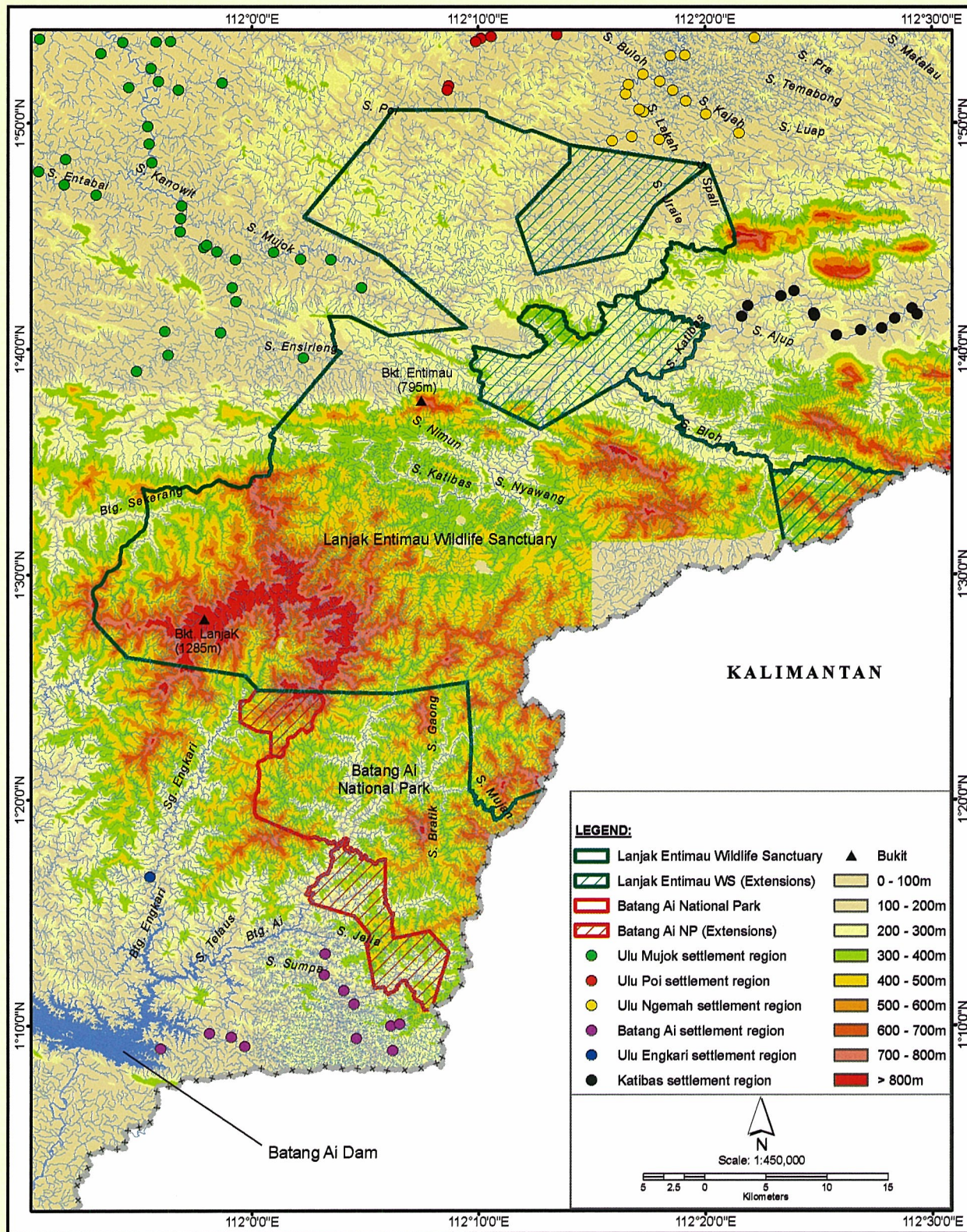
As traditional paddy farmers, their first activity upon settling was to clear the forest for paddy planting by shifting cultivation, a practice that is still common among many rural communities up to the present day. The secondary forests in many parts of the Sanctuary bear evidence of their past agricultural activities in the area.

