

INTERNATIONAL TROPICAL TIMBER COUNCIL  
Eighth Session  
Denpasar, Bali, Indonesia  
16 - 23 May 1990

ITTC(VIII)/7  
7 May 1990  
Original: ENGLISH

REPORT SUBMITTED TO THE INTERNATIONAL TROPICAL  
TIMBER COUNCIL

BY

MISSION ESTABLISHED PURSUANT TO RESOLUTION I (VI)

"THE PROMOTION OF SUSTAINABLE FOREST MANAGEMENT:

A CASE STUDY IN SARAWAK, MALAYSIA"

The designations employed, the presentation of the material and the views expressed in this document are those of the Mission and do not necessarily imply acceptance by the International Tropical Timber Organization (ITTO).

**THE PROMOTION OF SUSTAINABLE FOREST MANAGEMENT**  
**A CASE STUDY IN SARAWAK, MALAYSIA**

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## ACKNOWLEDGEMENTS:

The Mission is grateful for support and encouragement received from:

Datuk Seri Dr Mahathir Mohamed, Prime Minister of Malaysia; Datuk Seri Dr Lim Keng Yaik, Minister for Primary Industries; Datuk Alias bin Ali, Deputy Minister and staff of the Ministry for Primary Industries; members of the Forest Department (Peninsular Malaysia); Director-General, Malaysia Timber Industry Board; Director-General, FRIM; Director-General, Economic Planning Unit, and in Sarawak, Datuk Patinggi Tan Sri Haji Abdul Taib Mahmud, Chief Minister; Dato Mohd Jabil; Mr Leo Chai, Director of Forests; Abang Haji Kassim, Deputy Director; Mr Cheong Ek Choon, Assistant Director; James Mamit and all other staff of Forest Department headquarters, Kuching, liaison officers and drivers;

En. Adenan bin Haji Satem, Minister for Land Development; En. Hamid Bugo, Permanent Secretary, Ministry of Planning & Natural Resources, other officers of State administration and agencies including SPU, LCDA, SALCRA & STIDC; Dato Lau Hui Kang, Chairman and other members and staff of Sarawak Timber Association;

Residents of Kapit, Limbang and Miri; District Officers and Assistant District Officers of Limbang Lundu and Baram; Community leaders of Limbang, Lundu, Kapit and Marudi Districts;

Dr Mike Kavanagh, World Wide Fund for Nature; Dr Elizabeth Bennett, National Parks & Wildlife Office; Joseph Jawa, Executive Forester, Sabal Agroforestry Station; Michael D Alwis, Project Manager, Mayang Tea Plantation, Serian; Orvil Morningstar & Nancy Knight, Sabal Agroforestry Station;

Ding Seling, President and other members of Orang Ulu National Association Sarawak; Harrison Ngau, Sahabat Alam Malaysia, Marudi branch; Marcus C Juing, Secretary, Baram Self-Development Association; Wong Meng Chuo, Director, Sarawak Institute for Community Education;

Gary Tay, Divisional Development Officer, Miri; Oswald Braken, National Parks Officer, Northern Region; Mike Meredith, Development Officer of Mulu National Park; Liew Tchin Fah, Forest Department, Limbang; Roland Renggie, Section Forest Office, Sibui; S T Ting, Divisional Forest Officer, Kapit; W Bale, SAO, Kapit; Safuan Ahmad, Section Forest Office, Bintulu; Simon Saudi, Sub-section Forest Office, Sarikei;

Abng Helmi, General Manager, Bintulu Development Authority; Hii Yu Sing, Sarawak Company, Selalong; Philip Ho, Forest Manager, Apoh Palutan Forest Management Unit; Ross Ibbotson, Managing Director, Sime Darby Forest Management Sdn Bhd; Kong Shiaw Kian, Manager, Bintulu Lumber Development Sdn Bhd, Miri; Raymond Lau, Factory Manager, Rimbunan Hijau Plywood Mill; Vincent Lau, Rancowood Industries Sdn Bhd; Peter Ling, Kuching Veneer Sdn Bhd; Loh Wok Seng, Managing Director, Tetsan Timber Mill, Sibui; David Manjah, Forest Operations Manager, Batang Baleh Forest Enterprises; Ngu Ming Kui, Manager, Mudan-Retus Forest Management Unit; Peter Pang, Tak Hin Rattan Industries Sdn Bhd; Andrew Mat Rezza, Secretary, Bintulu Port Authority; Duke Shim, General Manager, Kuching Port Authority; Mr Ting, Borneo Lumber Company; David Tiong Cheong Ung, Marketing Director, Rimbunan Hijau Plywood Mill.

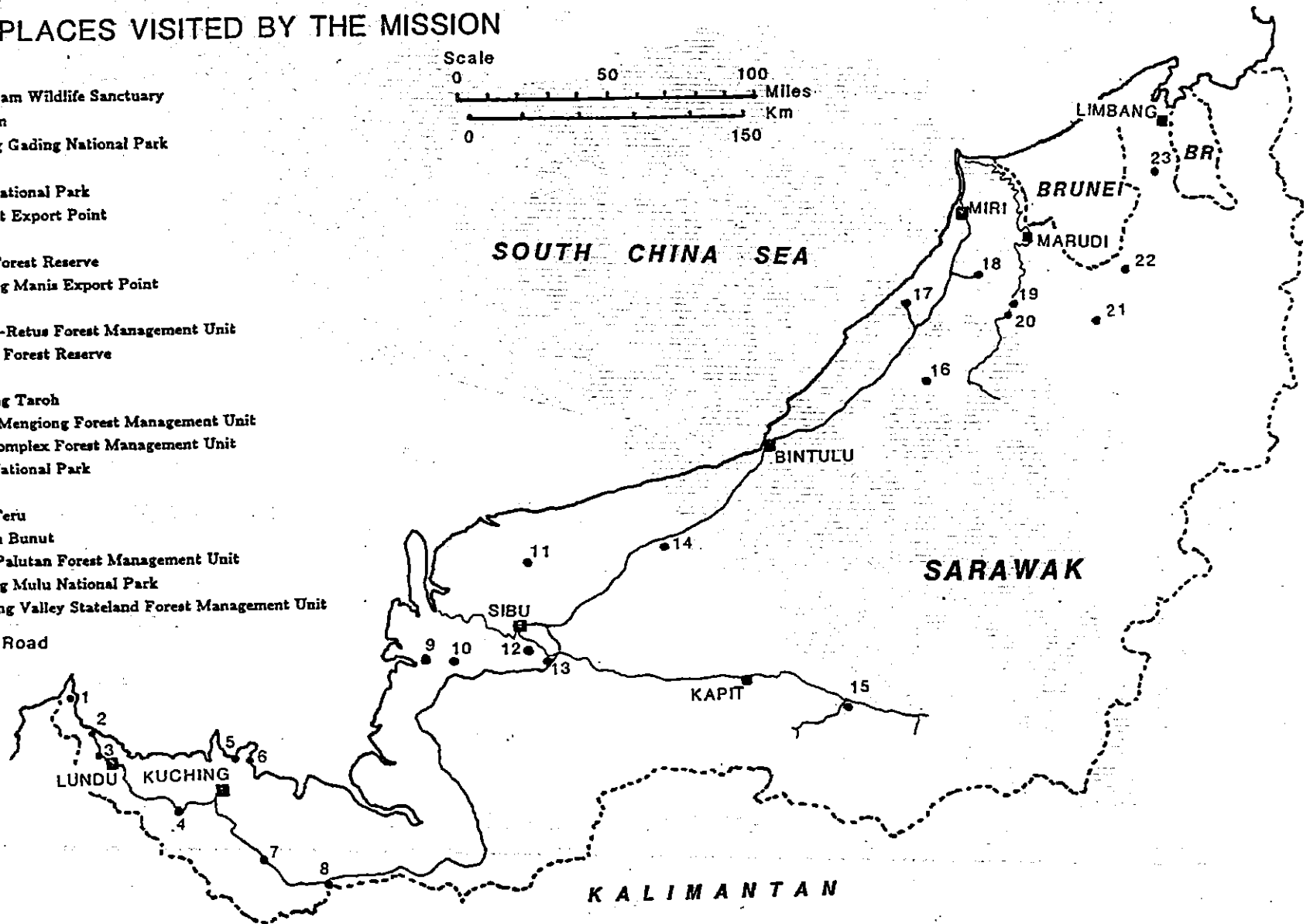
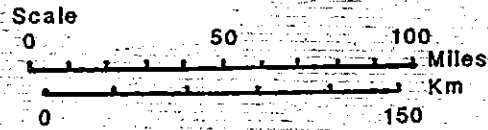
MAP 1

PLACES VISITED BY THE MISSION

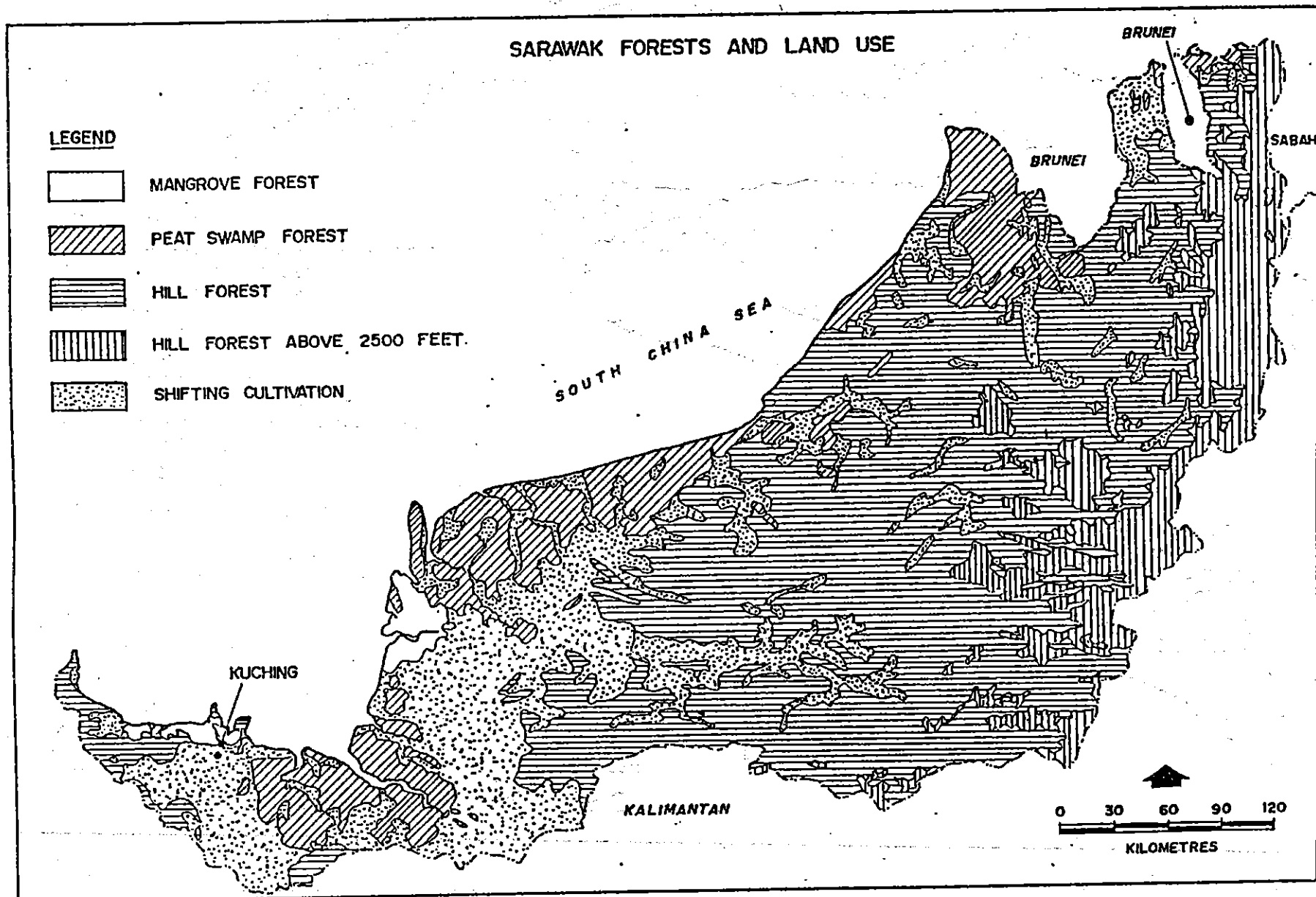
Key

- 1. Samunsam Wildlife Sanctuary
- 2. Sematan
- 3. Gunong Gading National Park
- 4. Bau
- 5. Bako National Park
- 6. Sejinkat Export Point
- 7. Serian
- 8. Sabal Forest Reserve
- 9. Tanjung Manis Export Point
- 10. Sarikei
- 11. Mudan-Retus Forest Management Unit
- 12. Naman Forest Reserve
- 13. Duria
- 14. Tanjung Taroh
- 15. Kapit-Mengiong Forest Management Unit
- 16. Suai Complex Forest Management Unit
- 17. Niah National Park
- 18. Beluru
- 19. Long Teru
- 20. Loagan Bunut
- 21. Apoh Palutan Forest Management Unit
- 22. Gunong Mulu National Park
- 23. Limbang Valley Stateland Forest Management Unit

Main Road



MAP 2



Source: WWF Malaysia



## CHAIRMAN'S SUMMARY

Following the Resolution at the Sixth Session of ITTC at Abidjan, May, 1989, the Mission was established to assess the sustainable utilization and conservation of tropical forests and their genetic resources as well as the maintenance of the ecological balance in Sarawak, Malaysia, and to make recommendations for the further strengthening of sustainable forest management policies and practices, including areas of international cooperation and assistance. The composition of the Mission reflected the balance of consumer and producer countries in ITTO, with trade and environmental interests. Mission members visited Peninsular Malaysia and Sarawak for a total of 45 days during the period November 1989 - March 1990. In Sarawak, the Mission received full and frank cooperation from the Forest Department. Mission members travelled widely throughout Sarawak, to visit forests, industry, communities and other places of interest. They benefited from discussions with government servants from many departments, the Sarawak Timber Association, community leaders, members of voluntary organizations and individuals, who in some cases came long distances to meet the Mission.

In a sentence, the Mission's overall assessment is that sustainable management of the forests of Sarawak is being partly achieved, but full achievement depends on immediate action in three aspects.

Admirable features include an established Permanent Forest Estate, a Forest Policy which sets watershed protection as a primary objective, the reservation of areas for the protection of biological diversity, an effective system for tracing and controlling the movement of logs, comprehensive management planning for the production forest and a data bank of research information unequalled in the tropics.

A major impediment to sustainability is over-cutting of hill dipterocarp forests. Other constraints are inadequate catchment management and insufficient control of felling operations. The chief factor accounting for these deficiencies is understaffing of the Forest Department. Additional personnel are urgently needed to exercise control of operations on the ground, to provide technical training and education and to undertake research. Only a major increase in staff will permit the necessary improvement of control of concession conditions in the felling areas. In particular, this control should involve tighter standards for logging on steep land in order to protect the State's freshwater resources. In order to achieve sustained output, even with intensified management and an enlarged permanent forest estate, the rate of timber harvesting will have to be reduced significantly. This could be effected in part through modifying the concession periods and coupe size, under strict control.

The network of Totally Protected Areas, although impressive, is still insufficient to protect the full range of habitats and biological diversity in the State. The procedures by which both TPAs and additions to the permanent forest estate are gazetted are excessively slow; a full-time unit might expedite the process.

Finally, to facilitate sustainable management, it is recommended that an assessment should be made of the forest resources of the State in relation to the long-term trade prospects for forest products. The organizational structure through which timber licenses are allocated, managed and operated should be reviewed. Closer consultation and greater participation among local communities should be encouraged.

With firm government support for these objectives, sustainable forestry will be achieved.

Kuching  
30 March 1990



# INTERNATIONAL TROPICAL TIMBER ORGANIZATION

## ITTO MISSION

### THE PROMOTION OF SUSTAINABLE FOREST MANAGEMENT

#### A CASE STUDY IN SARAWAK, MALAYSIA

#### I. INTRODUCTION

1. The International Tropical Timber Organization is an intergovernmental organization established under the International Tropical Timber Agreement (1983). Membership comprises producing and consuming countries of tropical timber as equal partners in a forum of consultation and cooperation on sustainable utilization and management of tropical forest taking into account both their environmental and conservation values. Currently the membership of the ITTO represents countries containing more than 75 per cent of the tropical forest in the world and 95 per cent of the international trade in tropical timber. Conservation NGOs and the timber trade actively participate in various activities of ITTO, which cover four broad programmes:

- i) research and development in reforestation and forest management and wood utilization;
- ii) reforestation and forest management;
- iii) economic information and market intelligence;
- iv) further and increased processing of the tropical timber in producing countries.

2. Central to ITTO's long-term objectives is to strike a balance between utilization and conservation of tropical forest resources through enhanced benefits to promote sustainable management of such forests.

3. At its Sixth Session, held in Abidjan, Côte d'Ivoire, 16-24 May 1989, the International Tropical Timber Council was invited by the Government of Malaysia to undertake a study of sustainable forest management in Sarawak. This generous, courageous and imaginative invitation was extended on behalf of Malaysia by the Chief Minister of Sarawak who attended the meeting in person.

As a consequence ITTC adopted resolution 1(VI) as follows:

THE PROMOTION OF SUSTAINABLE FOREST MANAGEMENT  
A CASE STUDY IN SARAWAK, MALAYSIA

The International Tropical Timber Council

Reaffirming the obligation and commitment of all Members to the objectives of the ITTA, 1983,

Bearing in mind Article 1 (a) of the ITTA "to provide an effective framework for co-operation and consultation between tropical timber producing and consuming Members with regard to all relevant aspects of the tropical timber economy", and Article 1 (h) of the ITTA, "to encourage the development of national policies aimed at sustainable utilization and conservation of tropical forests and their genetic resources, and at maintaining the ecological balance in the regions concerned",

Recalling the Statement made by the Representative of Malaysia at the Fifth Session of the International Tropical Timber Council informing the Council of the serious efforts to promote sustainable forest management in Malaysia and inviting international assistance to support the implementation of these policies,

Taking note of the Statement made by the representative of Malaysia at its current Session of ITTC,

Expressing its appreciation to the Government of Malaysia for its readiness to welcome a Mission to visit Sarawak, Malaysia, at a date to be decided by mutual agreement,

1. Establishes a Mission with the following terms of reference:

a) To assess the sustainable utilization and conservation of tropical forests and their genetic resources as well as the maintenance of the ecological balance in Sarawak, Malaysia, taking fully into account the need for proper and effective conservation and development of tropical timber forests with a view to ensuring their optimum utilization while maintaining the ecological balance, in the light of recent ITTO studies on forest management for sustainable timber production in Member countries and relevant reports by other organizations;

b) Based on its findings, to make recommendations for further strengthening of sustainable forest management policies and practices, including areas of international co-operation and assistance.

2. Authorizes financing not exceeding \$330,000 from the Pre-Project Sub-Account for the work of the Mission.

3. Appreciates the readiness of the Government of Malaysia to fully cooperate in facilitating the work of the Mission and to allow it to visit any part of Sarawak, to meet any persons and also to make available information relevant to the work of the Mission.

4. Invites all Members, and relevant international organizations and international institutions to lend their fullest support for the success of the Mission.

5. Appeals to all members, bearing in mind Article 30 of the ITTA, to use their best endeavours to co-operate to promote the attainment of the objectives of the ITTA and avoid any action contrary thereto.
6. Requests the Executive Director to take all necessary measures for the implementation of this Resolution and to prepare the necessary documentation for this purpose.
7. Requests the Executive Director to communicate this Resolution to all international organizations and others interested in the work of ITTO.
8. Further requests the Mission to present, on a confidential basis, a Progress Report at the Seventh Session and its final Report at its Eighth Session.

