

Since the original Completion Report from the Executing Agency is not available, below is the abstract from CRF(XXV)/3 concerning the completion of this project:

(3) PD 106/90 Rev.1 (F) Development of the Lanjak-Entimau Wildlife Sanctuary as a Totally Protected Area, Phase I (Malaysia)

Budget and Funding Sources:

Total Budget:	US\$	1,985,141
State Government of Sarawak:	US\$	234,304
Government of Japan:	US\$	1,550,837
Government of Denmark:	US\$	200,000

Implementing Agency: Forest Department, State Government of Sarawak

Session of Approval: ITTC Session IX, November 1990, Yokohama

Starting Date and Duration: 13 November 1991 / Two years

Approved Revised Date of Project Completion: May 1997 (Borneo Biodiversity Expedition, CRF(XX))
May 1998 (Borneo Biodiversity Expedition, CRF(XXII))

I. Introduction

The Council approved the project during its Ninth Session, November 1990, in Yokohama and the Phase I was funded during the same session. It aims to develop the Lanjak-Entimau wildlife sanctuary as a totally protected area for nature conservation and as a site for biological research. The project is one of the eight related proposals which flow from the recommendations of ITTO Mission to Sarawak in 1990.

II. Project Objective

The project objective was to develop a comprehensive management plan for the Lanjak-Entimau Wildlife Sanctuary (LEWS) and a draft proposal for the implementation of the management plan (Phase II).

III. Project Activities

The project activities included inventory of all the fauna and flora of the area including their characteristics, collection of socio-economic data and life styles of local communities and development of the management plan involving forest ecologist, primatologist, herpetologist, ornithologist, botanist, entomologist, and sociologist.

IV. Project Achievement and Outputs

The project has resulted in the following outputs:

- the Management Plan of LEWS;
- numerous individual reports based on the outcomes of intensive terrestrial surveys to the sanctuary which discovered more than half of a dozen new species previously unknown to Borneo Island; and

- the proposal of Phase II of the project PD 14/95 Rev.2 (F) which has been approved and financed during the ITTC(XXI).

Fieldwork for the first phase of the Lanjak-Engimau project commenced in mid-1993 in order to undertake a general survey of the area by a combined team of international and local experts as well as staff from the Sarawak Forest Department which is responsible for overall project implementation. All studies on ornithology, herpetology, forest ecology, entomology, geology, primates and social aspects have been completed. These studies have confirmed an extraordinarily rich biodiversity in the area. Some new species were discovered. More than 1,000 species of trees (> 10cm diameter) were found, making the area among the most floristically rich sites studied in Borneo. There is such an abundance of seedlings of valuable timber species that the forest ecologist on the team has designated several areas as gene banks or seed sources for the future. In addition, botanical surveys in cooperation with the local Iban people have recorded 140 species of plants used in traditional medicine and at least 114 locally consumed varieties of wild fruits and vegetables. Specimens of South-East Asia's giant parasitic flower, the *Rafflesia*, were also reported from the southern areas of Lanjak-Entimau.

Faunal survey results have been equally exciting. The number of orangutans in the Sanctuary is estimated to be more than 1,000 individuals, while the population of Bornean gibbons is understood to exceed 20,000. This gives Lanjak-Entimau the highest known population density of the species ever recorded in Borneo. Birds are also abundant with over 200 species recorded, including the rare Bulwer's pheasant, seven of the eight species of hornbills known from Sarawak, and about half of the bird species known to be endemic to Borneo. Herpetofaunal surveys recorded a total of 78 different species, of which one was extremely rare and at least four others have been found to be new to science. Casual collections of fish from several streams in the Sanctuary recorded 36 species, of which two are previously undescribed, and a collection of crabs from both freshwater and forest floor habitats results in the discovery of one new genus and three new species.

The project conducted a joint scientific expedition called "ITTO Borneo Biodiversity Expedition" (1997) involving Project PD 26/93 Rev.1 (F) which covers a similar conservation area (Bentuang Karimun) in West Kalimantan, Indonesia.

The Expedition started on the West Kalimantan side and was successfully conducted from 1st to 29th September 1997 involving 19 experts and one photographer from Indonesia and 20 scientists, one photographer and a writer from Malaysia. Both teams re-grouped to examine several aspects such as forest ecology, ethnobotany, sociology, botany, primatology, ichthyology, herpetology, ornithology and ecotourism. The Expedition to Sarawak, Malaysia, was delayed to 12th November and completed by the end of November 1997 due to the extreme haze from land/bush fires in Indonesia.

The joint Sarawak team was strengthened by the participation of a professional photographer from U.S.A., a writer for Royal Geographical Magazine, a geneticist recommended by the International Plant Genetic Resources and a senior expert from the World Conservation Union/IUCN.

Individual reports have been compiled, while several articles were published. The popular version of the Expedition report was also published and disseminated. Presentations on the outcomes of the Expedition were given during the Twenty-second and Twenty-third Sessions of the Committee.

A joint Steering Committee comprising government authorities and both project's management has been established to oversee the implementation of the Expedition and to exchange views on the management of the transboundary conservation area.

Forming a contiguous tract of considerable size, which extends over almost one million hectares of tropical rain forests the LEWS and Bentuang Karimun offer a unique opportunity for various forms of co-operation between Indonesia and Malaysia in their effort for biodiversity conservation.

V. Lesson Learnt

The project discovered that thousands of species of plants and over eight hundred species of vertebrate animals live within the Lanjak-Entimau Sanctuary. Insects contribute additional thousands of species. In less than one year, three species of plants, two frog species, two species of reptiles, two species of fish and four crabs, all new to science, have been discovered.

Beyond these discoveries, which have merely scratched the surface, is the role of the Sanctuary as a permanent reserve for seed stock and seedlings. This bank for genetic material from ancestral varieties of timber and fruit trees, and other biological resources, provides for the renewal or improvement of genetic quality of commercial species. This forms a crucial backup system for the agriculture and forestry sectors of the State and National economy. Furthermore, there is great potential benefit to Sarawak's people through the investigation and use of genetic resources under licensing agreements developed by the Sarawak Government, patterned after the Biological Diversity Convention of the United Nations.

Lanjak-Entimau also serves to protect the watersheds of two of Sarawak's main rivers, and to preserve and maintain water quality for the Batang Ai Reservoir. A supply of clean water will be an increasingly important resource for the future.

VI. Dissemination of Results

The project produced many interesting reports and the management plan. This includes the following:

1. Development of the Lanjak-Entimau Wildlife Sanctuary as a Totally Protected Area, Phase I; and
2. Proceedings of the Seminar on the Lanjak-Entimau Biodiversity Conservation Area.

Additional publications will be finalized and published under Phase II of the project PD 15/95 Rev.3 (F).

VII. Recommendation Related to Future Work

Conservation prospects for biodiversity in this part of interior Borneo have been greatly enhanced by the inclusion of Lanjak-Entimau with the Bentuang-Karimun Reserve in West Kalimantan, Indonesia. The two reserves form a trans-border protected area of pristine tropical forest which is one of the largest in the world.

The project continued the expanded works under the implementation of the Management Plan for Phase II and Phase III.

VIII. Concluding Remarks

Finally, the Sanctuary forms an important spiritual heritage for the people of Sarawak as one of the last great virgin forests of the interior. Its magnificent beauty optimizes Borneo's dynamic strength, pristine natural beauty and remarkable diversity, as one of the world's oldest and most precious tropical rain forests.

Lanjak-Entimau, along with Sarawak's other protected natural areas, will inspire a sense of community and common heritage for the people of Sarawak, Malaysian and the region.