Today, the people accept and are happy to know that Lanjak Entimau Wildlife Sanctuary is a totally protected area where no logging is permitted, but this was not the case at the beginning of the ITTO project. When a forest ecology team visited Ulu Katibas for the first time in 1993, some residents blocked the river with their longboats to prevent them from entering the Sanctuary, although they did not have the right to do so. Another group led by Api anak Sanun later came to the team's field camp to protest. Their reactions were prompted by their desire to safeguard the forest from logging and for their livelihoods. The mutual trust that has been gradually built up with the people through the activities of this ITTO-funded project and the dedication of the project personnel has been a vital ingredient to the Sanctuary's management – the project has changed the people's perception. They are now more highly appreciative of conservation.

Education is becoming increasingly important for the people. After studying in the rural primary schools, many continue their secondary education in the towns. Education and employment, locally and even overseas, are the main reasons that cause many parents and young men and women to leave their longhouses. They leave behind elderly parents or grand parents and other relatives, and young married couples with infants to continue to work in the farms. Shortage of land, loss of soil fertility, ruggedness of terrain and inaccessibility are some of the problems faced by the farmers.



Iban Settlements around Lanjak Entimau Wildlife Sanctuary and Batang Ai National Park





Rumah Sapai, Ulu Katibas (above) and Rumah Gerasi, Ng. Ju, Mujok (below)



Welcoming visitors with 'ngajat' dance and entertaining guests at longhouse corridor or 'ruai'



Farmers with their hill paddy



Fruit and pepper garden



Drying paddy and pepper on the 'tanju' outside the longhouse





Making oar for the longboats





The 'miring' ceremony is performed to ask for blessing and protection from forest spirits

A Paradigm Shift – Empowering Local People in Conservation

Totally protected areas are created primarily for environmental and biodiversity conservation, and management and law enforcement are very much in the hands of the government alone. The people only have to obey the laws as any unauthorized entry, if discovered, will be prosecuted.

In the past forest resources were in abundance outside the Sanctuary, thus illegal entry or encroachment was not a big problem. This situation is gradually changing as logging continues close to the Sanctuary, and with depletion of resources, incidents of encroachment by some timber contractors and local people have been reported. Another illegal activities is collecting gaharu or scented wood.

The ITTO-assisted project's strategies to prevent illegal activities in the Sanctuary are environmental education and publicity, promoting community development, and encouraging local participation in conservation management. Strengthening enforcement by the government is also not neglected.

Community development introduces the concept of sharing the forest resources with the local communities through sustainable utilization. The main activities, as determined by the people themselves and with project support, are fruit tree planting and fish farming.

Fruit tree planting is carried out by individual farmers in their respective farmlands. The farmers are provided free with seedlings and fertilizers, and on-farm training on planting and maintenance are given. A nursery to raise materials for planting is also established.

Fish culture is a joint activity of an entire longhouse community, with success depending on good cooperation and team work. Although indigenous species like ikan semah (*Tor douronensis*) are preferred they are very slow growing and fish stocks are difficult to obtain. An exotic species has to be introduced at the start. With the help of the participants, valley ponds are constructed across running streams. All materials for the dam construction, fish fries and feeds are provided by the project. Construction is led by a team of experienced forestry staff and consultants who also provide training on management and maintenance.

A memorandum of understanding with the participants is required to help them to manage their money. They are to save 40% of their income in a joint bank account, set aside 30% to re-invest, and share the remaining 30% equally among themselves.

Starting from Ulu Mujok in 2003, the activities have expanded to the headwaters of Ngemah and Kanowit. By 2010, a total of 181 fruit tree farms were established and 29 fish ponds constructed. Leading pioneers in fish farming are the two longhouses of Anthony Bau and Mengiring anak Masih; while Gerasi anak Kapi and Jawa anak Ribut are the most successful among the farmers. Gerasi's farm has yielded the highest sale of RM4,000 (US\$1,300) in a single fruit harvest.