4. The Mission set up a headquarters office in the Royal Geographical Society, London, SW7. This address was publicized in all material relating to the work of the Mission and provided an address to which members of the public concerned with the work of the Mission sent representations. Miss Catriona Prebble served as Personal Assistant to the Leader and secretary to the Mission.

The members of the Mission were chosen to reflect the membership and interest groups in ITTO under the leadership of an independent chairman:

Leader: The Earl of Cranbrook (UK)

Jaime Munoz-Reyes Navarro (Bolivia)

John Francois (Ghana)

Sumarsono Martosudigdo (Indonesia)

Katsuhiko Kotari (Japan)

Hans Kr Seip (Norway)

Frank H Wadsworth (USA)

Morten Bjorner (Denmark)

A J Leslie (Australia)

Duncan Poore (UK)

The Executive Director of ITTO, Dato' B C Y Freezailah, accompanied the Mission throughout.

5. The Mission made two brief visits to Peninsular Malaysia: 27 - 29 November 1989 and 16 - 18 March 1990 and spent three periods in Sarawak: 29 November - 8 December 1989, 13 - 24 February 1990 and 19 - 31 March 1990. The programme of the first visit was organized in Peninsular Malaysia by the Ministry of Primary Industries and in Sarawak by the Ministry of Resource Planning. The programmes for the second and third visits to Sarawak were decided by the Mission itself. The Mission was received by YAB Datuk Seri Dr Mahathir Mohamad, the Prime Minister of Malaysia, by YAB Datuk Patinggi Tan Sri Haji Abdul Taib Mahmud, the Chief Minister of Sarawak, and by YB Datuk Seri Dr Lim Keng Yaik and YB Dato Alias bin Ali, the Federal Minister and Deputy Minister for Primary Industries, respectively.

## *The Promotion of Sustainable Forest Management*

6. The Mission worked through field visits, meetings, dialogues, and the inspection of documents and literature. Among other places, visits were made to relevant government departments, mixed hill dipterocarp forests, swamp forests and mangrove forests, timber concessions, logging operations, research plots, forest industries, ports and industrial development areas, training institutions, agroforestry projects, national parks and wildlife sanctuaries.

7. Meetings were held with the timber trade through the Sarawak Timber Industry Development Corporation (STIDC) and the Sarawak Timber Association (STA). The views of local organizations, representative community leaders and other members of the public were obtained through meetings and dialogues held in Kuching, Lundu, Sibul, Kapit, Miri, Limbang, Marudi and Long Teru, Tinjar. The locations of public dialogues were advertized in advance. During parts of the second and third visits, the Mission divided into groups in order to cover the ground as thoroughly as possible. These concentrated respectively on forest management, forest industries and the environmental and social aspects of sustainable forestry. Map 1 shows the routes; other details are contained in Annex 1.

8. The Forest Department willingly and openly provided the Mission with excellent briefings and supplied all the documentation and information requested. Staff freely introduced us to other sources of information, forwarded letters received and provided generous logistic support.

9. ITTO provided reasonable assistance to members of local communities to attend meetings and forwarded all letters and documents received in the ITTO office relevant to the work of the Mission.

## II. BACKGROUND

### The controversy over tropical forests

10. Concern over what is happening in the world's tropical forests is now, without question, "high on the world's political agenda". Malaysia, for several reasons, is a particularly sensitive focus in the controversy. Firstly, it has long been indicted as an outstanding example of over-cutting, destructive logging and unrestrained deforestation. Secondly it is the target of a great deal of adverse publicity, world-wide, alleging the violation of human rights and victimization of native peoples who oppose logging because it is destructive of their traditional way of life. Thirdly, it is a prime target - as well as a leading opponent - of the moves to ban imports of tropical timber not produced from forests under sustainable management.

11. Both the Federal and the Sarawak Governments strongly resent the criticisms, the publicity and the proposals, holding them to be misrepresentation at the best, if not downright subversion. In fact, they have good reason to feel aggrieved. After all they have, they believe:-

- (a) policies in place for sustained yield timber management of those forests designated for the permanent forest estate;
- (b) policies and procedures in place for the preservation and protection of forests where the environmental and conservation values are of paramount significance and
- (c) logging concessions allocated in full concordance with the laws relating to land tenure and rights, so that obstructions, intimidation and destruction in support of the protests about logging are illegal and must be treated as such.

12. The critics - national and international - dismiss these claims out of hand. The Governments cannot, however, abandon their position without admitting, *de facto*, that they are at fault. Hence the prospects for a peaceful, rational solution to the impasse, by internal discussions and processes seem to be quite remote. The move to ban imports of tropical timber can therefore be seen as an attempt by the critics to mobilize external pressure so as to impose their view of the situation and their solution to it. If that were to succeed, even partially, it would be tantamount to a declaration by the Governments of the importing countries that they did not accept the Malaysian Government's version of the situation.

13. Since that would raise the delicate question of national sovereignty, the proposed ban is naturally not expressed in terms specifically directed at Malaysia or any other producing country. It is to apply to imports of all tropical timber except those coming from forests managed on a sustainable basis. By making the definition of sustainable management stringent enough, it is relatively simple to show that very little tropical forest falls within the favoured category. Hence it can, if desired, be interpreted as a ban on all tropical timber imports regardless of source of origin.

14. That universality, however, is theoretical at best. The ban cannot do what is claimed for it, i.e. save the world's tropical forests. For one thing, logging is such a minor direct cause of tropical deforestation that even if all logging ceased, there would only be a slight reduction in the global rate of deforestation. The other predominant

cause of tropical deforestation, namely clearing for various forms of agriculture, would continue. It is, undoubtedly, facilitated by prior logging but the rate of clearing is not strongly determined by or dependent on the rate at which logging proceeds. The driving forces lie elsewhere in the world economy.

15. But, in any case, all logging would not be stopped by a ban on imports. The ban could only affect that part of the tropical timber cut which enters the international timber trade. That part is now rather less than 50 per cent. The other half, being used directly in the home markets of the producing countries, would not be touched by a ban. The maximum possible effect would be negligible.

16. It is hard therefore to resist the conclusion that the proposed bans, for all their apparent generality, are really aimed at Malaysia. For Malaysia is one of a very small number of countries in which widely spread bans might bring about a substantial reduction in the rate of logging. With almost 80 per cent of its production exported, a fully effective ban could cut the rate of logging, in terms of volume, but not necessarily of area, back to one-fifth of its present level. Since Malaysia is not under such intense pressure from population and poverty that the clearing of forests for agriculture must proceed whether they have been logged or not, a ban might also bring an appreciable slowing of the rate of deforestation.

17. The enthusiasm of the advocates of a ban is therefore understandable; in Malaysia, if nowhere else, the banning on imports of tropical timber might bring about the purported objective of halting deforestation. Just as obvious also is the urgency with which the critics are pressing their view that the forests of Malaysia, and Sarawak in particular, are not under sustainable management. They have no choice. If the forests are under sustainable management the ban would not apply. Equally obvious therefore, is the urgency of the need for governments to have their view accepted that present management is sustainable management.

18. To some degree, the idea of a ban on imports of tropical timber is naive and misguided. The recent success in having the import of ivory banned, on paper at least, is no criterion. An escalation of the tropical forests issue into the minefield of international trade relations and diplomacy would take on a scale many orders of magnitude greater and wider than the ban on ivory. It would certainly have consequences going far beyond the tropical timber trade. Such minefields are best avoided if there is another way round. One such way, which might seem to avoid the complications of official trade restrictions, would be to have the bans instituted indirectly through consumer boycotts. Being voluntary, however, they are likely to be even less effective and universal than a ban. The effect, on a world scale, on the rate of deforestation would therefore be even less significant. Nor could it be assumed, as it may perhaps be with a ban, that Malaysia would be an exception. There are plenty of countries unlikely to participate in voluntary exclusions, to allow Malaysia to avoid the effects.

#### The role of the Mission

19. Everybody who is genuinely concerned about the conservation of the tropical forests ought therefore to welcome any alternative which offers a better chance of success. The Mission is one of the more promising possibilities, through an independent, representative, expert assessment of the status of and prospects for sustainable utilization in the forests of Sarawak.



*Assessment or adjudication?*

20. The meaning of the term "to assess" in the terms of reference of the Mission is therefore crucial. But it is also controversial. In one submission, for instance, the terms of reference have apparently been read as meaning "to investigate the impact of logging", especially on native communities. Some, also, belonging to those critical of the situation in Sarawak, appear to regard "to assess" as meaning that the Mission is expected to deliver a verdict in the case, as they see it, of the world versus Sarawak. Some holding that view seem to take it for granted that such an assessment would uphold their opinion and that any other judgement would therefore reflect a lack of impartiality on the part of the Mission. At least one such group, apparently realising that a strictly objective review is not likely to come up with an outright condemnation of the government of Sarawak has pre-judged the Mission as no more than a subterfuge to whitewash Sarawak.

21. The Mission has a great deal of empathy with the concern which has prompted these views, but it cannot accept such misreadings of its terms of reference. To assess, according to the Oxford English Dictionary is, inter alia, to "estimate the quality" of something, in this case sustainable utilization and conservation in Sarawak. There is no legitimate, logical or even semantic way in which that meaning can be turned into "to judge, to adjudicate, to arbitrate, to apportion blame" or any other form of words which would give the Mission a judicial character. That may be the way in which some interested parties feel that the Mission should have been constituted. It is not, however, the way in which it has been set up or what it has been empowered to do.

22. The Mission has therefore taken its Terms of Reference as requiring it, primarily, to estimate the quality of sustainable forest management in Sarawak. That, the Mission decided, required it to identify what is right and what is wrong with current policies and practices, to work out where and how they could be improved, and what would need to be done to put those improvements into effect. Then, further, it is required to make suggestions about a programme of international co-operation and assistance to that end.

23. The approach outlined in the previous paragraphs seems to the Mission to be entirely consistent with its Terms of Reference in a way which a judicial approach or any variant of it clearly is not. But in any case a judicial approach is also quite pointless. It is conceivable, indeed probable, that both points of view could be right. The policies for sustained yield timber management could be in place but their implementation might fall down so badly that logging operations, instead of being the harvesting and regenerating phase of management, virtually eliminate the capacity of the residual forest to sustain the planned yield. Sustained yield would thus be the policy, as the government claims, but not the practice, as the critics claim.

24. Or the policies could be in place, and field implementation consistent with them, but a sustained timber yield may not, at the same time, sustain the flow of other forest products or sustain the environmental, conservation and social and cultural values of the forests. Sustainable management would then be both the policy and the practice for timber and thus justify the governments' position but not for the non-timber values, which would confirm the critics' claims.

## *The Promotion of Sustainable Forest Management*

25. Or the present cut, coming as it does from the permanent forest estate plus a once-only cut from the forests to be converted to a non-forest land use, could be greater than the permanent forest estate alone could sustain even if managed on a sustainable basis. Sustained yield management would thus be the policy and the practice on the permanent forest estate, which would be consistent with the government's position, but not on all the presently forested land to which the critics wish to have it apply.

26. A judgement in clear favour of either view could not, therefore, be made objectively and it would be fruitless to try. In reality, diametrically opposed views cannot both be right at the same time. That they may be made to appear so, as in this situation, can only mean that the two views are based on entirely different ideas of sustainability and different criteria for judging performance. One of the first tasks therefore is to decide on several questions associated with the possible interpretations of sustainable utilization and conservation of tropical forests, their genetic resources and the maintenance of the ecological balance.

### *The place of the native peoples' question*

27. Before turning to those definitional matters, one prior and awkward difficulty has to be dealt with. This is the question of the traditional rights and claims of the native communities to and in forested land. To some of the critics this is the vital issue in the whole controversy - "the whole reason that the timber industry in Sarawak has become so controversial is because the native people have been actively resisting the logging of what they perceive as their traditional lands". Other critics, while not going as far in anchoring their concern solely to claims of traditional rights, do see them as an essential element in their opposition on conservation grounds to current policies and practices. In such circumstances, not to address this issue in a serious way would undermine the credibility of the Mission as an independent and objective body and any belief in ITTO as an instrument for the betterment of the world's tropical forests.

28. It is, in fact, the only point in the dispute on which one or other of the opposed views alone can be right. Either the native communities have rights which are being or could be violated by logging or they do not. Yet, strictly speaking, it is not, in itself, a matter for the Mission to comment on, let alone pass judgement. More significantly, neither is it a matter for the ITTC under whose authority the Mission is established. There is no way in which the International Tropical Timber Agreement can be interpreted as extending into such areas. In other words, it can be argued, with some justification, that this is none of the Mission's business. The rights and wrongs of the traditional rights issue are matters for determination in the courts of Malaysia. The Mission is neither qualified nor empowered to judge on such matters.

29. Nevertheless the Mission does not unreservedly accept that the question is none of its business. In the light of the clear responsibility which the International Tropical Timber Agreement places on ITTO in the conservation and management of the tropical forests and the Mission's task to assess "the sustainable utilization of tropical forests . . . in Sarawak", there is a sense in which it could be very much its business. This is if the extent, nature and location of these rights or claims and how, when and where they are exercised affect either or both the area and productivity of the forests, then the attitudes of native communities are relevant to any assessment of sustainable levels and the quality of performance. That aspect cannot be avoided, ignored or passed off as the responsibility of somebody else. If it arises in this form the Mission must deal with it.

30. The simple expedient would be to withdraw the areas in question from timber harvesting operations and planning, at least until the legal position is sorted out

definitively. There would be a reduction in the long term timber flow and that would, in turn, necessitate recalculation, relocation and reallocation of concession areas. Some difficulties with logistics, contract renegotiation and compensation would, no doubt, arise but they could hardly be taken as being insuperable. They may, of course, take some time to overcome and that would necessitate some transitional arrangements. But the claimants and their supporters would get what they claim is theirs, while the cost in long term sustainable timber output would not be all that great.

31. Although the information available to the Mission is somewhat approximate it appears that such reservations would total about 0.5 million hectares. The implicit reduction of around 15 per cent in the long term timber flow is probably well within the statistical confidence limits of the estimate of that flow and could not, by any standards, be regarded as catastrophic.

32. This simple expedient would therefore be unlikely to have serious consequences for sustainable timber utilization, other than perhaps over a relatively short transitional period. On the other hand, it would greatly enhance the prospects for sustainability of certain social values and for those non-timber ecological values which are not at risk under shifting cultivation. At the same time it would remove the issue of traditional claims as a plausible rallying cry in the debate. On those grounds it can hardly be faulted, except for the implication that the government would be seen to be compromising its authority and sovereignty under duress. That, however, does not necessarily follow at all. After all, both the constitution and the forest policy guarantee traditional rights.

33. If this course were to be followed, there would obviously be some reduction in the sustainable yield of timber. Whether the reduction were temporary or permanent, the Mission would have, at least, to consider its effect on "sustainable utilization". The question of the native community rights themselves would not, however, arise. Even if the simple expedient is not adopted, then a continuation of the present situation, at least for some time, will still have to be taken into account. This does not mean that the Mission would therefore have to take sides in the issue or judge on it. But, for the purpose of making proposals for the improvement of the quality of sustainable management it would certainly need to consider possible remedies. And that may take it into an examination of causes.

#### The meaning of sustainability

34. Having decided what is involved in "to assess", the main focus of the work of the Mission was, then, on the "sustainability" of the forest resource in Sarawak. This was taken to mean the attainment and maintenance of a forest estate yielding a continuing and non-declining flow of benefits and products at levels of each considered best by the people of Sarawak and at levels which can be supported or even increased in the future. When policies and practices for forest management are formulated, full account has therefore to be taken of the potential for increasing the yield of each individual benefit or product and this potential should be preserved as far as possible.

35. The Mission, therefore, taking into account the discussions in previous ITTO studies, found that it had to examine separately a number of aspects of sustainability which together add up to a comprehensive interpretation of sustainability within the Terms of Reference. These separate aspects are:

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- (1) The capacity of the forests of Sarawak to provide and maintain a supply of timber in the medium and long term both for domestic use and for export;
- (2) Forest management for this sustainable timber supply;
- (3) The maintenance of soil and water quality;
- (4) The maintenance of biological diversity in the forests of Sarawak;
- (5) The continuing economic viability of forestry and the forest industry;

### Multiple use and compatibilities

36. This approach of treating each set of products and services separately could, at first sight, be taken as contradictory to the findings of the earlier ITTO pre-project study by the Harvard Institute for International Development, in which multiple use forest management was found to be both desirable and feasible for tropical forests. And up to a point it is. Management for products which cannot be harvested without felling some of the forest and removing the felled timber cannot take place in the same piece of forest which must be left undisturbed for it to provide the services required of it. The requirement to provide, simultaneously, products and services which are mutually exclusive can only be met from separate areas. Multiple use management in those cases can only be carried out through single use management of separate areas within a broad territorial unit of forest.

37. The conservation of the complete biological diversity of an area of forest, for example, is only possible if this forest is left undisturbed. Diversity may be partially preserved in forest managed for timber production; but it is totally lost if the area is converted, for example to oil palm. A national policy for the conservation of biological diversity should, therefore, contain two main elements: a comprehensive network of protected areas (the Totally Protected Areas - TPA - of Sarawak legislation); and certain measures to protect reasonable populations of plants and animals outside those protected areas. The preservation of the quality of soil and water, on the other hand, may require forest to be reserved and protected specially for this purpose, especially in steep or erodible localities. In less sensitive places it may be possible to maintain the quality of soil and water while extracting timber, provided that various environmental precautions are taken. Tree plantations may also be an acceptable form of land use for soil and water conservation, provided that the conversion is well carried out and there is appropriate management.

38. Two kinds of measures are, therefore, required if all the products and properties listed above are to be sustained: measures concerned, on the one hand, with land use allocation and measures, on the other hand, to manage land for a combination of purposes which are compatible with one another (see Table 2.1 for an assessment of compatibilities).

### *Timber production and the sustainability of other values*

39. We recognize that sustainable forest management for timber production is only possible on the basis of a properly constituted and safeguarded permanent forest estate primarily designated for the production of timber. Similarly the conservation of other values may require the reservation of certain areas specifically for these purposes. But, with careful timber extraction and suitable management, it should be possible for logged forest to continue to provide a number of the other forest goods and services. We have taken this into account in our discussion of the issues.

The task of the Mission summarized

40. From the earlier discussions, it is easy to see, not just that opposing views of sustainability and the performance of sustainable management can be right, but also that whether they are seen to be right or not depends on the level or stage of forest administration at which the assessment is taken. This means that each group of products and services has to be assessed separately and at three levels. The first level is that of policy; the second that of the measures through which the policy is supposed to be achieved (in short, the strategy) and the third that of the implementation of the policy and strategy in the field. Then and only then will it be feasible for the Mission to carry out the task assigned to it. That, in summary, is to:-

- (1) see what, if anything, is wrong with the policy, the strategy, or their implementation, in respect of the range of services, values, products and desired conditions, individually or collectively;
- (2) show why it is wrong, and thus be in a position to:
- (3) recommend what improvements are needed and possible and how to put them into effect and
- (4) propose a programme of local and international co-operation and assistance to that end.

TABLE 2.1

THE COMPATIBILITY OF DIFFERENT FOREST MANAGEMENT OBJECTIVES

(arbitrary scale, 0-10: 0=incompatible, 10=perfectly compatible)

SECONDARY YIELDS	PRIMARY FOREST MANAGEMENT OBJECTIVE					
	Biodiversity	Erosion control	Recreation <sup>1</sup>	Human subsistence <sup>2</sup>	Commercial timber <sup>3</sup>	Other products <sup>4</sup>
Biodiversity	-	10	8	0	5	7
Erosion control	10	-	9	1	4	10
Recreation	2	3	-	0	2	10
Human subsistence	0	0	3	-	1	10
Commercial timber	0	4	2	1	-	8
Other products	0	9	7	8	2	-

- 1 No mass concentrations; carefully planned
- 2 Hunting and gathering, and controlled shifting cultivation
- 3 Selective harvesting only, impacts minimized, natural rather than plantations
- 4 Controlled removals, abundant products only



### III. FORESTRY IN SARAWAK

#### The Constitutional position

41. The following paragraphs draw extensively on the texts of the forest legislation and on "Forestry in Sarawak, Malaysia", a briefing document produced by the Forest Department for the information of the Mission.

42. In the Constitution of Malaysia, the legislative and executive authority over forest is a State responsibility. The role of the Federal Government is mainly confined to research and development, maintenance of experimental and demonstration centres, education and training, forest industries development, and technical assistance to the States in terms of overall forestry development and management.

43. The National Forestry Council (NFC) under the National Land Council (NLC) facilitates the adoption of a coordinated and common approach to forestry, proper and effective forest management and rational utilization of forest resources, consistent with the need to maintain the forest as a long term renewable resource and for protective and amenity purposes.

44. The NLC is empowered under the Constitution to formulate a National Policy for the promotion and control of utilization of land for mining, agriculture and forestry. The responsibility for implementing the decisions of the NFC is with the State Governments, unless it concerns matters which are under the authority of the Federal Government.

#### The Sarawak Land Code

45. As noted (paragraphs 27-33), dispute over native customary claims to land rights has been a major cause of the internal and international tensions that relate to logging in Sarawak. In order to assess the sustainability of current forestry practices in the State, it is essential to understand clearly the background and present operation of the relevant laws and regulations. There is continuity in the law of Sarawak through the Brooke regime and the subsequent period of British administration, to modern Malaysia. A history of successive land laws was provided for the Mission by the Land and Survey Department. An independent published account is found in the book, "Natives of Sarawak: survival in Borneo's vanishing forests", by E. Hong (1987, Ch. 4).

46. The traditional farming method followed by the majority of the settled inhabitants of interior of Sarawak is shifting cultivation, sometimes known as slash-and-burn or swidden farming, for an annual crop of hill rice. Following this practice, the chief way in which customary land rights were acquired traditionally was by the felling of virgin jungle and the subsequent occupation of the land thereby cleared. Recognized rights might also be obtained by other actions, including the planting of fruit trees and use for funereal purposes. These rights were backed by native customary law, differing only in minor detail from one community to another.

47. The earliest legislation of the first Rajah Brooke (Land Regulations, 1863) gave his government ownership of "all unoccupied and waste lands" (which could thenceforth be leased or sold) but was not intended to affect land already occupied by any native of Sarawak. However, the need for amendments in 1871 and 1875, giving certain rights to

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"squatters", suggests that even the comparatively simple 1863 regulations did not fully accord with the practices of customary tenure.

48. The first comprehensive legislation was introduced in 1920 (Land Order no. VIII), but was later repealed and replaced by the 1931 Land Order, which recognized Native Areas, to be inhabited only by the indigenous races of Sarawak, and Mixed Zones in which the Chinese and others could hold rights. The subsequent Land Settlement Order (1933) provided for boundaries to be drawn around longhouses within which members of the community in question would have exclusive rights to establish customary tenure, and for the appointment of village councils charged with the task of resolving disputes over customary tenure. This Order, in turn, was followed by a Secretariat Circular on land tenure, no. 12/1939 (quoted by Hong, and kindly provided for the Mission by Sahabat Alam Malaysia - SAM). Appended to the 1939 Circular was the Senior Forest Officer's memorandum, illuminating the perceived conflict between shifting cultivation and forestry, and proposing a tripartite land use classification, into Protective Forest, Productive Forest and Agricultural Land. Together, these documents reflect efforts at the time to regulate shifting cultivation and to resolve land disputes within and between communities, especially those arising from internal migrations.

49. After Cession (1946) the incoming colonial administration consolidated the law, in 1948 enacting the Land (Classification) Ordinance which recognized five categories: Mixed Zone Land, Native Area Land, Native Customary Land, Reserved Land and Interior Area Land. Subsequent measures were introduced in 1954, whereby no rights could be created by occupying Mixed Zone or Native Area Land, and in April 1955, whereby new rights within Interior Land could only be created under a permit issued by the District Officer in whose district the land was situated. In 1957, further legislative steps were taken to consolidate and update the laws relating to land.

50. The legal framework within which alternative, often competing uses of land are now regulated in Sarawak is therefore the Land Code Ordinance of 1958 (Sarawak Cap. 81). From the Land and Survey Department, the Mission received a copy of the Land Code incorporating all amendments and modifications up to 6th December, 1988. This text is taken to be a correct version for the purpose of this report.

51. The Land Code retains the five land classifications of its 1948 predecessor. Its provisions refer mainly to non-forested land. This can be either Titled or Non-Titled. Titled land poses no problems. The Non-Titled can be land held under Native Customary Rights or Native Communal Reserve.

52. The accepted means by which Native Customary Rights (NCR) may be acquired are set out in section 5 (2), but the 1955 regulation (above, para. 49) is formalized by section 5 (1) as follows:

"As from the 1st day of January, 1958, native customary rights may be created in accordance with the native customary law of the community or communities concerned by any of the methods specified in subsection (2), if a permit is obtained under section 10, upon Interior Area Land. Save as aforesaid, but without prejudice to the provisions hereinafter contained in respect of Native Communal Reserves and rights of way, no recognition shall be given to any native customary rights over any land in Sarawak created after the 1st day of January, 1958, and if the land is State land any person in occupation thereof shall be deemed to be in unlawful occupation of State land . . . ."



53. Section 10 in subsection (4) specifies that:

"The occupation of Interior Area Land by a native or native community without a permit in writing from a District Officer shall not, notwithstanding any law or custom to the contrary, confer any right or privilege on such native or native community and, in any case, such native or native community shall be deemed to be in unlawful occupation of State Land . . ."

54. Provisions are made for the registration of NCR land under rights obtained before 1958 or, in the case of felled forest only, if registered between 1958 and 1972 under section 10 of the Land Code. Until a document in title has been issued, such land continues to be State land, but any native lawfully in occupation of it is deemed to hold by licence and is not required to pay a rent. Occupation of Interior Area land which was not felled for cultivation (or otherwise legally occupied) before 1st January 1958 is therefore illegal under the Land Code. The area concerned throughout Sarawak is far too extensive to survey. Survey is therefore only undertaken when there is a request for title. NCR may then become titled land.

55. Rights to land may also be obtained by natives through Native Communal Reserve. Native Communal Reserves are gazetted; they are held under joint ownership by the village community but can be converted into land with individual titles in perpetuity after detailed survey.

56. The position is summarized below:

Forest
Non-forest
Titled
Non-Titled
* Land with Native Customary Rights
** 'Held', if registered by 1958; or, if felled forest, between 1958 and 1972, under Section 10 of the Land Code
** If not felled, the land cannot be legally 'held'.
* Native Communal Reserve - gazetted - can be converted into Titled Land

#### The Sarawak Forest Policy

57. The Forest Policy of Sarawak was formulated and adopted in 1954. The general statement of policy reads as follows:

"(1) To reserve permanently for the benefit of the present and future inhabitants of the country, forest land sufficient

(a) for the assurance of the sound climatic and physical condition of the country; the safeguarding of soil fertility and of supplies of water for domestic and industrial use, irrigation and general agricultural purposes; and the prevention of damage by flooding and erosion to rivers and to agricultural land;

(b) for the supply in perpetuity and at moderate prices of all forms of forest produce that can be economically produced within the country, and that are required by the people for agricultural, domestic and industrial purposes under a fully developed national economy.

- (2) To manage the productive forests of the Permanent Forest Estate with the object of obtaining the highest possible revenue compatible with the principle of sustained yield and with the primary objects set above.
- (3) To promote, as far as may be practicable, the thorough and economical utilization of forest products on land not included in the Permanent Forest Estate, prior to the alienation of such land.
- (4) To foster, as far as may be compatible with the prior claims of local demands, a profitable export trade in forest produce.

58. Forestry in Sarawak is the responsibility of the Forest Department while the Sarawak Timber Industry Development Corporation (STIDC) is responsible for forest industries.

#### Forest legislation

59. Forestry in Sarawak is conducted under three Ordinances: the Forests Ordinance (Sarawak Cap. 126), 1954, the National Parks Ordinance (Sarawak Cap. 127), 1956, and the Wild Life Protection Ordinance (Sarawak Cap. 128), 1958. The responsibility for implementing all three Ordinances lies with the Forest Department.

60. The *Forest Ordinance* provides for the protection and management of forests dedicated to production (the Permanent Forests) and for regulating the taking of forest produce. This forest is classified as Reserved Forest under the Land (Classification) Ordinance, 1948 and is divided into three types: Forest Reserves, Protected Forests and Communal Forests.

61. These are described in the Forest Policy as follows:

- "(1) *Forest Reserves.* Permanent Forests are to be constituted as Forest Reserves wherever the strictest form of control is necessary for the realisation of sections (1) and (2) of the general statement of policy. They will normally be productive forests, destined to be the principal permanent sources of the country's supplies of timber and other forest produce; and forests that are rich in trees of particular value, such as belian, should, except in very exceptional circumstances, be constituted as Forest Reserves. Forest Reserves should also be constituted where the protection of water-works catchment areas is required, where the surrounding population is so dense that the admission of the general rights and privileges recognised in Protected Forests would prohibit the successful management of the forest; and, in some circumstances (see Communal Forests), where the forest is required as a source of domestic supplies for a specified community.

- (2) **Protected Forests.** In Protected Forests the Forest Law admits wide rights to the people of Sarawak to take forest produce for their own domestic use, to hunt and to fish, and to pasture cattle. A Permanent Forest may be constituted as a Protected Forest if the primary purpose of constitution is the general protection of soils and waters, and the terrain or vegetation is of such a nature that intensive management as an important productive forest is unlikely to be practicable; or if an extensive Permanent Forest is constituted in little-known territory, where the correct use of all the land cannot yet be determined.
- (3) **Communal Forests.** A Communal Forest will be constituted only where it is clearly the desire of a settled community to set aside a convenient area of woodland to provide its domestic needs of forest produce. Such forests shall be under the control of the Administration, who shall, however, consult the Forest Department on all important technical matters. Communal Forests will normally be large enough only to supply permanently the domestic needs of the community specified, allowing for a reasonable increase in population; but exceptions may be made when the necessity of preserving forests for protective reasons is combined with the need for domestic supplies of forest produce."

62. In all three, pre-existing rights may be admitted or privileges conceded at the time of gazettal. Forest Reserves have greater safeguards than the other two, in that Section 65(1) of the Forest Ordinance states that (subject to certain exceptions) 'any inhabitant of Sarawak may, without licence or permit, cut and remove from State land which is not a forest reserve any timber or other forest produce required by him exclusively for his own domestic use and not for sale, barter or profit.'

63. Communal Forest is 'set aside for the sole use of the community, by whom it shall be maintained and controlled'; and the community shall 'undertake to maintain the communal forest in a condition of sustained yield'.

64. The National Parks Ordinance provides for the constitution, maintenance and control of National Parks (NPs), and the Wild Life Protection Ordinance for the establishment of Wild Life Sanctuaries (WSs). The essential difference between these two is that the former are intended to be visited by the public whereas the latter are not. Within the bounds of NPs and WSs, with a few specified exceptions to protect existing rights, permitted to continue after the gazettment of particular protected areas (NP or WS), all inhabitants of Sarawak are prohibited from taking any form of forest produce and from hunting and fishing, as are foreign visitors, unless permission is obtained for specific purposes, e.g. scientific research.

65. At present, Section 12 of the Wild Life Protection Ordinance stipulates that: 'A Wild Life Sanctuary may include the whole or any part of a Forest Reserve or a Protected Forest, in which case nothing herein contained shall prohibit or restrict the management of the Forest Reserve or Protected Forest'. But, according to a Bill to amend the Ordinance at present before the State Assembly this clause (which gives priority to production of forest produce) is due to be revised, as follows: 'A Wild Life Sanctuary may include the whole or any part of a forest reserve or protected forest, or any other area of State land, and its status as a Wild Life Sanctuary shall over-ride and replace any other status which an area of land may have had before being constituted as

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a Wild Life Sanctuary'. The Wild Life Ordinance, in addition, contains general provisions for the protection of wild animals.

66. For administrative purposes two terms are used: Permanent Forest Estate (PFE) with reference to Forest Reserves, Protected Forests and communal forests and Totally Protected Areas (TPA) with reference to National Parks and Wildlife Sanctuaries, neither term is defined in legislation.

67. Outside the Permanent Forest Estate are the forests on State land. In these the Forest Department has no legal jurisdiction on the use of the land after the timber is removed. All however are subject to license to extract and all have management plans; these, however, may be different in their prescriptions from those for PFE.

68. The various categories of forest defined under these Ordinances and the Land Code may therefore be grouped as follows for legal status and use; but with Wild Life Sanctuaries overlapping, to some degree, with Forest Reserves and Protected Forests:

Permanent Forest Estate  
Forest Reserves  
Protected Forests  
Communal Forests  
Totally Protected Areas  
Wild Life Sanctuaries  
National Parks

### Forestry strategies

69. To give effect to the Policy statement, the State Forest Department has adopted the following strategies for forest conservation, management and development:

- (1) To enlarge the Permanent Forest Estate to cover forest land not required for other forms of land development.
- (2) To manage and utilize the forest resource for common benefits based on the inherent capability of the forest at its optimal use.
- (3) To harvest the forest resource conservationally by selective felling in an orderly manner with minimum damage to the residual stand and the environment so as to ensure the sustainability of the forest resource base.
- (4) To continuously refine the prescriptions of the forest management plans through in-depth appraisals of the forest resource, applied research in silviculture, ecology and forest operations.
- (5) To establish new National Parks and Wild Life Sanctuaries and undertake detailed resource inventories of established National Parks and Wild Life Sanctuaries.
- (6) To enhance the tourism potential of National Parks through the formulation and implementation of management plans, and the development of infrastructure and recreational facilities.
- (7) To conduct long-term research on protected wildlife species, conservation management of hunted species and habitat management.
- (8) To conduct research on technological processes and utilization characteristics of timber in order to improve utilization standards, investment potential and create more employment opportunities.

### Other legislation

70. The Environmental Quality (On Prescribed Activities) (Environmental Impact Assessment) Order, 1987 (a Federal instrument) requires that EIAs should be conducted before undertaking certain forestry operations including logging covering an area of 500 ha or more. This Order is not being applied in Sarawak at present.

### Forest Management Plans

71. Each forest concession area (also known as "forest management unit"), whether in the PFE or State land forests, has a Forest Management Plan. The Plan contains a description of the area, the objectives of management or prescriptions on how the forest management unit is to be harvested, the species to be removed, the minimum cutting diameter limits, the annual allowable harvest, penalties for harvesting damages etc. It also states the relative responsibilities of the concession holder and the various branches of the Forest Department. The Forest Management Plan for a State land Forest which is likely to become part of the PFE has similar prescriptions to that of established PFE.

72. Since 1983 the Forest Management Plan of each long-term hill forest concession has also incorporated an Engineering Plan. It is stated that "the implementation of the Forest Engineering Plan is to ensure that harvesting operations are well-planned and carefully conducted so that efficiency is increased and damages to the residual stands and the environment are minimised."

### Research

73. There has been active research in the Forest Department since the 1950s, leading to a very substantial volume of results, especially in silviculture and applied forest management. Other fields covered are: the survey and monitoring of forest resources; reforestation and rehabilitation; watershed management and hydrology; forest pathology; forest products; and national parks and wildlife management.

### Forestry education and training

74. Higher education in forestry is mainly conducted outside Sarawak, but a branch campus of the Universiti Pertanian Malaysia in Bintulu offers a three year diploma course in forestry. There is a Forestry Training School at Semengoh for the training of forest guards, which also offers in-service courses for Forest Officers. The Timber Research and Technical Training Centre gives industrial training. Training is also provided by the STIDC (see below) at its centre in Bintulu.

### The organization and development of the forest industry sector

#### *Sarawak Timber Industry Development Corporation*

75. The Sarawak Timber Industry development Corporation (STIDC) is a statutory organization set up by Ordinance in 1973, answerable to the Ministry of Resource Planning. Its objectives are:

- "(1) To develop new policies, plans and strategies towards more active promotion of the timber industry and the marketing of high quality timber-based products suitable for both overseas and domestic markets;

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- (2) To develop economical and beneficial harvesting and utilization of the forest resources of Sarawak;
- (3) To create new concepts and strategies in the timber industry so as to ensure that the benefits from the harvesting of the State's forest resources will be fairly and equitably shared among the peoples of the State and the Nation; and
- (4) To enable the State Government to have an instrument for the formulation, coordination and implementation of the overall timber industries development strategies and to act as a catalyst with private sector interests through the encouragement of new industries."

77. To accomplish these objectives, STIDC: controls and coordinates manufacturing standards and trade practices; makes recommendations to Government on ways of improving timber industries; encourages effective utilization by diversification of products and quality control; promotes and facilitates the development of the timber industry; provides technical advisory services, and: provides training in aspects of logging, timber processing, sawmilling, and the sale and marketing of timber.

### *The Sarawak Timber Association*

78. The Sarawak Timber Association (STA) is an umbrella trade association covering all timber trade associations in Sarawak. It contains at present about 400 member companies. Membership is compulsory by law. Members are divided into eight categories: log marketing; hill logging; swamp logging; sawmilling; sawntimber marketing; plywood; moulding and furniture; and other timber business/operation. The STA works with State authorities towards setting up more timber processing industries; and representatives of STA sit on the Log Export Restriction Quota Committee.

### *Diversification in the external market*

79. The development of forest industries is now directed towards: efficient forest harvesting and utilization; diversification in the timber-based industries; promotion of the export of more value-added forest products; the satisfaction of domestic requirements; and the encouragement of the wider use of under-utilized species and the development of new forms of timber processing industries.

80. In order to promote these objectives, the State Government offers incentives to invest in downstream processing. These incentives include a rebate of 80 per cent on the royalty of logs processed in the State, the availability of relatively cheap industrial land and a cheaper land premium. In addition there are a number of incentives under the Promotion of Investments Act, 1986.

81. At present 10 per cent of logs are reserved for local processing. This is being increased to 15 per cent this year (1990) and there is a projected target of 50 per cent for 2000.

*Revenue and cesses*

82. Rates of royalty vary according to species groups from M\$50 per cubic metre in the round for hill species of meranti (*Shorea* spp.) to M\$12 for miscellaneous swamp species. In addition various forms of premium are levied on certain species: Timber Premium M\$1.50-2.90 per cu m; Forest Development Premium on all swamp species, M\$1.50; Timber Development Premium; and Sarawak Foundation Premium of M\$0.80 on all hill species.

83. The Forest Concession Area (Rehabilitation and Development) Cess amounts to M\$0.60 on all species. This last is directed towards improving "the economic and social well-being of the community residing within or adjacent to a timber logging area, the exploitation of which has affected the ecology of that area and the rights and privileges of that community living in that area."

*Return of revenue to forestry*

84. The following are indicative figures for the return of revenue to forestry in 1988. The revenue derived was M\$491.3 million, of which M\$33.3 million was returned to the Forestry Department as annual recurrent expenditure and development expenditure. The revenue foregone by the State Government through the 80 per cent rebate on royalty was M\$20 million reflecting the 1.4 million cu m processed locally in that year.