Harvesting the fish at different times of the year helps to avoid competition between longhouses and ensure an all year round supply, a clever idea that was thought of by Anthony Bau from Ulu Mujok. Another marketing idea of Anthony and his team is to invite friends and relatives to their longhouse for a feast during harvest time, and many ended up by buying fish from them. Obviously a shrewd marketing strategy!



Transporting fruit tree seedlings



On-farm training



Two of the most popular local fruits planted by the people: petai (left) and dabai (right)





Fish farming activities





Feeding, harvesting, selling





Fish farming committee members



Women play a significant role in community-based development

Many are happy to share their thoughts of how community-based development has affected their lives, as quoted below.



Anthony Bau: *“Thank you for making an improvement to our livelihood. It is now easier to earn a living. There is no more need for us to go into the rivers to fish during the Gawai festivals. The fish in the rivers has also recovered.”* Anthony, a retired school teacher, is an effective community leader and the local driving force in Ulu Mujok.



Rejang anak Sugai from Anthony Bau's longhouse: *"Community relationships have improved since we began to work together. We are growing to be independent of the government. We have saved enough money to upkeep our fish pond and continue with fish farming. I am thinking of building my own pond."*

Jawa anak Ribut from Gerasi's longhouse: *"When I brought the petai fruits I planted to my relatives and friends in Entabai and Julau, many asked why I did not bring more to sell. They told me that the fruits were like gold to them because it was no longer easy to get them from the forest."*





Tuai Rumah Mengiring anak Masil: “Since we started fish farming, we have done less hunting; as a result, many wild boars and macaques have come to our farms and damaged our crops.”



Nyalih anak Masil from Mengiring's longhouse: *"One year after ITTO and Forest Department came to help us I built a fish pond with my own money and have enjoyed more income."*

Tuai Rumah Gerasi anak Kapi: *"Our family is learning to become more enterprising, and we have been earning additional income from the fruits we have planted."*





Restoring fish resource through 'tagang' system, Ulu Engkari



A system to sustainably manage fish stocks, originated in Sabah is the 'tagang'. The system (called 'tagal' in Sabah) is designed to restore depleted fish populations in natural rivers due to over-fishing. It was introduced to three longhouses in the headwaters of the Engkari River in 2010. Under this system, fishing is regulated by dividing the river into three zones - a 'No Fishing Red Zone' for spawning, a 'Yellow Zone' for controlled fishing, and a Green Zone where fishing is permitted. The recent monitoring in March showed a significant increase of fish populations in the river. Ikan semah (*Tor douronensis*) is the most valuable indigenous species that is in high demand and is sold at RM100 (US\$33) or more per kg in the towns. If properly managed, the residents of the three longhouses can expect a windfall from the sale of this fish alone.

Community development has demonstrated that (i) conservation can actually benefit from active community participation, (ii) allowing the people a share of the resources need not in any way conflict with the objectives of conservation, and (iii) involving the people and other local stakeholders in conservation management seems no longer an option but a necessity. And results speak for themselves.

Environmental Education

Between 2008 and 2009, environmental education was implemented in 64 longhouses and 14 rural primary schools at the periphery of the Sanctuary. The programme introduced the subjects on forest policies and laws, forest industry, sustainable forest management, and environmental and biodiversity conservation; and was conducted in the Iban language. Activities for the school children included field excursions to learn about basic ecology, plant and animal relations, plant identification and bird watching. Awareness on the need and urgency of conservation measures was given special emphasis in these programmes.

The programme provided a first time opportunity for the local communities to learn about forests and conservation, and to better understand the importance of protected forests like the Lanjak Entimau Wildlife Sanctuary. Their main concerns with logging are pollution of the rivers and not having enough timber to meet their domestic needs. It was equally an enriching experience for the students to learn many new things outside of their classrooms. As much fun as possible was introduced in the outings.