Forestry in the economic development of Sarawak

85. The development objectives for Sarawak in the Sixth Malaysia Plan are as follows:

- (1) To restructure and strengthen the State economy for sustained growth. Specifically the Sixth Malaysia Plan aims at an overall growth of between 6 and 7 per cent in real terms per annum.
- (2) To raise the income and quality of life of all households.
- (3) To reduce the incidence of poverty to 18-20 per cent by 1995 and the socio-economic disparity across regional and ethnic boundaries.
- (4) To reduce the level of unemployment to about 7 per cent by 1995 and attain full employment by the end of the century.
- (5) To expand and improve physical infrastructure and basic amenities as stimuli to economic growth as well as provide access, particularly to the rural population.
- (6) To incorporate and enhance the principle of sustainable development in the planning process.

86. The Strategies in the Plan which have particular relevance to sustainable forest management are these:

- (1) To facilitate industrial development especially the downstream processing of the State's natural resources particularly . . . timber . . . through the provision of industrial infrastructure, investment incentives and the relevant institutional supports.
- (2) To open up more land for commercial agriculture for both public investment and private sector participation.

## *The Promotion of Sustainable Forest Management*

- (3) To promote the orderly development of the tourism sector in the State through the provision of better tourism facilities and attractions.
- (4) To facilitate private sector participation in the economy and increase bumiputra active involvement in commerce and industry through provision of training and credit facilities.
- (5) To provide appropriate manpower training, especially to school leavers, and at the same time facilitate their entry and participation in relevant sectors of the economy.
- (6) To complete the identification of poor households and develop special programmes to improve their socio-economic well-being.
- (8) To provide and improve social services and facilities to all segments of the population, especially poor households which have no access to such basic services and facilities.
- (9) To provide and improve roads and other modes of transport to areas of economic potential and settlements.
- (10) To encourage and facilitate the regrouping of small isolated villages and longhouses into bigger settlements.
- (11) To encourage and facilitate the participation of local people in the development of their communities and instil in them the spirit of self-reliance so that they become less dependent on public assistance.
- (12) To incorporate environomic considerations into project planning and implementation for sustainable development.

87. Both the objectives and the strategies of the Plan are relevant to forestry, particularly in the emphasis they place on the opening up the land for commercial agriculture, the development of industry, the reduction of poverty and unemployment, the participation of local people, training in the overall context of sustainable development and care for the environment.

88. Many sources (for example, the Federal Economic Planning Unit, the State Planning Unit, the Sarawak Forest Department, STIDC and the Sarawak Timber Association) stress the significance of forests and forestry to the economy of the State. In February, 1989, addressing the MTIB Marketing Seminar in Kuala Lumpur on the subject of Sarawak's forest management and conservation programme for the 1990s, the Director of Forests said:

"The Forest and Forestry Industry Sector is a very important component in the economy of the State of Sarawak. Accounting for approximately 2.1 billion Ringgit in 1987, it ranked second only to the Petroleum Industry Sector as a major contributor to the export of goods from the State. With a strong 'multiplier' effect, this sector is responsible for approximately 165,000 jobs out of a total paid workforce of about half a million in the State.

"The State Government also derived approximately 53 per cent (480 million ringgit) of its total revenue in 1987 from the sector".

89. Policies for the long-term protection and sustainable management of the forest resource are therefore of the greatest importance for the social and economic development of the State.



#### IV. COLLECTION AND EVALUATION OF INFORMATION

##### The assessment of sustainability

90. The working methods of the Mission have been described in Chapter I (paras 5-9), and some of the general considerations which governed its work in Chapter II. In order to plan and organize its assessment, the Mission had to find the answer to a number of critical questions, which were organized round the separate aspects of sustainability discussed in Chapter II:

- (1) for timber production;
- (2) for catchment management;
- (3) for biological diversity; and
- (4) for the economic sustainability of natural forest management and the industries relying on it.

91. Any social aspects, which affect the prospects for sustainable management, were taken into account in relation to each of these.

92. For each of these aspects of sustainability, we have made an assessment of the validity of present policies and the extent to which these are translated into appropriate and effective strategies for action. But both policies and strategies are only as good as their implementation. We have therefore given considerable attention to assessing effectiveness in the field: both the appropriateness of the prescriptions for action and the way in which these prescriptions are applied in practice. Our findings are given in Chapters V to VIII and a general assessment in Chapter IX.

93. The kinds of questions which we set ourselves drew on those used in the ITTO Pre-project "The Management of Natural Forest for Sustainable Timber Production":

- What total area of forest is considered sufficient to meet the objectives set in paragraphs (1) (a) and (1) (b) of the Forest Policy?
- How is this amount decided: (a) for production forest; (b) for the protection of catchment areas and fragile soils; (c) for the conservation of biological diversity; (d) for the requirements of local communities?
- Is there a satisfactory system for choosing areas of forest for these four purposes?
- What pressures are there from other sectors or interests to remove productive forest from use?
- Are the policies and strategies adequate to produce a smooth and continuous supply of timber for domestic industries?
- In what ways do the various people who have an interest in or are affected by the management of the forest benefit from this management or suffer from mismanagement (people dwelling in or near the forest, loggers, wood processors, small industries, consumers, the Forest Department and general revenue)? Are the benefits adequate to provide an incentive to good management?

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- Does the native communities issue affect sustainability, and how?
- Are concessionaires and operators chosen in a way which takes into account the best long-term interest of the forest?
- Are the objectives of management conducive to sustainable production/conservation? Are the management prescriptions appropriate for the particular forest type? Are they rigorously applied and reviewed?
- Is the planning for timber harvesting adequate and appropriate with respect to yield regulation, the choice and marking of trees for felling, the analysis of trees to remain unfelled, the existing regeneration, environmental conditions and the routing of extraction roads?
- Do the conditions of harvesting bring reasonable benefits to the various parties concerned: government revenues, any reforestation fund, the logging companies, contractors, labour, local communities?
- Are there guidelines covering the various phases of road construction, harvesting and post-harvest survey and treatment?
- Does local processing improve the prospects for sustainability?
- Is research designed to support sustainable management for timber production/conservation?
- Are there enough trained staff? Are they effectively deployed and adequately supported? Are sufficient being trained at all levels with qualifications in the skills needed for forest management, harvesting and conservation, and in the timber industries?

94. The task of finding the answers would have been almost impossible but for the whole-hearted manner in which the Government fulfilled the commitments in Clause 3 of Resolution I (VI). The coordination of the complex logistics was superb, especially as the Mission took full advantage of the Government's readiness to allow it to visit any part of Sarawak, to meet any person and to supply the information requested.

### Sources of information

95. The Mission has drawn information from a wide range of sources: briefings from the Forest Department and other official sources, written and verbal submissions, public dialogues, discussions and interviews, and scientific, professional and other publications on the subject. Mission members, to the greatest extent possible in the time available, have checked these sources and extended their own experience by observations made in the field.

96. In the face of conflicting views on the issues involved, the Mission has had to make estimates and form judgements about the validity of the opinions which have been presented. We are confident that we have explored a full range of views and that those who have spoken to us in public dialogues and privately are truly representative of the various shades of interest and public opinion. Working in this manner, we believe that we have been able to come to an objective, independent and accurate assessment.

The matrix

97. Mission findings are summarized in Chapter IX in a matrix which provides an assessment, for each of the aspects of sustainability identified above, of the quality of the policies and strategies, and the effectiveness of the prescriptions and their application.

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## V. FINDINGS: SUSTAINABILITY OF TIMBER YIELD

### Introduction

98. The future of sustainable forestry for timber production rests upon two foundations: the area available in perpetuity within the State for timber production (the Permanent Forest Estate) and the expected yield from this area. In the first part of this Chapter we will use the best information available to us to attempt to define the limits of sustainable yield which may be obtained under various conditions. We will then look at some of the other factors which influence the growth and harvesting of timber.

### *Definitions*

99. The term "timber" as used in this chapter, refers to wood and wood products in all forms, from fuelwood to the most highly specialized face veneers, useful in either local or export markets, or both.

100. The term "yield" refers to such timber as may be extractable economically for human use and enjoyment, relative to forest area and time.

101. The term "sustainability" of yield refers to a level that may be attained perpetually. The sustained yield of many important values other than timber may be impaired by unrestrained production of timber. As discussed in Chapter II, sustainable timber yield must, therefore, be consistent with the sustainment of a prescribed mix of other forest values. The full sustainable timber yield need not be harvested, should it not all prove marketable at any time. But, since the continuous removal of mature trees that it calls for is also the source of release of immature trees, any reduction in the harvesting rate will also slow their growth and therefore reduce future yields temporarily. It may be permissible to exceed sustainable timber yield levels for a time to salvage damaged forests or for other purposes, but this must eventually be compensated by subsequent cutting of less than the sustainable level.

### *Timber harvesting: a source of sustainable yield*

102. Sustainable timber yields depend on the potential for timber increment rather than the standing timber volume. The existing trees in forests allocated for timber production thus make no lasting contribution to the sustainable level of timber yield. Those trees that are mature are, in an economic sense, idle capital, past their prime in value accretion and increasingly subject to death. Thus, the sooner such mature trees can be harvested the more likely is the realization of their value.

103. Early utilization of the mature standing timber in areas assigned for timber production is desirable for another important reason. Net timber productivity is essentially zero in primary forests where tree growth is offset by tree mortality. Future yield, therefore, calls for the removal of mature and overmature trees to liberate young trees capable of net increment. The sooner this process can be completed the sooner will timber productivity rise toward the sustainable potential.

104. The chief sources of the current timber harvest in Sarawak are primary forests. With their gradual replacement by residual cutover forests, the latter will become the source of future timber. Some are already adequately restored for a second harvest. The future sustainable timber yield will be limited by the rate of increment attainable in such cutover forests.

*Changing timber: changing needs*

105. The extraction of the most marketable trees from primary forests raises another aspect of sustainability. For timber yield to be sustainable, must the trees produced be of the same dimension as those in these old forests? Since these trees appear to be several hundred years old, their replacement would be at an extremely low rate of yield. In contrast, timber yield produced by the immature trees left in residual forests could much sooner produce an equal volume with possibly less than commensurate loss in value, and thus a higher sustainable yield.

106. A further aspect of timber sustainability is that of tree species composition. Now, and in the future, timber of some tree species is and will be more marketable and more valuable than that of others because of differences in their woods. This degree of marketability, not only within a group of timbers but also between different groups, fluctuates widely, even at present. Future trends can be expected to produce further, largely unpredictable, changes in the marketability of the products of different trees. Probably the least uncertain prediction is that, if human demand for timber increases with population, with social and economic development, and with a trend toward renewable resources, the demand for wood of many tree species, including some not now marketed, will rise. Whereas this trend may not reduce the superiority of some of the woods now preferred, it could add to the yield of some presently little-used timbers. If such were to occur should not the yield of these new species be substituted as a measure of sustainability? If management continues to favour those timbers that become currently most valued, this must be so.

*The need for stable yields*

107. Harvesting of the mature timber of the production forests of Sarawak as rapidly as it is practical would blatantly disregard sustainability, in that it would establish levels of outturn far above what could be sustained once this accumulated backlog of mature timber was gone. For sustainable utilization, the rate of conversion from static primary forests to productive secondary forests must, therefore, be constrained by a need for the rate of flow of timber into the market to be made uniform over time, favouring continuity in the logging and timber processing industries and the resultant employment, government revenues, and timber exports. Timber harvesting might ideally progress at about the same rate as that of timber increment in the cutover forests. Timber quality could be sustained by silviculture in the meantime to accelerate attainment of maturity by the best trees in the residual stands and timely appearance beneath them of regeneration adequate for later timber crops.

*The potential of timber plantations*

108. There is a further possible source of sustainable yields of timber in Sarawak - from the planting of timber trees on deforested and unstocked forest lands. For certain timber products, forest plantations have shown a potential for higher volume productivity than natural forests, although the types of wood produced, commonly more useful for their fibre than for their workability and appearance, may be much lower in value per unit of volume. The productive potential of such lands available for timber plantations is a component of sustainable timber yield.

The prospective productive forest land base

109. The length of time required to bring timber trees to maturity necessitates that lands dedicated to timber production should not be used for other incompatible purposes during that time. With population and other developments in Sarawak expanding, there must be no illusion that all existing forested or "waste" areas now available for forests will necessarily continue to be so.

110. There are many uses of the land which potentially compete with its use in perpetuity as production forest, notably: use for catchment protection and protection of fragile soils; for the preservation of biological diversity; for traditional shifting cultivation; and for conversion to plantation agriculture. Decisions about the amount of land to be allocated to each of these uses are fundamental to meeting the environmental objectives of the Sixth Malaysia Plan.

111. Accordingly, on the basis of the available information through published reports, plans, and interviews, and Forest Department and other government statistics, the Mission estimated the extent of possible competition from other land uses and the implications of this for timber production. The results of this analysis are presented in Table 5.1.

112. The consequences are considerable. It can be seen that the foreseeable requirements of land for purposes other than timber production will exclude more than half of the land area of the country. Even on the land remaining, it is not certain that timber production will ensue. For one thing at least one sixth of the PFE land is on slopes steeper than 60 per cent and, on that degree of steepness, present logging methods are quite unsuitable from the point of view of catchment objectives of the Sarawak Forest Policy. Furthermore, about a third of this land is still State land which may well be destined for agricultural development, despite the fact that all land classed as suitable for agriculture has already been excluded (top of Table 5.1).

113. Also, there is the continuing encroachment by shifting agriculture. In some parts, notably in the south west of the State, there is a genuine land shortage for traditional agriculture. In such circumstances, pressures build up which make it difficult to establish or retain land as Permanent Forest Estate and even TPA. This situation is being relieved to some extent by agroforestry schemes (e.g. Sabal) and by some agricultural development schemes (e.g. Mayang Tea). But we found that plantation work was sometimes regarded as a poor alternative to the independence of traditional agriculture. These pressures might be reduced by closer joint planning by the Agriculture and Forestry Departments and the State Agencies, and by cooperative schemes between them. Meanwhile, here and elsewhere, encroachment continues, mainly into logged-over forests, at rates of around 5000 ha/year for PFE and about ten times as much on State land. Although shifting cultivation is probably a diminishing factor in the long run, its persistence at rates similar to these must be taken into account.

114. Table 5.1, however, is presented more to illustrate a land use planning process than to present absolutes for Sarawak. Although based on what appear to be the best available sources, many of the figures, such as the eventual area of settled agriculture and the additional ultimate extent of shifting cultivation, are really quite uncertain.

TABLE 5.1

**LANDUSE PERSPECTIVE FOR SARAWAK**  
(**'000 hectares**)

ORIGINAL FORESTS	HILL DIPTEROCARP	PEATSWAMP	MANGROVE	TOTAL
('000 hectares)	11,040	1,250	170	12,460
<b>MINUS -</b> Lands needed for purposes other than timber production				
<b>PROSPECTIVE USE</b>				
Biodiversity (TPA) existing & proposed	925	68	15	1,000
Permanent agriculture	3,450	50		3,500
Additional cultivation	2,000			2,000
Urban, etc.	20			20
<b>REMAINDER -</b> Lands presumed available primarily for timber production				
<b>AREA ('000 hectares)</b>	<b>4,635</b>	<b>1,140</b>	<b>155</b>	<b>5,930</b>

TABLE 5.2

**STATUS AND SLOPE OF LANDS ASSUMED AVAILABLE FOR TIMBER PRODUCTION**

	HILL DIPTEROCARP		PEATSWAMP	MANGROVE	TOTAL
	Slope < 60%	Slope ≥ 60%			
<b>Primary forest</b>					
PFE (gazetted)	1,721	614	150	22	2,507
State land	824	588	195	84	1,691
<b>Harvested forest</b>					
PFE (gazetted)	729	68	529	15	1,341
State land			242	2	244
<b>Deforested land</b>					
PFE (gazetted)	90	1	24	1	116
State land				31	31
<b>Totals</b>					
PFE (gazetted)	2,540	683	703	38	3,964
State land	824	588	437	117	1,966
<b>TOTAL AVAILABLE</b> ( <b>'000s hectares</b> )	<b>3,364</b>	<b>1,271</b>	<b>1,140</b>	<b>155</b>	<b>5,930</b>



The division of the potentially productive forest area by slope categories is an approximation done by converting one source for the entire country by another considered more precise, but for only part of the country. The fact remains, however, that a tabulation such as this, which can be made more precise only as soon as more information is at hand, must underlie a continuing assessment of the sustainability of the timber harvest.

TABLE 5.3

PROSPECTIVE TIMBER YIELD - CUTOVER HILL MIXED FOREST

(HARVESTING TO THE MINIMUM INDICATED DBH)

DIAMETER CLASSES	60+ cm		45+ cm		30+ cm	
	1	1-3	1	1-3	1	1-3
WOOD QUALITY GROUP <sup>1</sup>						
AVERAGE RESIDUAL CROP <sup>2</sup>						
Number/ha	0.9	1.0	6.7	8.3	13.1	17.0
m <sup>3</sup> /ha	3.4	3.8	15.4	18.8	22.0	27.8
PREDICTED HARVESTABLE VOLUME (m <sup>3</sup> /ha, by cutting cycles <sup>3</sup> )						
25 Years						
Untreated	8.6	10.1	27.4	34.8	41.3	45.6
Liberated	18.5	22.6	32.6	41.9	54.2	69.9
30 Years						
Untreated	14.3	17.6	29.3	37.4	45.2	49.1
Liberated	23.4	29.2	43.0	55.4	60.7	78.3
35 Years						
Untreated	20.0	25.1	32.0	42.5		
Liberated	28.3	35.8	53.4	68.9		
40 Years						
Untreated	25.7	32.6	37.7	47.6		
Liberated	33.2	42.4	63.8	82.4		
45 Years						
Untreated	31.4	40.1	43.4	55.1		
Liberated	38.1	49.0	74.2	95.9		
50 Years						
Untreated	37.0	47.6	49.0	62.6		
Liberated	43.0	55.4	84.8	109.2		

Growth

data

Incomplete

For explanatory footnotes, see next page.

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**TABLE 5.3**

Sources: Sarawak Forest Department

<sup>1</sup> Wood Quality Group 1 contains 179 timber tree species (5% of tree flora)  
Wood Quality Group 1-3 contains 785 timber tree species (23% of tree flora)

<sup>2</sup> Residual crop used is the mean of:

		Number of crop trees
1,052 ha	in Sawai Protected Forest, selectively cut 1986	21,425
869 ha	in Pandan Protected Forest, selectively cut 1988	25,783
1,402 ha	in Kebulu Protected Forest, selectively cut 1989	82,191
776 ha	in Anap Protected Forest, selectively cut 1989	52,202
<hr/>		
4,099 ha		<hr/> 181,601

<sup>3</sup> Increment:

Plots: 090, Niah Forest Reserve; 102, Sawai Protected Forest; 106, Similajan Forest Reserve, 1977-1986.

Regressions of annual basal area increment per tree over initial tree dbh.

Untreated MAI (BA) = - 6.708 + 0.882 dbh - 0.002 dbh squared  
2,554 crop trees,  $r^2 = 0.32$

Liberated MAI (BA) = - 7.855 + 1.916 dbh - 0.017 dbh squared  
1,345 crop trees,  $r^2 = 0.21$

Yields: all reduced 20% for mortality and defect

Yield potentials

115. The next important question, after the land area available has been postulated, is the predicted yield. For the most extensive forests, the Hill Dipterocarps, Table 5.3 was devised from the sources indicated. Desired cutting cycles and sustainable yields are summarized in Tables 5.4 and 5.5.

116. These tabulations, taken in combination with the land areas presented in Table 5.1, lead to a number of conclusions that should be weighed in planning future forest management in Sarawak.