Understanding nutrient cycling





Bird watching (left) and note taking (above)

Chapter 6

TRANSBOUNDARY COOPERATION IN BIODIVERSITY CONSERVATION

Sarawak created history in 1994 by partnering with West Kalimantan in Indonesia to establish the first transboundary biodiversity conservation area (TBCA) in the humid tropics. This is the TBCA of Lanjak Entimau Wildlife Sanctuary and Betung Kerihun National Park. The Betung Kerihun N.P. project was also funded by ITTO in 1993. About 2,000 orangutan of the same sub-species as that in Lanjak Entimau occur there. This TBCA with an uninterrupted biophysical corridor provides a unique opportunity for the joint management of the primate and other valuable wildlife resources, as it is often said that animals do not recognize political boundaries. The synergy generated by such cooperation which extends enormously the conservation area and benefits was the fundamental motivation agreed between Malaysia and Indonesia.

An inauguration ceremony held at the Batang Ai Hilton Hotel on 7 October 1997 was jointly officiated by the Right Honourable Pehin Sri Hj. Abdul Taib Mahmud, Chief Minister of Sarawak; and the Honourable Ir. Djameludin Suryohadikusumo, the Minister of Forestry of Indonesia at the time. In 2003, the Batang Ai National Park located south of Lanjak Entimau was added to bring the TBCA complex to one million hectares.

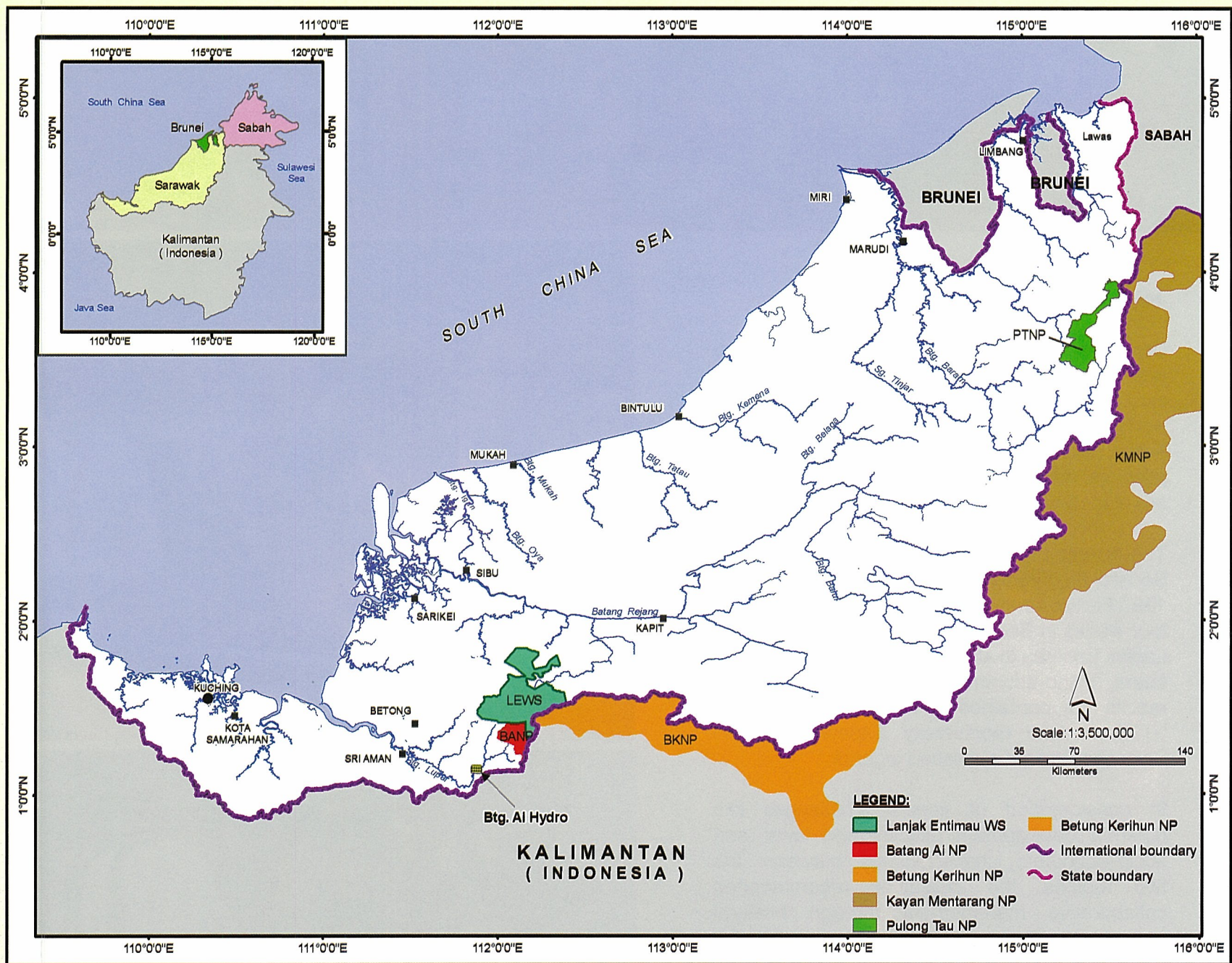
Transboundary cooperation brings together large areas of forests to be managed as an entity to enhance their conservation value. The pioneering Malaysia-Indonesia initiative has prompted the establishment of TBCAs between Peru and Ecuador in South America, Ghana and Gabon in Africa, and Thailand, Cambodia and Laos in Asia. The transboundary domain within the ITTO tropical member countries has since grown to 10 million hectares. Promoting peace between close neighbours and mitigating illegal cross-border wildlife trade and disputes are other important functions of transboundary cooperation.

In 2005, a second TBCA between Sarawak and Indonesia was created between the Pulong Tau National Park in north-east Sarawak and Kayan Mentarang National Park in East Kalimantan. This TBCA has an area of some 1.3 million hectares.



Black spotted rock frog (*Staurois natatator*)

Location Map Of Transboundary Biodiversity Conservation Areas





Joint TBCA Activities

Cross-border activities between Lanjak Entimau and Betung Kerihun, like meetings, research, exchanging information, study tours and workshops are organized through a Joint Task Force. Information on malpractices is shared and possible measures to strengthen enforcement are also discussed in those meetings.

The highlight of cooperation was the joint ITTO Borneo Biodiversity Expedition to the TBCA in 1997. Forty scientists from the two countries spent four weeks in Betung Kerihun and two weeks in Lanjak Entimau to study forest ecology, flora and fauna, socio-economy and anthropology. The results are contained in the expedition report "ITTO Borneo Biodiversity Expedition (1997) Scientific Report" published in 1999.

In consideration of various challenges like different development policies and laws, and socio-economic characteristics between the two regions, the expedition recommended collaborative management through bilateral research as the best management option for successful management of the transboundary domain.





Officers and community leaders from Betung Kerihun National Park visiting Lanjak Entimau Wildlife Sanctuary