117. Table 5.4 indicates length of cutting cycle based on size at maturity, species, and treatment and the resulting indicated length of cutting cycle. It is seen that if the harvest were limited to trees of 60 cm dbh or more diameter breast height and to the choice No. 1 group of wood quality species, long cutting cycles would be necessary to attain the present harvest of 38m<sup>3</sup>/ha. More realistic would appear a minimum dbh of 45 cm with species in groups 1 to 3, permitting a 35-year cutting cycle. On the assumption (although this is of course uncertain) that future markets can be found for these smaller logs and more diverse species, this option is used in the following yield predictions.

118. Table 5.5 lists prospective sustainable yields, depending on the land dedicated thereto. To provide state-wide totals, the potentially productive peatswamp and mangrove forests are included in each of these estimates. For the peatswamp the FAO increment estimates were the best we could find (2.5m<sup>3</sup>/ha/yr for mixed forest and 1.1m<sup>3</sup>/ha/yr for the Alan forests). Accepting also the FAO respective areas of these two types, 63% was allotted to mixed forest. Sustainable yields are therefore 873,000 m<sup>3</sup>/yr in the mixed PFE and 497,000 for the Alan PFE. For the State lands the corresponding yields are estimated at 548,000 and 322,000 m<sup>3</sup>/yr, respectively.

119. The mangroves have been so little studied locally that their productivity must be estimated on the basis of data from elsewhere. At a mean annual increment for chips on a 10 year rotation, estimated at 3 m<sup>3</sup>/ha/year, the 37,000 ha of PFE mangroves could sustain a yield of 111,000 m<sup>3</sup>. If State lands were added this would increase by 86,000 ha and the combined sustainable production might be 369,000 m<sup>3</sup>/year.

TABLE 5.4

INDICATED CUTTING CYCLES FOR HILL FORESTS <sup>1</sup>

MINIMUM D.B.H.	SPECIES GROUP	INDICATED CYCLE (years)	
		<u>untreated</u>	<u>liberated</u>
<u>cm</u>			
60	1	50	45
45	1	40	30
30	1	25	15
60	1 - 3	45	40
45	1 - 3	35	25
30	1 - 3	20	10

<sup>1</sup> Assuming volume required equal to present cut (38m<sup>3</sup>/ha)

TABLE 5.5

PROSPECTIVE SUSTAINABLE TIMBER YIELDS FROM SARAWAK<sup>1</sup>  
(thousands)

FORESTED LANDS AVAILABLE <sup>2</sup>	AREA IN PRODUCTION (ha)	SUSTAINABLE ANNUAL YIELD (m <sup>3</sup> )	
		Untreated	Liberated
PFE < 60% slope	3,135	4,100	6,300
Add State < 60% slope	4,513	6,300	9,200
Add PFE > 60% slope	5,198	7,000	10,500
Add State > 60% slope	5,783	7,700	11,000

<sup>1</sup> Assuming 45 cm dbh limit, species 1 to 3, and 35 years cycle

<sup>2</sup> All options include peatswamp and mangrove lands and their predicted yields. Unstocked areas (147,000 ha) excluded because their yields are both uncertain and remote in time. With success, plantations on this area might sustain a yield between 1,000,000 and 1,500,000 m<sup>3</sup>/yr.

120. Table 5.5, although its data are approximate, appears to deserve careful consideration and corroboration or correction. The first option reflects present policies and practices. That is, allowing for other land uses as provided for in Table 5.1, and excluding lands above 60% slope, the sustainable yield from PFE is about 4,100,000 m<sup>3</sup>/yr.

121. A precipitate reduction in the rate of harvest to this level, because of its social and economic impacts on Sarawak, would be neither recommendable nor realistic. Accordingly, other options were explored for sustaining a higher yield. The first of these would be to convert the 824,000 ha of State land apparently not needed for other uses (Table 5.1) to PFE, and to include it in plans for continuing timber production. This would raise the sustainable level to about 6,300,000 m<sup>3</sup>/yr. But it would entail what has proven difficult and time-consuming, the gazetting of large areas of State lands for PFE.

122. Even with these State lands, the sustainable level would be still less than half of the present rate of harvesting, so further possibilities to increase it merit consideration. One would be to eliminate the assumed restriction on logging forests on lands steeper than 60% within existing PFE, and this increases the area by 683,000 ha, raising the sustainable yield to 7,000,000 m<sup>3</sup>/yr. But this gain would, with current logging practices, produce environmental damage totally unacceptable. Only with complete revision of standards and their application, possibly involving new equipment and more costly operations, would such lands be logged to satisfactory catchment standards and therefore added to the productive timber land base.

123. Gazetting the apparently available State lands that are steeper than 60% slope (588,000 ha) and adding them to the productive area as PFE could raise sustainable yield to about 7,700,000 m<sup>3</sup>/yr. Again, this would be predicated on successful gazetting of these lands and the assurance of a much higher order of logging practice than is traditional.

124. Liberation thinning as practised in Sarawak has significantly accelerated the growth of selected crop trees in cutover forests. Applied to some 35,000 ha already in Sarawak, its effects have been measured on thousands of trees recorded as part of a diligent research programme. The treatment is costly, requiring trained crews, but it promises not only to provide much needed added sustainable yield but, if required, might also reduce the length of the cutting cycle by as much as 10 years yet with sustainable yield equal to the 35-year untreated forest. But liberation, to be effective, would have to be applied throughout current logging areas, starting promptly, and would call for a silvicultural outlay heretofore made only on an experimental scale.

125. These findings suggest that, if harvesting of the hill forests continues as at present (13,000,000 m<sup>3</sup>/yr +/-), all primary forests in PFE and State land assumed to be available for timber production (Table 5.2), including those of more than 60% slope, would have been harvested in about 11 years. At that time only cutover forests would remain. There could then ensue a sharp decline in yield, employment, and revenue until the cutover forests mature.

126. This serious prospect might be alleviated, if a start was made now to phase down the rate of cutting so that the remaining primary forests provide timber until the cutover forests mature and are able to sustain future yields at levels such as those indicated.

#### The effect of present timber extraction on future yield

127. These predictions of sustainable yield can never be attained by continuing present practice. At present the way that logging is conducted is damaging to the environment and to the residual stand. In Chapter VI we discuss the serious effects that road building and skidding have upon the condition of water catchments; but logging, as presently practised, also reduces the future crop of timber species. Logging damage to residual trees is excessive; one area of 4,000 ha sampled showed only 45 trees per ha which would qualify for future crops. Marking, before felling, of the stems to be left and more careful felling (with penalties for damaging residuals) would do much to improve the situation.

128. The practices of the labour force in the forest directly cause much of the damage. The Mission found that there is practically no formal training for fellers or tractor and skidder drivers; experience is passed from one to the other. It is hardly surprising, therefore, that little attention is paid by the fellers to limiting damage to the residual stems or by skidders to this or other effects on the environment. Safety procedures also are usually of a low standard. These weaknesses are exacerbated by inadequate staffing of the Forest Department and the consequent inability to exercise the degree of supervision needed.

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129. Tractor and skidder drivers are paid piece rates by most companies, and fellers apparently by all companies. The emphasis, therefore, is on output; not on the minimization of damage. We had the impression that greater control was exercised on the Batang Baleh Forest Enterprises concession where company policy was to pay monthly far down the scale.

### Logging and local communities

130. The Mission found that the prospects for sustainable management were definitely affected by the native communities issue (paras. 27-33). One way in which this occurs is through shifting cultivation continuing to reduce the area of forest from which future timber yields can be expected. The second is through the increased cost of logging associated with the response of native communities to disputes over their rights and interests. This is important to the assessment since, apart from the economics of current operations, the increased costs put economic sustainability at risk in the long run.

131. In Mission dialogues and informal discussions with leaders and other representatives of local communities, least concern over logging or its effects was expressed by residents of the coastal strip or of the lowlands adjoining swamp forests; at Limbang, obstruction of navigation by logs was mentioned. By contrast, from those living inland in areas of Hill Dipterocarp forest affected by the recent intensification of logging, Mission members heard much of the tension that exists between forest operations as at present practised and local communities. Those living beyond the present range of logging expressed anxiety about their future.

132. Yet, with a few exceptions, objection was not raised to logging as such, but rather to its speed and where and how it was conducted. Many people recognized its importance to the economy, the advantage of jobs in logging, and the fact that some of the revenue funded social projects. There were strong complaints of invasion of 'temuda' (i.e., former farmland claimed under NCR), violation of cemeteries, damage to domestic water supplies, to watercourses and consequently to fish stocks, depletion of game, the disturbance of paths through the forest, loss of timber trees needed for personal use (e.g., boat building), destruction of rattan which is valued for domestic use and as a traded commodity, felling of fruit trees and of protected tree species of commercial value, such as engkabang and -- in the case of Penan -- poison trees ('ipoh').

133. Grievances included lack of consultation and unsympathetic treatment by operators and contractors, failure to be offered work except at menial levels, social problems arising from the intrusion of outsiders, and little direct participation in financial returns. There was an underlying feeling that the forest belonged to the local people, that the costs fell on them while the benefits went elsewhere. It was claimed that the blockades arose from the failure to obtain a hearing through proper channels.

134. The Mission was not able to review individual complaints, but did find that some allegations were not supported by fact. For instance, in a case widely publicized in the press, trees felled by loggers and claimed by disputants to be engkabang proved on investigation to belong to other, unprotected species. In other cases, e.g., effects on hunting and fishing, the situation is surely more complex than commonly represented (paras. 210-214).

135. In their representations, however, local community leaders and others, including SAM at Marudi, made no distinction between Native Customary Rights recognized under the Sarawak Land Code and claims that would not be admissible under Section 5 (see paras. 45-56). As already noted (para.62) the requirements preceding gazettement of Forest Reserves, Protected Forests, National Parks and Wild Life Sanctuaries involve detailed and thorough evaluation of all claims to customary rights, undertaken by the administration in conjunction with traditional community procedures. Existing rights, if validated by this process, may be recognized in the gazettement and allowed to continue in an appropriate manner, or disallowed, with or without compensation. The process may be disputatious, with rival claims needing to be settled by native adjudication, and (given the multitude of other demands on the time of administrative officers and community leaders) is often protracted. Determination of hunting rights, etc., in forest land which has not been cleared or otherwise claimed under Native Customary Right (e.g., 'menoa' land) are more complicated and potentially contentious, but may also be admitted -- as in Mulu NP both for nomadic Penan and, to a different extent, for the Berawan community of Long Terawan. Because all claims were settled before existing PFE or TPAs were gazetted, any subsequent clearance of the land, for farming or other purposes, cannot under Sarawak law give rise to new claims under NCR. According to statistics provided by the Forest Department, 116,000 ha within the PFE had been lost in this manner by 1985. The Mission visited Sabal FR, where there has been extensive and continuing incursion, and heard explanations of the problems arising and efforts to remedy the degradation of land quality.

136. Similarly, unless rights have been recognized in the gazettement notice, hunting within TPAs or Forest Reserve is illegal poaching (para. 64). Within Protected Forests, of course, extensive rights to hunt and gather forest produce are recognized for all Sarawak natives (para. 62).

137. In State land forest, the Land Code does not recognize claims to NCR established after 1st January 1958 unless Section 10 procedures have been followed or new Communal Reserve has been gazetted (see paras. 52-56). The Forest Department statistics show that 1,080,000 ha of State land forest were cleared for shifting cultivation between the 1960s and 1985. The Mission saw many areas where clearance was still proceeding, before and after logging. Although the Mission asked to see examples, no instance of Section 10 procedure was produced.

138. The Mission therefore concludes that many of the present complaints and claims of right by local communities are not based on Sarawak law as established by the Land Code, but on a continued application of older, traditional native custom. During dialogues, it was not apparent that this distinction is appreciated by the communities concerned, or indeed by others (such as SAM) pressing the case.

139. Compensation always turned out to be an important item on the agenda of our dialogues with community leaders and other local people. To meet the situation, in many instances 'sagu hati' (goodwill) agreements have been offered by logging companies to local leaders or to entire communities, specifying (often in great detail) arrangements for compensatory cash payments. The Sarawak Timber Association showed us a model agreement of this form.

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140. It does indeed appear that almost all of these problems would be alleviated if the Forest Department was to improve consultative procedures with local communities; if concession holders were personally committed and required to ensure closer and more sympathetic communication between contractors and local communities, before and during operations; and if all parties were to arrange for opportunities for rural people to participate more fully (e.g., training to improve skills and qualifications for employment). The Mission notes with interest the growing formalization of goodwill agreements; these too must be welcomed as a means to reduce discontent.

141. The dialogues also revealed considerable interest in the establishment of more Communal Forests; the Mission appreciates also the validity of administrative objections to using this means to enhance community participation in logging. The Forest Ordinance recognizes the rights of local communities to forest products for their own use such as house construction or boat building (see para. 61). If this need could be met by administrative rather than legal measures (by reserving, administratively, subunits of Protected Forests near longhouses, for local use) the Forest Department could retain management control and ensure sustainable utilization.

### Research

142. Much excellent silvicultural research has been carried out in Sarawak. Without it the Mission would have been less able to draw firm conclusions about the sustainability of timber management. Shortage of staff has meant that much of the data collected has not been analysed. If the full potential of the forest resources of the State are to be realized, research analysis of the results and their incorporation into management will require more resources. In particular:

- (1) There is not yet a sufficiently accurate assessment of the forest resources of Sarawak a long-term supply and demand projection for important forest products;
- (2) The present network of permanent increment plots does not sufficiently cover representative areas of the forest to provide an adequate basis for monitoring future growth trends and sustainability;
- (3) There is not enough research into reforestation and timber plantation management both to rehabilitate the soil and add to the sustainable forest productivity of the country;
- (4) Research on the properties, uses and potential markets of the many tree species in Groups 1-3, which are not used at present, might prepare the way for greater utilization of the productivity of the forests.

### Sustainability and the timber industry

143. A general tendency in recent years has been for tropical timber countries to reduce their log exports while creating and expanding timber processing in the country of origin. Sarawak is at a crossroads where it will have to decide whether to continue its present structure or whether the time has come to plot out a more dynamic policy leading to a radical change of the export mix from logs to value-added products in their various forms.



144. The Mission has had a chance to study some of the initiatives and measures already taken which clearly indicate a trend towards more rapid industrialization.

145. There is an impressive system of ready and export-oriented ports and port authorities. The various aspects of the development of timber industrialized zones leave little doubt that major changes are anticipated. It was made clear to the Mission that foreign investments and joint ventures from ITTO member countries and elsewhere are welcome and needed to acquire the necessary know-how.

146. Any substantial change from log export to downstream industries will require an educational and training system well beyond the capacity of the existing training institutions. At present the Timber Research and Technical Training Centre is the only major institution, and, as the proposed increase in local processing moves from the present 10 per cent to 30 per cent, then it is logical that the output of the Training Centre should be increased proportionately.

147. Any new industry will not only depend on skilled technicians and other staff, but clearly also on general manpower. It would be useful to make careful studies of the expected population growth and other relevant matters concerned with the availability of manpower in the areas intended for expansion of the timber industry.

#### Loading and log movement procedures

148. The procedures, both for log movements and for royalty assessment, were traced at various points in the field between Sibu and Bintulu. It seems that the procedure for checking the log movements the whole way through is adequate, although there is still the possibility of human error. A general principle in the checking system is that the forestry officers in the field, at the log ponds and wherever the checking takes place, never stay more than 1-2 months at any one place and they never go back to the same place within the same year or twelve months following, ensuring that there is a limited risk of undetected malpractice.

#### Measurement for royalty assessment

149. In Sarawak, royalty stamping is conducted at the log pond. We have followed the checking procedure at the log pond and the possibility of mistakes is small. Sampling is at random based on a computer selection of 10 per cent on sizes, and there is 100 per cent check on all other matters such as species etc. If the 10 per cent is found to be incorrect, the whole consignment is refused and all the work has to be re-done by the logger. Generally speaking, we consider that the present system could hardly be improved.

#### Possible future directions

150. If a substantial and sustainable forest industry is to continue to be a national objective, it is vital as soon as possible to enlarge the PFE to its final size within the limits of other demands. This means that urgent action needs to be taken to incorporate all available State land forest into the PFE.

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151. The future yield from the production forests could be increased by reducing the damage to residual stems. The possibilities of the wider extension of liberation thinning are great, and it would be advisable to institute studies to simplify procedures, reduce costs and assess more precisely the level of benefits. More detailed information on rates of tree growth is urgently needed, which could be obtained by establishing a network of increment plots through representative areas of the forest. The nature of the second cut forests tending towards smaller logs will eventually assist in reducing the risk of logging damage and thus increase the sustainable yield; and the development of markets for more timber species might increase this still further.

152. Fuller cooperation of local communities might be gained by involving them more directly in concessions and in the management of forests which are close to them. In the long run the social and economic benefits should far outweigh the extra effort involved. The social goal of communicating and conveying to local communities the potential benefits of sustainable timber production and forest conservation is also of great importance. It is foreseen that in the future, sustainable forests will sustain also a stable, healthy people with a much improved standard of living, and that this is the sensible course for a forest-rich country such as Sarawak. This will call for imaginative leadership on the part of the Government to guide a major transition from the present to the future with the least possible adverse social and economic consequences.

## VI. FINDINGS - SUSTAINABLE CATCHMENT MANAGEMENT

### Policy and strategies

153. Catchment values are primary objects of the State forest policy and are accorded high priority in it. On this point the policy statement is quite specific and comprehensive:

"To preserve permanently for the benefit of the present and future inhabitants of the State, forest lands sufficient for: . . . the safeguarding of soil fertility and of supplies of water for domestic and industrial use, irrigation and general agricultural purposes and the prevention of damage by flooding and erosion to rivers and to agricultural land."

154. Yet the Strategies make no mention of catchment protection while standards set for erosion control are inadequate to make the policy a reality.

### Prescriptions

155. Prescriptions for soil protection occur in two places: in the terrain classification; and the engineering plans for concessions. Lack of staff hinders the effective implementation of both.

#### *The terrain classification*

156. In the FAO 'Inventory of the mixed dipterocarp forests of Sarawak 1969-72' Technical Report 2, the terrain has been classified to enable logging possibilities to be assessed. Terrain class IV is described thus: "excessively steep country and vertical cliffs; more than half of area with long, continuous slopes having gradients in excess of 35 degrees (70%)". Logging is not permitted in terrain class IV.

157. The Engineering Plans determine the layout and standards of roads, culverts and bridges. From our inspections it is clear that the main concern is with the road system as an efficient means for transporting logs. Environmental considerations do not appear to enter into the prescriptions for design, except in so far as they enhance efficiency.

### Logging in Hill Dipterocarp Forest

#### *The observed effects of logging*

158. In steep terrain there is always some natural erosion, especially caused by landslips during very heavy rain; but in recently logged hill forests there is now serious accelerated erosion and soil deterioration due almost entirely to the operation of machinery - in building roads, in opening and using skidding trails and in excessive cutting into the surface soil while preparing the surroundings of a tree for felling or skidding. And, despite the rapid colonization of abandoned roads and skid trails, some gully erosion continues under this new cover of vegetation.

159. Away from the scene of these machine disturbances, the forest soil appears to suffer little from erosion. The generally light extraction (of five to seven trees per hectare) is often concentrated in patches. This means that, immediately after extraction, those parts of the forest not affected by machines form a mosaic of areas of no

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disturbance and others where a substantial part of the canopy may have been removed. Away from machine tracks there generally remains sufficient cover (of remaining canopy trees, understorey trees, saplings and ground vegetation) to prevent sheet erosion; and after a few years the canopy is generally fully restored with respect to the interception of rainfall. If adequate strips of forest were left unlogged along stream courses, it should be possible to prevent silt from such operations reaching the stream beds.