Activities during IBBE 1997



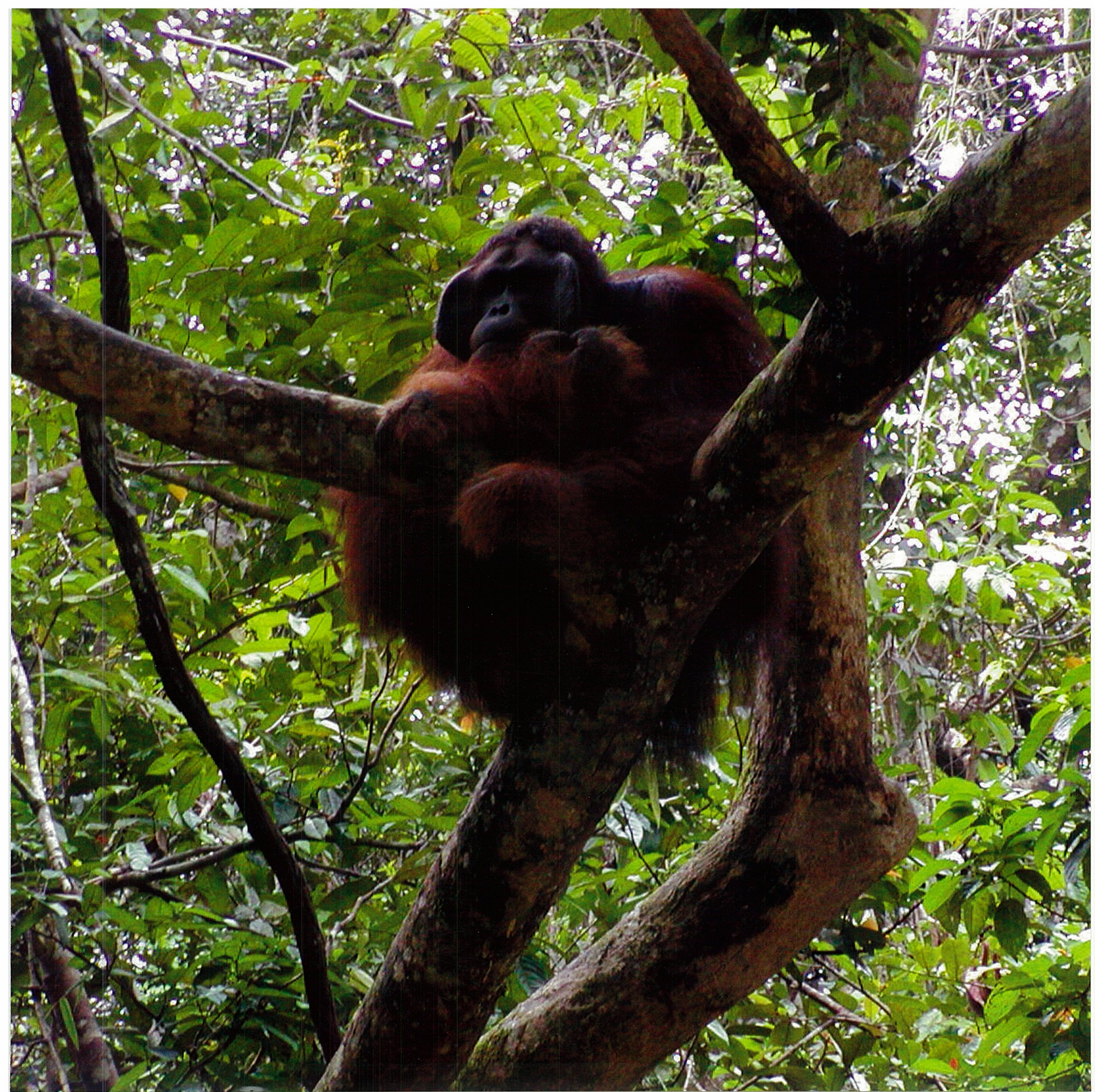
Orangutan Strategic Action Plan

The TBCA shares a common goal to conserve and sustain the population of orangutan in central Borneo. In order to achieve this goal, the document entitled “Orangutan Strategic Action Plan: Transboundary Biodiversity Conservation Area” was produced in 2010. The plan proposes a series of time-bound and locally relevant conservation interventions within the protected areas of Lanjak Entimau W.S. and Batang Ai N.P. in Sarawak and Betung Kerihun N.P. in West Kalimantan; as well as joint activities between the two regions.

By implementing the action plan, there will be secure and stable habitats to sustain viable populations of the orangutan as well as numerous other animal species that make their home in the TBCA. This is done by reducing threats, creating positive community engagement in conservation, and effective collaborative management through bilateral research, and possible common joint cooperative actions and approaches. The Strategic Action Plan has proposed joint implementation for the next ten years. Progress will be reviewed in 2015.



Orangutan nest



Chapter 7

THE WAY FORWARD

The ITTO-assisted Lanjak Entimau Wildlife Sanctuary project has provided the vital driving force to generate many new ideas and activities for the management of totally protected areas in the future. The project has helped to:

- (a) strengthen environmental and biodiversity conservation as an essential component of sustainable forest management and sustainable utilization of forest resources, both timber and non-timber products, in the local context;
- (b) promote and extend transboundary biodiversity conservation in the humid tropics;
- (c) promote the concept of community participation in conservation so as to enhance the local benefits of totally protected areas;
- (d) raise awareness on environmental and biodiversity conservation;
- (e) incorporate community services as a strategy for sustainable forest management for mutual benefits. The new Community Service Unit established under the Forestry Department is also entrusted with the task of sustaining the ITTO projects in Lanjak Entimau and Pulong Tau;
- (f) contribute to the progress of the Heart of Borneo (HoB) Initiative in Sarawak.