160. In contrast to this favourable picture, the vast majority of the sediment entering the streams and rivers comes from gully erosion originating from roads, skid trails and other areas cleared by machinery. As might be expected, the amount is strongly related to the steepness of the terrain and the nature of the rock and soil. (For example it is particularly serious in clay soil and in sites where shale rock strata lie parallel to the slope.)

161. The problem of accelerated erosion is largely confined to steep and dissected terrain. The main sources are: cuttings and embankments of roads; culverts inadequate or absent, leading to the ponding of water and later disruption of the road; skid trails which are too steep, cut unnecessarily deep into the soil and constantly deepened with re-use; and the excessive use of tractors in getting close to felled trees, in clearing the ground and in removing obstructions.

162. These operations lead to rapid immediate sedimentation in which the stream beds become clogged with deep deposits of silt, sand and gravel. While logging is being actively carried out, the streams are turbid with clay and fine sediment. Afterwards they often run clear except after heavy rain. But these streams are left with a heavy bed load of sediment which will continue to move downstream for many years. In addition, every successive storm will reopen the scars of gully erosion; even after vegetation has once again covered the ground, there are clear signs that run-off from the roads continues to deepen erosion gullies through the forest.

163. The Mission is, therefore, concerned that sustainability of catchment values is at risk especially in the steep terrain because of:

- Extraction (and therefore road construction) being conducted in topography from which it is, in theory, excluded;
  - Insufficient attention to excluding logging from small areas which are too steep;
  - Inadequate control of protection of reserves along stream banks;
  - Insufficient attention to the erosion caused by road, culvert and bridge design and construction, the location, opening and closing of skid trails and the general operation of machines on the ground;
  - Damage caused by returning after a few years to carry out further extraction ('re-entry'). (This seems mainly to occur in State land forests rather than the PFE.)
- Neglect of roads and skid trails after extraction is completed.

*The views of local communities*

164. One of the most common complaints in public dialogues was concerned with the gross siltation and contamination of fresh waters as a result of logging activities. It was frequently claimed that this had caused serious damage to domestic water supplies, fish stocks and to navigation. Evidence of siltation was obvious on all our visits to concessions in the steeper parts of the hill dipterocarp forests; in one instance the silted main watercourse contrasted with the clear water coming from an unlogged part of the catchment. Logging, however, is not the only factor contributing to the decline in inland fisheries (see paras. 210-214).

*What might be done*

165. There are broadly four possible courses of action: (a) to continue harvesting as at present and accept the environmental cost; (b) to continue harvesting using present equipment but with better trained staff operating to strictly enforced standards; (c) to adopt new harvesting methods based on cable systems and/or smaller machines; or (d) to redefine the terrain within which logging is permissible, and to cease extraction in topography in which the erosion risk is unacceptable.

166. The findings of the Mission regarding these possibilities are as follows:

(a) *Acceptance of environmental costs.* As logging is conducted at present in steep terrain, there is without question a very considerable environmental cost. Damage to the upper stream courses and turbid waters are immediately evident and may be partly the cause of depleted fish stocks and contaminated water supplies about which there are many complaints from longhouse dwellers; serious and lasting damage is likely to arise in the future, as the bed-load moves downstream, sandbanks interfere with river navigation, seasonal flooding increase and river mouths and ports become silted. The immediate costs fall mainly on the local communities; in the longer term downstream consequences will affect the entire State.

If logging in the steeper areas of hill forest is to continue using present methods and with present standards, the State will have to accept indefinitely continuing environmental costs as a price to be paid for the revenue received from timber. The question then becomes one of where the additional cost should fall. At present, once the financial costs of extraction have been met, any revenues and profits are apportioned between the State Government, the Federal Government, the concessionaire, the operator and (in the case of locally processed timber) the timber industry, including its 80 per cent rebate on royalty.

It seems to the Mission that the costs of logging to higher environmental standards might fairly fall on the concessionaire, as the individual ultimately responsible for the quality of the concession, and on the Government, as the other main beneficiary, within the limits of a reasonable return on his investment to an efficient operator.

(b) *Continuation with better control.* Logging operations could, however, be carried out to much higher environmental standards, simply by using better trained operatives acting to strict guidelines which are supervised and enforced. There is no doubt that the present situation would be greatly improved in all classes of terrain by the establishment and enforcement of standards, and by better training of operatives. Under present methods of extraction, the costs of road construction to higher standards through difficult terrain would be greater, but the skidding and extraction operations need not necessarily be more expensive. With better planning and more skilful operators, logging itself might indeed be more efficient and therefore cheaper. There is no doubt, however, that the total operation would cost more.

(c) & (d) *Environmental costs not acceptable.* If, however, it is considered by Government that the environmental costs are too high (and this is the view of the Mission in many instances), the forests in question or substantial parts of them should, at least temporarily, be excluded from the 'production forest' (the forest destined for the production of timber) until improved harvesting systems are available and applied.

Exclusion of such areas would be relatively simple where concessions have not yet been awarded but would require special measures in areas for which concessions have already been allocated. In such cases it would be necessary to redraw and reduce coupes, and that might be part of the renegotiation processes associated with reducing the area of the annual cut. In any case, once present logging is complete, such areas of forest should be closed to any further logging until more appropriate systems are available and economic.

167. The critical issue is to decide what degree of damage is tolerable and hence to decide the kinds of terrain on which logging should, or should not, be permitted using any particular method. In such a hilly country, setting different terrain limits would (paras. 120-123), entail a considerable reduction in the area of available productive forest. The Forest Department estimates the area of natural forest in terrain class IV as 571,000 ha. Comparing maps with conditions in the field, the Mission feels that the area of steep land may have been underestimated because the units used as the basis of measurement were relatively large (100 ha). By examining the results of FAO inventories and using a limit of 60% (31°), we have come to an estimate of the area that should not be logged using present methods at almost three times that mapped as terrain class IV, or a total of 1.6 - 1.7 million ha (see Table 5.2).

168. Some research by the Forest Department on erosion risk analysis in Sarawak forest was published in 1985 and a study is now being conducted by WWFM on the effects of logging on the forest fauna, including that of streams. Studies conducted in Peninsular Malaysia show that siltation can be greatly reduced by good logging practice. Such studies should provide a firm basis to assess the risk of erosion in different terrain conditions and to assess erosion damage. These studies need to be supplemented by assessments of the financial and environmental costs and benefits of imposing different factors of erosion risk and using different extraction methods.

169. Meanwhile it would be prudent to halt extraction on steep and erodible terrain or, where this is administratively impossible, log once as carefully as possible with preset methods and then withdraw until more suitable logging systems are developed.

*The need for protection forest*

170. There is at present no provision in Sarawak legislation for the dedication of forest for 'catchment protection'. The Malaysian National Forestry Act, 1984, provides for a number of categories of forest designed to protect water and soil (Soil Protection Forest, Soil Reclamation Forest, Flood Control Forest and Water Catchment Forest). Applied in Sarawak, such categorization would give an opportunity to select the areas to protect on a number of different grounds: steepness, erodibility of soil, altitude and the catchments of water supplies or hydro-electric dams. Protection Forests would also make an important contribution to the conservation of biological diversity.

*Code of environmental conduct*

171. In addition to the establishment of 'protection forests', other measures that could be taken, as parts of a code of environmental conduct, include:

- Strict environmental specifications for the design and construction of roads, bridges, culverts, landings etc., for the use of extraction gear, and for the design and use of skid trails.
- Where the general terrain is suitable for present methods of logging and for the construction of extraction roads, stricter application of the rule excluding areas of over 30 degrees slope from felling and skidding.
- Demarcation of stream reserves along subsidiary streams according to well defined criteria, and prohibition of felling of trees in them or into them.

*The closure of roads and skid trails*

172. Both roads and skid trails become re-covered relatively quickly by vegetation when they are abandoned but the Mission found that the danger of gully erosion still remains, unless proper steps are taken to prevent the channelling of water over the surface. Whether the roads are closed or left open (and there seem to be arguments on both sides), every reasonable effort should be made to reduce accelerated run off from them.

*Training*

173. At present experience in logging operations is largely gained on the job, and by example, from operators who are themselves untrained. From what it saw, the Mission strongly believes that great improvements in the efficiency and the quality of operations could be brought about by better formal training of operators. This would enable operators also to be introduced to environmental aspects of extraction.

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## A model concession

174. The Mission therefore found that there were strong arguments for setting up in Sarawak a model concession which could be used for training, demonstration, research and the development of new logging methods. In addition, a model concession would enable more information to be acquired about the efficiency and environmental effects of different methods of extraction, and the comparative costs of various treatments, the relative merits of different machines etc. Such a centre could well perform a valuable regional function.



## VII. FINDINGS - BIOLOGICAL DIVERSITY

### General

175. Sarawak possesses an exceptionally rich and diverse natural flora and fauna. Together with the adjacent islands of Indonesia and Peninsular Malaysia, Borneo (and therefore Sarawak) forms part of the western Malesian floristic region and the Sundaic<sup>1</sup> faunistic subregion. Also present are important endemic elements in all taxonomic groups and, despite a century of so of research, it is likely that many taxa remain to be discovered and described.

176. The natural climax vegetation of Sarawak is evergreen forest and forested coastal swamps. In the lowlands and the hills up to about 1000 m altitude the forests are dominated by the dipterocarps which reach their highest diversity and greatest endemism in Borneo. These Mixed Dipterocarp Forests (MDF) vary in composition with soil parent material, drainage and aspect. At higher elevations, formations known as 'lower montane' and 'upper montane' forests occur, of very different composition and unique appearance. Notably different forest types associated with soil conditions are also found elsewhere: as a narrow strip on sandy foreshores (strand forest), on coastal muds (mangroves), on alluvial flats, along streams and river banks, on acid soils and leached sands (kerangas) and on limestone. The extensive swamp forests on lowland peats are of a type found only in Sumatra and Borneo. Second growth after shifting cultivation ('temuda') forests, which now cover large areas, are composed chiefly of pioneer species which naturally occupy landslips, unstable river banks and gaps in the forest caused by the death of large trees.

177. Although the herbs of the Sarawak forests are poorly documented, this group may be as rich and diverse as the tree flora. It is, therefore, to be expected that many rare species and local endemics will be found, especially in association with particular habitats, e.g. limestone hills. The herbs of cleared land, on the other hand, represent an array of international weeds and creepers which are of little conservation importance.

178. The native fauna is forest adapted and few of these animals can survive in open country. When the forest is cleared the habitat is invaded by widespread non-native forms. Altitudinal zonation of the faunal communities is a prominent feature, although no exact match with tree-flora zonation has been clearly demonstrated. There is greatest diversity in lowland MDF below about 500 m. Sundaic endemics are important in this habitat. There is also high endemism in the montane forests; several vertebrate species are known to have restricted upland ranges.

179. There is now wide international agreement on measures needed to preserve biological diversity. Because this diversity resides in natural ecosystems, the most effective means for preservation depends upon safeguarding as wide a variety as possible of these ecosystems.

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1. The biogeographic region comprising the Sunda shelf.

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180. In the context of Sarawak forests, much will be accomplished by the preservation of:

- (1) A complete series of representatives of wide-spread habitats (for example the various forest types), accomplished by ensuring that a full range of variation of soils and altitudes is included.
- (2) Examples of all unusual habitats and areas where there are records of rare and endemic species.
- (3) Viable populations of animals (especially those mammals and large birds) which require large ranges.
- (4) Those species which are naturally rare or endangered, or subject to intensive cropping, e.g., orchids.

181. The effectiveness of protected habitats depends primarily upon the completeness of coverage. They should therefore: be as large as is necessary to preserve the ecosystems of populations for which they are selected; and contain as much internal variation (wet and dry soils, low and high, slope and aspect) as is practicable; and be surrounded by buffer zones and connected to each other by corridors or stepping stones of reasonably similar land use (e.g., protected forest ecosystems connected by managed forest).

182. The smaller the protected areas, or the more different the land use by which they are surrounded, the greater the investment and care that has to be put into management.

183. If these measures are complete and effective, the use of remaining land for other purposes will not detract from the objective of conserving biological diversity. Some uses, for instance forest reserved for catchment protection, can also contribute greatly to the conservation of biological diversity. Most forms of land use which are not entirely artificial can make some contribution, and this can be particularly so in the case of natural forests managed for timber production. Monocultures, whether of herbaceous crops or trees, have little or no value in protecting native animals that are accustomed to the high diversity of natural forest.

### Policy and strategy

184. There is no published policy for the conservation of biological diversity in Sarawak, but most elements of a good policy are contained in the Statement of Policy of the Forest Department; and, with the various amendments which are now being considered for adoption, in the National Parks Ordinance and the Wild Life Protection Ordinance.

185. Important contributions have lately been made in helping to develop a strategy for the conservation of biological diversity, in particular the detailed studies and reports prepared by the Dewan Undangan Negeri Special Select Committee and the study carried out by WWF Malaysia in collaboration with the State Planning Unit in the mid-1980s. The former were approved for implementation in November 1989. It is understood that the Amended Ordinances should rapidly become law.

186. The present policy of the Forest Department on National Parks is as follows:

- (1) To preserve areas of significant geological, biological or historical values for the benefit, education and enjoyment of the present and future generations; and

- (2) To provide recreational opportunities for the public. Limited facilities may be introduced to meet the recreational needs if the facilities are in harmony with the preservation of a Park. . . .

187. This policy is accompanied by strategies for: the preservation of nature; access; visitor accommodation; attitudes to government installations; park interpretation and education; recreation; and zonation for different uses.

188. The policies for the conservation of biological diversity through the parks system include:

- (1) Establishing new National Parks and Wildlife Sanctuaries to complete a State-wide network.
- (2) Detailed resource inventories of established National Parks and Wildlife Sanctuaries.
- (3) Enhancing the tourism potential of National Parks through the formation of management plans and the development of infrastructure and recreational facilities.
- (4) Conducting long-term research on the protected species, conservation management of hunted species and management of habitat.

#### Totally Protected Areas

189. The categories of Totally Protected Areas are explained in Chapter III. At present there are seven National Parks totalling 79,098 ha and three Wildlife Sanctuaries, totalling 174,851 ha. The sum of the Totally Protected Areas is thus 253,940 ha (2.04% of Sarawak's land area).

190. In addition the Forest Department has proposed nine further NPs (607,727 ha) and three proposed WSs plus two extensions (177,802 ha). Gazetting of these proposed areas would bring the total area to 1,038,469 ha or 8.33 per cent of Sarawak's land area. The increase would thus quadruple the present protected area. For the reasons given below, the Mission considers that this area is still inadequate to preserve the full range of biological diversity in Sarawak.

#### *Completeness of representation*

191. From all the information available to us, it is clear that the system will not be complete until all the areas proposed by the Forest Department have been gazetted, together with a small number of additional areas. These are as follows: the extension to Samunsam WS; Salak Mangroves; the proposed Maludam WS; the proposed Batang Ai NP; extensions to Lanjak-Entimau WS - to protect orang utans and white fronted langurs effectively (because the present protected area is too small and unconsolidated and some of the highest densities of orang utan are outside it) and to preserve a sample of the inland flora and fauna of the zoogeographical region south of the Rajang River; the proposed Pulong Tau NP - to protect the highly endangered Sumatran Rhinoceros and the flora and fauna of northern Sarawak; and the total protection of a complete Peat Swamp System (even if part of it has already been logged).

192. The State Planning Unit, together with WWF Malaysia on biogeographical grounds, has put forward additional proposals for two NPs in the Magoh and Sepayang areas where the majority of the families of nomadic Penan now live. An important deficiency would be filled, if these could be rapidly gazetted.

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193. At present the accomplishment of a complete system of undamaged protected areas is seriously jeopardised by the long delays in the gazetting of proposed protected areas. For example, during the 15 year that Loagan Bunut has been pending, an important sector of the northern part of the proposed park has been logged and is now subject to incursion by shifting cultivators, to the serious detriment of the objectives of any future National Park.

### *Changes in legislation*

194. The Mission considers that wildlife legislation would be strengthened by Section 12(1) of the proposed Wild Life Protection (Amendment) Ordinance which gives overriding status as a Wild Life Sanctuary, but any easing of the process of revoking TPAs would be a retrograde step.

### The land use setting of the present Totally Protected Area system

195. With the passing of time, the natural ecosystems outside the TPAs will become modified and the TPAs, if isolated, will become depleted in species. This effect would be minimized if there were buffer zones around the TPAs and corridors between them. Together these would provide some degree of spatial continuity between natural forest areas (catchment protection forests, national parks, wild life sanctuaries and nature reserves) and forests managed for timber production. Three chains of protected areas plus managed forest are desirable: near the coast, in the hill dipterocarp zone and in the border forests.

Habitat change and species loss are most acute in the foothill zone and where conversion to agriculture takes place. It is probable that there will be pressure to transfer to agricultural use any areas of the PFE which contain suitable soils (for example the proposals for sago on peats). Whenever this occurs, the gazetting of a representative part of each area as TPA and its subsequent protection would allow such areas to be restored to semi-natural habitat and thus strengthen the maintenance of biological diversity and ecological balance.

196. The timber production forest will change in composition as it passes through successive cutting cycles, or during the rotation in the case of alan forests. If these forests contain areas of particular biological value or areas needed to supplement the TPA network, their protection would at the same time provide a reservoir of species (including the pollinating and dispersal agents of forest trees) which would be available to recolonise or regenerate logged areas. The proposed new category of Nature Reserve included in the new amendments to the National Park Ordinance could be used to establish them.

### *Implementation - the management of TPAs*

197. Protection of TPAs must be fully effective. For this, National Parks require comprehensive management plans covering such aspects as zonation for visitor use and interpretation and educational facilities. Some such plans have been prepared or are in advanced draft, but plans need to be completed for all NPs. It is also essential that local communities be involved and fully supportive. At Loagan Bunut, where management of the fishing will be an integral part of park planning, the local community must be persuaded of the potential benefits and they must be associated in the management process.

198. In the best staffed reserves, management and relations with the public are good. But this is not invariably so. Established NPs and WSs in the coastal zone are subject to damaging incursions by illicit logging, or by cultivators, for instance hill paddy and pepper farming at Gunong Gading NP, Lundu, an area where there is heavy pressure of population on the land. The situation would be helped by a combination of measures. More rigorous prevention of illegal incursion would need to be closely linked with improved opportunities for productive farming outside the NPs, and supported by better public relations.

199. The Mission found concern about the extent that additional TPAs might interfere with freedoms to hunt and fish. As a result there is an absence of support and cooperation from the local communities. More effort is clearly needed to approach local communities in a more sensitive manner and to explain the functions and advantages of TPAs. The employment provided at Gunong Mulu is a good advertisement for the local advantages that may be conferred by National Park status. Another argument lies in the ability of TPAs to provide waters for fish to increase and sanctuaries within which game animals can breed unmolested, thus providing a reservoir to stock areas outside, in which they may be legitimately taken.

200. These extra tasks require increases in staff of NPWO, trained in the particular skills required.

201. Finally, we are convinced that the success of TPAs in the conservation of biological diversity requires clear and resolute political leadership from above.

### Species conservation

#### *Plants*

202. There is inadequate protection for certain plant species. Protection would be strengthened by a plant protection ordinance covering at least the preliminary list of plant species recommended for protection by the Dewan Undangan Negari Special Committee. There is also an absence of cross-Departmental enforcement (which would involve Forestry, Agriculture and Customs).

#### *Animals*

203. The extent to which local people rely upon wild game and fish as a protein source was strongly stressed in many submissions, and raised in dialogue with the Mission by rural people from all parts of Sarawak. It is evident that there is an increasing shortage of both but the reasons for this are not clear cut.

204. It has been asserted that one of the consequences of logging is a serious decline in the availability of wild meat and, through siltation of the rivers, a grave reduction in the stocks of fish. Yet, it is also clear from our other sources of information and from the evidence in the Annexes to the DUN report that there is also a serious problem of over-hunting and over-fishing throughout Sarawak.

205. Doubtless, logging concession employees play a part in increasing the pressure on wild game and the easier access provided by logging roads brings in other hunters. There also appears to be no tradition of restraint in hunting, either among the rural population who depend upon the resource, or among those from urban areas.

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206. Animals in TPAs are under constant threat from poaching. There are problems close to centres of population (e.g., Samunsam WS, Kubah NP) and even in remote areas, such as Lanjak Entimau WS.

207. The DUN has recommended an increase in the list of protected mammals and birds, legislative provisions to regulate and control hunting activities including restricting the right to hunt to the holders of gun licences, imposing bag limits on certain species, the prohibition of shooting flying foxes and certain birds at their roosts and limitation of the number of cartridges sold at one time. It also recommends regulation of wildlife meat trade and the trade in wildlife products other than meat, and that the captive breeding of certain wild animals and birds should be encouraged.

208. The experiment in deer and wild pig breeding at the Sabal Forest Reserve provide a useful lead. In the long term, however, it needs to be organized with proper veterinary and animal husbandry support and the involvement of the Agricultural Department.

209. Through the dialogues, the Mission found that community leaders were unwilling to accept the DUN recommendation that they should be made honorary game wardens with enforcement powers and legal immunity, but considered the duty of enforcement only appropriate to officers of the NPWO section.

### *Freshwater fisheries*

210. Freshwater fisheries in Sarawak fall within the responsibilities of the Inland Fisheries and Aquaculture Branch of the Agriculture Department, under an Assistant Director. There are three sections, concerned with research, production and training, and lake and riverine fisheries development respectively.

211. The Branch has no specific responsibilities for the conservation of fish biodiversity, although an important regional survey of Baram lake and riverine fisheries was instituted in 1976, sponsored by the International Development Research Centre of Canada.

212. The latest available annual report (1986) described the main objective of the lake and riverine fisheries section's resource survey:

"to obtain sufficient information for the formulation and subsequent implementation of the fisheries resource development and management policies of the State. The work programme is focussed on the determination of species composition, magnitude, distribution and optimum sustainable yields of available fish stocks in the selected lakes and major river systems."

213. The same annual report states that:

"Various species of riverine fish were still relatively plentiful, especially in the more remote areas . . . But in the main rivers and lakes of Sarawak, it was generally claimed that the fish catches had declined. Although such claim has neither been documented or substantiated, it was the general complaint of riverine fishermen that their catches were less in 1986 than in previous years. It was believed that the decrease in the catches was caused by the degradation of water quality due to siltation of

rivers and lakes as a result of lumbering activities, disturbances caused by water traffic, periodic incidence of illegal fishing using poisonous substances, explosives and electric shocks, and general over-fishing."

214. This opinion was echoed by staff in discussion with the Mission. While fisheries officers remain convinced that there has been a serious decline in freshwater fish, the statistical evidence is not available and no research into the reasons has been conducted or is planned. As long as this is so, it remains impossible to identify any one of the causes given above as a single, major contributory factor.

#### Organizational matters

215. The Mission considers that the existing position of the NPWO within the Forest Department appears to be best for the present, provided that the proposals are implemented to raise the status of the office and that opportunities for promotion within the Department are available to staff qualified in national parks and wildlife disciplines, equal to those in forestry disciplines. Progress in that direction is seriously impeded by the staff ceiling imposed in 1982; and, while some tasks can be carried out by voluntary bodies or under contract, performance cannot improve sufficiently until the core staff is strengthened. This would, in our view, best be assisted by maintaining the close natural links with the Forest Department rather than constituting the NPWO as a separate Department under the Ministry of Environment and Tourism.

#### Public relations

216. For many TPAs, there is evidently competition for land or tensions over land use or other forest uses with local peoples. Examples of encroachment and poaching have been mentioned above; at Mulu NP the Penan tua kampung (headman) expressed concern over the conflict between tourism and the exercise of his community's traditional hunting rights (notably in Deer Cave). There is \* protected area over so large a State, there can never be enough NPWO staff to enforce policies that are poorly understood and therefore not popular among local communities.

217. Moves are being made to bring hunting under control by setting up Hunting Associations whose members can regulate themselves and who learn to respect and look after local sanctuaries. This arrangement has proved successful in other countries and its adoption in Sarawak would certainly be beneficial.

218. Some Parks, such as Bako and Lambir, are very popular and attract many visitors. We found that in both these Parks skilful management has avoided damage from excessive visitor pressure. Further political support could be gained by developing arguments based on recreation and tourism.

#### Research and a Research Advisory Panel

219. Forest management aimed at conservation and the maintenance of biological diversity needs the support of a well designed programme of research and monitoring, including research plots having protected area status. Particularly important for the effective management of Ws is research into the biology of the most important species that they are designed to protect.

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220. However, the level of research power in the Forest Department on silvicultural and forestry-related topics is not matched by a parallel capacity in the wildlife/animal side. There is a huge array of practical management-related problems concerned with the animal populations which the TPAs are designed to protect and many of these would be suitable for short-term graduate research students. Links with Universities in Malaysia and outside the country through an expert Research Advisory Panel would not only assist the formulation of research policy but also provide a highly cost-effective means for the execution of research programmes.



## VIII. FINDINGS - ECONOMIC SUSTAINABILITY

221. The Mission has taken the general term "economic sustainability" to mean that the economic structure built upon and around the utilization and management of the forests must be able to continue indefinitely into the future at not less than the present level. The most obvious part of that economic structure is made up of the following:

- the chain of forest industries involved in the growing, harvesting, transporting, processing and marketing of wood (and possibly bark);
- the network of industries concerned with the utilization and further processing of the output in Sarawak and with supplying materials and services to those industries;
- the infrastructure developed wholly or partly in support of the growth of those industries;
- the State revenue base.

222. However, the non-wood products and services of the forest also have linkages into the economy and they must also be considered in any assessment of economic sustainability. National Parks and Wildlife Sanctuaries, for instance, have onward links with tourism and backward links with rural communities. Forest products other than industrial wood have similar linkages, as well as the vitally important inputs into rural communities from foods, building materials and weaving materials. The forests as catchment cover also have obvious forward linkages through soil conservation and water quality effects into the agricultural, industrial and urban sectors, as well as into the river transport systems, on which much of the Sarawak economy depends.

223. An input-output analytical framework, in physical as well as the usual financial quantities, would be needed to trace these linkages and ramifications and the abilities of present policies and practices to sustain the forest-based economic structure. No such framework exists and the construction of one, in the necessary detail, is a long way off. Hence, the most the Mission can do is to make a judgement in broad terms on the likelihood of economic sustainability in the light of the information available to it.

224. As far as the wood based industries and the associated industries are concerned, their sustainable level depends upon: the raw material supply of industrial wood which the forests under sustained yield timber management can maintain and the markets for their output.

225. It is commonly assumed that the upper limit of the size (and the structure) of the wood-based industrial sector of an economy is set by the sustained yield capacity of its forest resources. But, for Sarawak, this is not necessarily so.

226. The sustained yield potential of the forest resource of the State, as estimated in Chapter V, depending on the assumptions about the land availability and the intensity of silviculture, ranges from about one third to three quarters of the present level of output. But, even at the lowest level, it is many times greater than the State's requirements for timber products, now and well into the future. It is possible, therefore, that the upper limit is set by the absorptive capacity of the export markets and the price, quantity and quality relationships in them, rather than by the forests. If these markets can absorb more than the sustained yield capacity of the forests,

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then forest management planning for timber production based on the forests is sound enough. But, if this is not the case, then what the forests could produce is secondary to what the markets could absorb.

227. So far, the export markets have been able to absorb all of the rapidly increasing output. This may be because the timber has been exported mainly as logs during a period in which other sources of log imports were being closed off. This log export driven bias has drawn a great deal of criticism on account of the adverse or undesirable social, ecological, environmental, political and other effects alleged to accompany it (Chapter II).

228. A shift from log exports to exports of processed timber and timber products is an element of the State's strategy for forestry. As yet it has not had a large impact as a proportion of total output, although in absolute terms the volume is increasing steadily. However, as the Mission found, a very substantial investment is building up in timber processing plants, in ports and in infrastructure and service industries. Much of this is governmental investment, especially in timber handling facilities at ports and in industrial development zones. But local timber interests are also investing heavily in new mills, the expansion and modernization of existing mills, and in further processing plants, all of which is entirely consistent with the Government's intention to lift the proportion of log output which is processed in Sarawak to 50 per cent by 2000.

229. If market outlets are not likely to constrain output, then export markets may continue to develop along current lines. The trends suggest (or are interpreted as suggesting) steadily increasing demand for processed timber as well as logs, with fluctuating though rising prices over the long run at current M\$ values.

230. Yet, strictly speaking, it does not matter, from the point of view of sustainable forest management what happens to the logs after they leave the forest, how they are utilized, where they are sold or how the proceeds are distributed, provided enough of the proceeds are returned to the forests for them to be regenerated and managed effectively on a sustainable basis. The obvious question that arises is, how much is enough? The resource flow has to be enough to cover three aspects: the competent and comprehensive planning of harvesting to satisfy the sustainable yield conditions; effective supervision of the harvesting operations; and investment in regeneration, maintenance, research and administration necessary for sustained management of the permanent forest resource.

231. However, the trends in real price terms (constant M\$ values) seem to be more downwards than rising. Hence a second factor on the market side of economic sustainability is the sustainability of income flow. In principle it is possible to dispose of a continuously increasing output into a slowly growing market by setting or accepting lower prices. There are some signs that this may have been the case with the increasing output from Sarawak. That process is however only economically sustainable while prices in the long run cover total production costs. Although the cost and price information necessary for a definitive assessment was not available, there are indications that, for Sarawak, the margin of prices over costs is narrowing. It is possible, therefore, that the present mix of log production and market strategies could be tending towards unsustainability.

232. In other words, income flow may not, in the future, be able to generate a revenue flow sufficient to guarantee the resources necessary for sustainable management. This could come about in two ways, either separately or in combination.

233. The first is if the capacity of the domestic forest industry is built up under the industrialization policy to a level greater than the yield that the permanent forest estate can sustain, after the process of forest clearing for agriculture is completed. Reduction of the log output to the sustainable capacity might automatically reduce the flow of resources back to the forest unless there were a proportional increase in royalties and charges or in supplementary flows from other sources of governmental revenue. But increased royalties or charges would then further jeopardize competitiveness in the export markets of an industry already burdened by excess capacity. The industry then would immediately become unsustainable at that capacity or, in an attempt to postpone the reduction in log supply, forest management would have to move to an unsustainable level of output. In the latter event neither the forest nor the industry would be under sustainable management. There is thus a risk in pressing the increased local processing goals too vigorously in the light of the much lower levels of sustainable yield estimated in Chapter V. For example, the 30 per cent target is already close to being achieved on outputs at the lower end of the range of sustainable yields.

234. The second way in which the revenue flow might decline enough to undermine sustainable management would be for the export markets to become insufficiently profitable for Sarawak to supply. This could happen with:-

- (1) marked increases in the cost of production of processed wood or wood products in the Sarawak industry and/or
- (2) a marked increase of supply in the main consuming countries of the types and grades of timbers which Sarawak produces in the main consuming countries.

235. The first could happen simply as a result of over-capacity in the industry. But it could also happen as the increasing output of processed wood had to be disposed of in unfavourable export markets.

236. The markets for logs and the markets for sawn timber and plywood are quite distinct, geographically as well as economically. At the moment most log exports go to Japan, Korea and Taiwan, markets with price structures heavily weighted in favour of imports of raw materials. It has been repeatedly found that restrictions on log exports have been fairly ineffective in forcing changes in that structure. This means that prices available to timber exporters for the export of processed wood into these markets would be less profitable than for the export of logs. Alternatively the processed wood would have to force its way into other markets, which could involve lower pricing and thus less profitable outlets than the log markets.

237. The second way in which the export markets could become unprofitable for Sarawak is a marked increase in supply into the timber importing markets. It may turn out that any increase in world supply, as the world's plantation resource comes on stream is absorbed by increasing demand in world markets. But it is also a possibility that plantation-grown timber will begin to over-supply the export markets for commodity grade timbers before very long. With most of Sarawak's present and

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potential output in that category it would then be impossible to count on present price structures and trends holding.

238. The present strategy seems to be based on three assumptions: that the markets for processed wood will be at least as profitable as the log markets; that they can absorb any quantity that Sarawak can or cares to produce without affecting prices; and that no other price lowering factors will come into play.

239. There are, however, enough uncertainties about this part of the strategy to warrant caution, despite the general validity of the principle that it is better for a country to export wood in processed or partly processed form than in the round. Whether that applies in any specific country ordinarily depends on at least two factors. Firstly there needs to be a domestic market big enough to carry most of the fixed costs of the processing industries. Secondly, there needs to be a labour force in surplus supply. Given this combination, the local processing industries have a chance of meeting price competition in the export markets.

240. Neither of these two necessary factors operates in Sarawak. It is doubtful if the home market could ever absorb more than a small fraction of the sustainable timber output, so that it provides too small a base to help international competitiveness. Then labour for the forest industries is in such short supply in Sarawak that, even at the present low level of processing, short term immigrants make up a large proportion of the mill floor labour force. Additions to the processing capacity are only too likely to aggravate the present labour shortage. The net gain to Sarawak of expanding local processing may therefore turn out to be illusory.

241. A third set of factors affecting income flow has, therefore, also to be considered - the complex compound of market attributes which might, loosely be labelled "quality". They include:

- (1) the form in which the products are exported;
- (2) the specifications applying in any specific market area for a given form of product;
- (3) the grades by size and/or quality which are recognized, mainly by differential prices, in the various market areas for the range of products; and
- (4) the packaging and marketing arrangement for a specific "parcel" or shipment of products.

242. Each of these can be, and is, different in different market areas and can have different price levels and relationships.

243. It is possible that, by exploiting the opportunities 'quality' thus offers, Sarawak could maintain its local processing drive, less constrained by the uncertainties discussed above.

244. An analysis of relationships between form, quality, quantity and price in export markets can, even on the limited information publicly available, be taken much further. For Sarawak it undoubtedly needs to be done, but it is not necessary to do so here in order to make three essential points:

- (1) Firstly, the market assumptions underlying present policies for forest management and forest industry development rest on a debatable view of stability in market trends and relationships.

- (2) Secondly, the interaction between the forest resource and the markets, as it bears on economic sustainability, will be very different for different combinations of raw material supply, proportion of processing and market destinations.
- (3) Thirdly, these complications do not seem to have been taken sufficiently into account in establishing policy and strategies for the forestry sector.

245. Thus the common assumption that a shift from a log export economy to processed wood exports will automatically generate the same income flow and associated benefits from a smaller log harvest cannot be taken for granted. It may; but, for that to happen, the export prices for the processed products would have to be substantially higher (in roundwood equivalent terms) than for logs, and the volume exported would have to remain proportionately unchanged in roundwood equivalent terms. That means, for sawn timber, the f.o.b. price would have to be considerably more than 2 to 2.5 times higher than the f.o.b. price of logs of the same species or species mix. In the present log market it is not. Hence, to achieve the same price relativity, market destinations would have to be changed to where the log prices are not distorted to the same extent. Then those markets would have to have the capacity to absorb additional volumes without any depression of prices. There is a chance that those necessary conditions do apply for processed wood at the moment. But whether they will continue in the longer term can be questioned.

246. It is not enough, therefore, to consider the economic sustainability of the wood-based industrial structure from the point of view of sustainable raw material supply. Even the supply side reduction to the sustained yield capacity will not assure economic viability unless the markets also allow it. The market outlook needs immediate and continuing review, before industrial investments get too far "set in concrete".

247. Such a review must also take into account other aspects of the resource side of economic sustainability. Sustained yield forest management will not simply involve a reduction in the total volume of the raw material supply. As shown in Chapter V, not only is the present level of log output unsustainable in total volume; it is equally unsustainable in terms of the present species mix and the present log size and quality mix. These could both influence the market prospects and the market destinations, and certainly the nature and magnitude of investment in industrial processing.

248. A better delineation of this market-dependent phase of economic sustainability is made even more urgent by the extent to which faulty expectations could throw the Sarawak economy and Sarawak Government revenues off course. The wood-based industrial sector has too great a weight in both for policy and investment plans, public or private, to continue to be guided by bullish assumptions about the export market prospects.

249. The Mission finds therefore that present policies, strategies and practices in respect of the timber production phase of forest utilization and management are not economically sustainable. This is certainly so from the forest resource side and possibly so also from the market side.

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250. The Mission is not able to make a reasoned assessment of the economic sustainability in terms of the non-wood products and services. The weaknesses discussed under Chapter VII do however throw considerable doubt on the economic sustainability, under present practices, of water quality and river transport systems without massive and increasing investment in such aspects as filtration, purification, bank protection and dredging facilities. Any adverse effects on fish populations could be long lasting. As far as other non-wood forest products are concerned, the evidence is conflicting and indefinite. On the whole, however, the Mission is inclined to accept as highly likely that policies as they are presently implemented are reducing the capacity of the forest resource to sustain the rural economies based on these products, unless protective measures are put in place.

251. In short, utilization and management cannot maintain the forest based economic structure at its present level and, at the same time, sustain it indefinitely into the future.

## IX. THE ASSESSMENT

### An overall view

252. The Mission's overall assessment is that sustainable forestry in Sarawak can be achieved, is being achieved in some respects but is failing in others.

253. Forest management in Sarawak is, without doubt, of a much higher standard than it is in most other tropical timber producing countries and even in some developed countries. Yet despite the quality of its forest management planning and some of its practice, the present utilization of the forests of Sarawak is not fully sustainable. Good as it is, it is not yet good enough in three important respects. The first is that the quality of management of the Permanent Forests is much superior to that of the State land forests. The Forest Department has responsibility over State land forest as the authority for felling plans for licensed logging contractors and as the revenue collecting agency. Much of the State land forest is destined for conversion and it is clearly unwise to invest in measures to ensure continuity of the forest productivity on that land.

254. Secondly, an overall assessment hides the great differences which do occur, even on the land which will be retained as forest. The quality of management in the peat swamp forests is effective in respect of sustained timber yield for all species except ramin; management planning for the Hill Dipterocarp forests is good but falls down in execution. An overall assessment, given that range of variability, must be more a subjective than an objective measurement.

255. The third qualification relates to regional differences across Sarawak, for example, in population density, pressures of shifting cultivation, remoteness and other characteristics.

256. Therefore, the most an overall assessment can say is that in some respects and in some parts management for sustainable utilization of Sarawak's forest is excellent, in some good, in some mediocre and in others poor.

### Assessment by the aspects of sustainability

257. The alternative, then, is to subdivide sustainability into its various facets and to assess the extent to which it is achieved or achievable at each of the levels of management through which policy is or is not translated in practice.

### *Strengths in Present Management*

258. Features in which forestry in Sarawak is exemplary include :

- (1) A policy which sets watershed management as one of the primary objects;
- (2) The reservation of totally protected areas for wildlife sanctuaries and national parks;
- (3) A system for tracing and controlling the movement of logs from the forests to mills or export points with its series of multiple checks and measurement accounting devices, which is outstanding by any standards.