Within the global perspective of the tropical forest crisis of high rates of deforestation and degradation, illegal logging, unsustainable utilization of forest resources resulting in loss of biodiversity, adverse impact on environmental values and hardships to local communities in their lives and livelihoods, the experience gained and the lessons learnt in the project, is most rewarding. As it has often been said, forestry is not about trees. It is about people, especially those living in and around the forests. The higher the dependence of local communities on forest resources, the greater the conservation and need to accord priority to meet their daily necessities.

With the government's concerted efforts for the socio-economic development of the rural communities in Sarawak, through education and land development, creation of employment opportunities and various community development projects, the trend is for the local communities to be less and less forest-dependant. Nevertheless, this is still an important element in successful conservation efforts in Sarawak.

For some 18 years, working practically with local communities through various activities in four phases of this project has resulted in forging cooperation, understanding and mutual trust to the extent that the local people living at the periphery of the Sanctuary have gradually become the friends of enforcement agencies and indeed the protectors and custodians of the conservation area. Local people must be central to conservation efforts because they are on the ground and their lives are intimately intertwined with forest resources. This may be singled out as one of the biggest achievements of the project. This book is indeed a tribute to those local communities who have helped to change the landscape in biodiversity conservation in the State.

Creation of awareness, forging partnership and mutual trust on what conservation and sustainable utilization means and entails, is fundamental. These must be the criteria and indicators for protecting conservation areas and where efforts and resources must be directed.









Tuai Rumah Jayan of Nanga Ensirieng with traditional tattoo

Acknowledgement

On behalf of ITTO and Forest Department Sarawak, I gratefully acknowledge the sustained support of the Malaysian Government and State Government of Sarawak towards the Lanjak Entimau project. Equally, the assistance of the ITTO Executive Director, Mr. Emmanuel Ze Meka and his predecessors Datuk Dr. B.C.Y. Freezailah and Dr. Manoel Sobral Filho, and members of the ITTO Secretariat throughout the period of project implementation has contributed to the success of this project. The guidance of the Project Steering Committee has also been most valuable.

I am also grateful to donor countries Japan, Switzerland and USA for their confidence in us by giving many years of financial support; and especially to Switzerland for financing the publication of this book. I would like to acknowledge the contributions of our former Directors of Forests Datuk Leo Chai, Datu Cheong Ek Choon and Datu Hj. Len Talif Salleh. Datuk Dr. James Dawos Mamit, formerly with Forest Department Sarawak played an instrumental role in enabling the project's formulation and implementation. He was also the first ITTO Projects Coordinator for Sarawak. Dr. Penguang Manggil continued with the good work when he took over as the Projects Coordinator from 1999 until 2005.

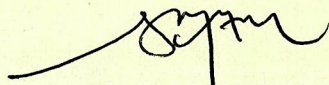
I must not forget the immense contributions of all the project consultants, local researchers and technical assistants who were engaged at different times during the project; there were too many for me to mention their names. The project leaders were Mr. Mohd Khan Momin Khan during Phase I, Dr. Paul P.K. Chai during Phases II and III, and Miss Zarina Shebli during Phase IV.

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The photographs used in the book were taken mostly by project consultants and forestry staff involved in the Lanjak Entimau project; these photographs are properties of Forest Department and ITTO. Miss Lily Sir and Mr. Rantai Jawa of Sarawak Forestry Corporation has allowed several of their photographs to be used.

I would also like to thank the following for providing the names for fungi and orchids: Dr. Lee Su See (fungi) and Ms. Ling Chea Ying (orchids).

Last but not the least, I pay special tribute to the Iban communities who are now friends of Lanjak Entimau, and with whom we shall continue to work closely to secure the Sanctuary as one of our best biodiversity conservation areas.



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