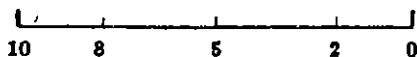
TABLE 7.1

QUALITY OF MANAGEMENT

ASPECT	TIMBER PRODUCTION			
	Mangrove	Peat Swamp	Hill Dipterocarp	
LEVEL			Terrain Class I - III	Terrain Class III - IV
<b>POLICY</b>	Provided for 8	Provided for but needs to be brought up to date 8	Provided for but needs to be brought up to date 8	Provided for but needs to be brought up to date 8
<b>STRATEGY</b>	Provided for 8	Provided for 8	Provided for 8	Provided for 8
<b>IMPLEMENTATION IN</b>				
<b>PLANS &amp; PRESCRIPTIONS</b>	Management Plans for PFE	Management Plans for PFE and Stateland	Management Plans for PFE not Stateland	Management Plans for PFE not Stateland
		PFE Stateland	PFE Stateland	PFE Stateland
(a) Silviculture		8 -	8 -	8 -
(b) Yield Control		8 -	8 -	8 -
(c) Other Products		4 -	3 -	- -
(d) Environmental		6 -	6 -	6 -
(e) Output/Revenue Accounting		10 10	10 10	- -
<b>IMPLEMENTATION IN APPLICATION</b>				
(a) Silviculture		8 -	7 -	7 -
(b) Yield Control		8 -	3 -	3 -
(c) Other Products		3 -	1 0	- -
(d) Environment		4 -	2 0	1 0
(e) Output/Revenue Accounting		10 10	10 10	10 10

Excellent Very Good Good Poor Non-existent

SCALE





FOR SUSTAINABILITY OF

BIOLOGICAL DIVERSITY & ECOLOGICAL BALANCE	CATCHMENT VALUES	ECONOMIC VIABILITY	OTHER FOREST PRODUCTS
Not specifically provided for in govt. policy but departmental policy specifically provides for & covered by legislation 8	Provided for as a primary object  10	Provided for but needs to be brought up to date  8	Provided for as a primary object but could be more specific  7
Provided for national parks & wildlife, but not specifically for ecological balance 9/2	Not specially mentioned; perhaps under strategy point iii - the environment 2	Provided for but unsustainable at present level of output. Export market assumptions possibly vulnerable. Very generous royalty rebate suggests weak foundation for processing 4	Not specifically mentioned, perhaps under strategy point ii) - common benefits; could be more specific 2
		Excellent revenue accounting system 10 Royalty gradients/levels may be inconsistent with market realities, forest management Inconsistencies between licensing system & forest management plus remote control licences to operator chain encourage short-term interest in forest operations 4	
Management plans for some NPs General prescriptions for all TPA 4	Management plans for PFE and state-land: prescriptions relating to but insufficient emphasis and too loose  PFE Stateland 4 0		Provided for but could be more emphasis & more specific 6
Insufficient staffing Insufficient mobilising of local support 4	Very limited. Insufficient staffing & low priority PFE Stateland 1 0	Excellent in revenue & output accounting 10, Insufficient staffing Inadequate logistical and government support facilitate short-term exploitation at the expense of long-term development 3	Barely applied. Insufficient staffing & low priority; lack of logistical and government support 1

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(4) Management planning for the production forest in the Permanent Forest Estate is simple but comprehensive: for, at the stage of development reached in Sarawak, the application of the area control method serves quite adequately for yield regulation.

(5) The comprehensive research data bank covering such vital management information relating to tropical forests is almost unequalled in extent and quality.

259. Some improvements could be made in these areas. The policy could be up-dated to reflect constitutional changes which have taken place since it was first adopted thirty-six years ago, as well as the changes in forest values which have become internationally significant over that time. It would, for instance, be useful to incorporate policy on national parks and wildlife protection in the formal statement of forest policy. The Totally Protected Areas are less than necessary to meet the objectives and are inadequately controlled. The growth rate and yield estimates are monitored well but the information is not used. The management prescriptions, particularly with respect to logging operations, are not tight enough or specific enough.

260. That such embellishments would improve the effectiveness of forest management in these areas does not, however, diminish the Mission's assessment that, in these fields, Sarawak's performance is admirable.

261. Which facets fall into which of the above classes and at what levels, can be quickly seen from the summary of the findings in the facet/levels matrix presented in Table 7.1.

### *Weaknesses in Present Management*

262. Unfortunately, this sound foundation for sustainable management is weak, as the matrix shows, at the level of implementation. In that sense, sustainable management can be said to be generally successful in Sarawak only in respect of the conservation, biological diversity and ecological balance values in the National Parks and Wildlife Sanctuaries, and in respect of timber production in the peat swamp forests. But even in these there are significant deficiencies, for example:

(1) For the conservation of biodiversity, a number of biologically important ecosystems are under-represented or inadequately protected. The under-representation is a weakness in strategy and hence, in principle, easily corrected. But under-protection is an instance of weakness in implementation. Unless it is corrected, increases in TPA may not be enough.

(2) In the peat swamp forests, management is achieving a sustainable yield in terms of total timber volume. Ramin, however, is being heavily overcut. Ramin is by far the most valuable timber species in this forest type and for it to be the only one whose output cannot be sustained under the present management system throws some doubt on the strategy for the peat swamp forests. Ramin, by any criterion, financial, volume, value adding, market penetration and strength, is unquestionably the mainstay of the whole wood processing industry. Unless some equivalent market outlets for other swamp forest timber species are rapidly developed, the economic sustainability of the present policies and practices for forest management and the forest industries built on them is doubtful.

(3) The present output from the Hill Dipterocarp forest is not sustainable in those species offering the best, if not the only, alternative base to ramin.

263. Effective safeguarding of the fully protected areas depends upon the human communities in the vicinity being able to survive without being forced (by economic pressures) to encroach on them. That depends, in turn, on the success of economic and social development in the State in providing alternatives. That, in turn again, depends at present to a large part on a successful and sustainable forest industry, which depends upon successful sustained yield forest management for timber production. This chain of dependencies fails if sustained yield management for timber cannot sustain the industry built up in anticipation of it. Pressure could then build up to open the TPAs for 'limited' harvesting so as to save the established industry and its dependents from economic collapse.

264. The interactions between these facets of sustainability and management are, therefore, likely to penetrate much more deeply and strongly into the State's economy than is at first apparent. In fact it is the weakest rather than the best which determine whether the whole pattern of utilization is sustainable or not. In these terms, sustainability is not yet achieved in Sarawak. Most of the elements for it are in place. Some are being put into effect at a high standard but their effect is cancelled out by the weaknesses.

265. There are two aspects of implementation in which the weaknesses are most evident and their ramifications most dangerous. They are:

- (1) The inadequate standard of catchment management, and
- (2) The overcutting in Hill Forests.

266. The first weakness is almost entirely the result of failure at the level of implementation in the field. The second results from a complicated interaction of decisions at policy and strategy levels with inadequate field implementation; but the failure of implementation being itself, to a large part, the result of the overcutting caused by an excessive total area of the annual coupes, and the rapidity with which this overcutting has developed.

267. By comparison, the gaps in policy and strategy, described earlier in the report, are much less significant. This is not to diminish their importance but it does mean that it would be unprofitable to correct them without first correcting these weaknesses.

268. In short, sustainable management cannot be realized at anywhere near the present output. The Hill Forests are, and will be to an increasing degree, the main forest resource of the State, in respect of watershed protection, conservation, social, environmental, industrial, wood and non-wood values. Failure to achieve sustainable management in the Hill Forests, therefore, puts at risk almost every object of the stated policy for sustainable use of the State's forests. Why a policy which succeeds in other forests is failing in the crucial Hill Forests becomes the question on which attention has to be focussed.

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### Reasons for the weaknesses

269. The principal reasons for the failure can be grouped into broad classes.

- (1) Under-staffing of the Forest Department.
- (2) Organizational structure and institutional arrangements through which timber licences are issued, managed and operated.

270. Although these are fairly independent factors, they do interact on one another. The concession system, for instance, operates in such a way that the supervisory load on the Department is much greater than it need be, while the lack of staff to supervise the logging operations properly allows defects in the logging methods to be perpetuated. Nevertheless they have different origins and therefore are best considered separately.

### *The Staffing Problem*

271. As everyone repeatedly pointed out, the output from the Hill Forests has climbed over the last five years from about 9 million cu m a year to about 13 million without any increase in staffing. Only if the Department had been grossly over-staffed could such an increase have been absorbed without a drastic fall in the intensity and quality of supervision in the field and of management planning and control. There is not the slightest evidence of over-staffing in the early 1980's; to the contrary, the Department seems to have been under-staffed even then.

272. The cause seems, rather, to lie in incompatibilities between the forest policies on the one hand, and the State government's revenue and development policies and the Federal government's policies for management of the national economy on the other hand. Policies, which aim simultaneously at the sustainable management of the forest resources and an increase in output from them, obviously imply minimum levels of staffing both in numbers and quality. Neither of these requirements can be met quickly or turned on and off in response to short term financial stringencies or objectives without adversely affecting the level of achievement in policies which, by their nature, require long term continuity and commitment for anything approaching satisfactory effectiveness.

273. The very long term nature of investment in forestry is one of the main arguments in favour of direct governmental administration. However, the incompatibility between the necessarily short term focus of much government activity and the long term horizon needed in forest management has also been long recognized as one of the difficulties especially under the standard departmental structure. These problems may be, and usually are, magnified under a federal structure.

274. There are four aspects to adequate staffing of the Department:-

- (1) Enough people to do the job;
- (2) People of the right quality in terms of qualifications, training, experience, dedication and diligence together;
- (c) Staff deployed where they are most needed and most effective, and
- (d) Staff supported by the material resources needed to do the job and by firm political backing.

275. Implementation on the ground will have to be given the highest priority in any programme for improvement in staffing levels. But it would be pointless to put more good people into the field, and yet leave them as dependent as they now are on the concessionaires for transport and other facilities. Foresters must be good, in adequate numbers, in the right places and also fully independent.

276. The same deficiencies in field and supervisory capacity limit the performance in the conservation areas of the Department's functions. It is greatly to the credit of the Department and staff that the standards of protection, development and supervision in National Parks and Wildlife Sanctuaries are as high as they are. In other parts of the world standards have declined much more severely under the kind of staffing constraints and rising workloads that Sarawak has suffered.

277. The unsustainability of the present level of output from the Hill Forests can also be traced to inadequate monitoring of the condition of the forests after logging and the growth rates of the residual stands. This neglect is the result of insufficient staff to maintain the existing system of permanent sample plots, to analyse the information coming from them, to translate the findings into management prescriptions and to extend the system to match the rate of logging in the permanent forest estate. The essence of sustained yield management is the checking of performance in and after harvesting. The inability to do this on a scale and with an intensity related to the rate of logging accounts, in no small measure, for the belated recognition of the unsustainability of the present level of output.

278. The same deficiencies in technical management staff are contributing to the market outlook. There is a possibility that the future markets could be drastically different from those on which present management, silviculture and industrial development strategies are predicated. No inkling of the possibility is recognizable in policy or planning. If those implications indicate a switch in production and marketing towards the high quality end of the export markets, the research capacity in Sarawak is not adequate to give either the early warning information for a change of direction or the technical and market information needed to effect that change in direction.

279. Thus, under-staffing is not simply a matter of inadequate field implementation. Indeed that inadequacy might have been less severe had the management planning capacity been equal to its task. And that deficiency might have been less marked had the research capacity been adequate to detect the discrepancies between predictions and actualities.

#### *The concession system*

280. The concession system could act against sustainability if the concessions are:

- (1) granted on a scale which has no relation to the sustainable capacity of those resources;
- (2) operated with little regard for the limits on output imposed by the size of the coupe or the diameter limits set in the management prescriptions;
- (3) operated without regard to the prohibitions on re-entry to annual coupe areas before the next felling cycle has been completed;

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- (4) operated with insufficient regard to the prescriptions in the management plans for the protection of watershed values, native customary claims on land and other natural resources, and for legally protected species; and
- (5) log transport and sales are manipulated in such a way as to defraud the State of revenues by such devices as smuggling, falsification of recording of volumes, species, grades or destinations, or transfer pricing.

281. One of the deficiencies listed above - a scale of concession allocation greatly in excess of any prudent estimate of the sustainable productive capacity of the PFE - is beyond doubt. It reflects over-optimistic estimates for growth rates, residual growing stock and the felling cycle, combined with a high current rate of liquidation of State land forest, and compounded by staffing restrictions which allowed the rate at which logging in the hill forests was accelerated to overwhelm the capacity to monitor estimates against actuality.

282. Revenue avoidance is not a problem. The system now in place is very effective in minimizing opportunities for concessionaires or operators to engage in smuggling, under-measurement, falsification of species or destinations, so as to evade, on any large scale, their liability for royalties, cess and other fees. The system cannot however detect or control transfer pricing. Anecdotal accounts suggest that transfer pricing does happen and this is the subject of criticism in some quarters. But this is a standard technique of multinational corporate strategy, and the Mission saw no sign that any loss of government revenue, which might be caused by this practice, was leading to insufficient funds being reinvested in forestry. In fact the prevailing staff shortages are not caused by financial stringency.

283. In Protected Forests and Forest Reserves we saw no sign of breaches of the prescriptions which limit operations to the annual coupe or to the specified diameter classes, or which prohibit re-entry after closure of the coupes. Instances of re-entry brought to the Mission's notice were found to apply to State land forest. There is, however, plenty of evidence that the requirements aimed at safeguarding watersheds are neither adhered to nor strongly supervised.

284. Other features of the concession system are equally destructive of sustainability objectives. One is the structure of the concession hierarchy whereby the licensee, i.e. the concession holder or concessionaire, sub-contracts his rights to a second party who in turn sub-contracts the operation to a third party who employs the people who actually do the logging on the basis of payment by output. Strictly speaking, only the licensee is responsible for carrying out the terms of the licence. However the licensee is often so far removed from the scene of the operations that supervision has little chance of being effective. In any case, the dependence of local communities on the operations could make strict supervision politically awkward.

285. This is no doubt an easy system to enable operators to keep logging costs down. That is its only virtue, and it can turn out to be a very expensive way for the economy and for society as a whole. The dangers inherent in remote control of the concession system were pointed out in the early days of the movement of logging into the hill forest. They have been confirmed and they have also been ignored, largely no doubt because of the inadequate and inadequately supported field supervisory staff.

286. A second weakness in the structure of the concession system is the lack of synchronization between the length of the licence period and the forest management cycle. The practice of issuing licences for shorter than the felling cycles, without any guarantee of renewal, is not helpful to long term management. It tends to reward those concessionaires and operators who plan their operations so as to get the maximum possible output with the minimum possible fixed investment in plant, roading, training, safety or infrastructure regardless of the effects on the viability of the concession over the remaining years of the felling cycle. And it penalizes those who attempt to average out the cost of logging over the concession area as a whole.

287. At the same time, short-term licences are a strong disincentive to licensees to invest in timber processing. With an assured life of the timber resource considerably less than the necessary amortization period processing becomes an ultra-risky investment. The policy for more domestic processing is working, it seems, because of a very generous rebate on royalties from the government side and a complex system of cross-holdings, cross-subsidizations and financial arrangement on the industry's part.

288. These dangers were also pointed out in the early days of opening up the hill forests, but they have been disregarded. Whatever the justification for the procedure on administrative flexibility, or less reputable grounds, the economy and society as a whole are having to pay a high price for the convenience.

289. The concession system, in effect tends more to frustrate than to facilitate the sustainable management of even the Permanent Forest Estate. This result may be accidental, but that is the way the system works.

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## RECOMMENDATIONS

### A. FOR ACTION BY THE GOVERNMENTS OF SARAWAK AND MALAYSIA

The Mission recognizes that there are many admirable features in Sarawak forestry. It believes that the sustainable management of the forests of Sarawak is being partly achieved, but full achievement depends on immediate action in three aspects:

- (1) Firstly, the staff of the Forest Department must be comprehensively strengthened.
- (2) Secondly, the annual rate of harvesting must be phased down to a figure that corresponds to the prospective sustainable yield, i.e., for a Permanent Forest Estate of 4.5 million hectares of land at slopes of less than 60 per cent, of which a substantial portion is silviculturally treated, plus State land forest not allocated to other uses within the same slope limitation, about 9.2M m<sup>3</sup> per annum.
- (3) Thirdly, the standards of catchment protection in the Hill Dipterocarp timber production forests must be improved.

#### Recommendation A1 - Strengthening of the Forest Department

Increased staffing of the State Forest Department is essential if the economic potential of the forest resources of Sarawak, its forest industries and other forest values are to be maintained. Without strengthening, the commendable Forest Policy adopted by the State Government cannot succeed, nor can the other deficiencies identified by the Mission be properly remedied.

To effect these fundamental improvements, immediate strengthening is essential in two fields, control and planning.

- (a) In control. To enable effective implementation of all aspects of harvesting, forest management, and environmental protection, urgent attention needs to be directed to control on the ground: to ensure strict adherence to the conditions of concessions, including the prescriptions in management and engineering plans; to ensure high standards in road building and harvesting operations; to prevent illegal encroachment into the Permanent Forest Estate and into Totally Protected Areas; and to suppress illegal hunting.
- (b) In planning. To develop a basic plan for the long term sustainable management of the productive forest resources of Sarawak and the development of its forest industries, based on a reliable assessment of the forest resources in the State and of the long-range demand and supply outlook for forest products.

These measures should be supplemented by strengthening in research, education and training, and public relations.

(c) In research. *Silviculture:* to make full use of existing research data and to extend research into a more fully representative series of sites in the Hill Dipterocarp forest. *Harvesting:* to investigate alternative methods of harvesting that are more efficient and cause less environmental damage. *National Parks and Wildlife:* to ensure that the coverage of ecosystems is as complete as possible; and to investigate the ecology of some of the key plant and animal species. *Catchment studies:* to investigate ways to reduce erosion, and the adverse effects of logging operations on water quantity and quality, and on fisheries.

(d) In education and training. To expand education and training in forestry, timber harvesting, the forest industries and wildlife management. This should be carried out in collaboration with STIDC, the universities and the private sector. It is recommended that a *model logging concession* should be established as one of the training facilities. More and better training should be available and mandatory for people at all levels, including chain saw operators, and skidder and tractor drivers.

(e) In public relations. To improve mutual communication between the Forest Department and the public. An assured future for sustainable forest management depends on more attention being paid to the views and participation of local communities, and on sensitive explanations to the public and to local communities about the local as well as the broader advantages to be derived from good forest management for timber production and the national and local benefits of National Parks and Wildlife Sanctuaries.

**Recommendation A2 - Reducing the total area of the annual cut**

This is the first of the two fields in which performance falls far short of the objectives set in the Forest Policy. The means by which the recommended reduction in harvesting is brought about will require careful consideration by the planning staff of the Department, so that any adverse effects on forest industries are minimized. Measures could include: using the harvesting of State land forests as a buffer; and trading off longer concessions for smaller annual coupes. These measures must be accompanied by intensified silvicultural management and by the rapid expansion of the PFE to its final size by the immediate gazetting of as much as possible of State land forest. A Commissioner should be appointed and a Unit established, specifically charged with accelerating and completing the process of gazettment, including that of the additional recommended TPAs.

(Various options for harvesting intensity are illustrated in Chapter V of the Report).

**Recommendation A3 - The improvement of the standards of catchment protection in the Hill Dipterocarp timber production forests.**

This is the second field in which implementation falls furthest behind the objectives set in the Forest Policy. Management must be improved by more precise prescriptions based on research, by withdrawal of logging from critical areas and by strict control of the conditions of licences.

(Other ways in which management should be strengthened are contained in Chapters V-IX of the Report).

**B. FOR INTERNATIONAL COOPERATION AND ASSISTANCE**

The Mission found a strongly demonstrated commitment, by the Governments of both Malaysia and Sarawak to sustainable management and conservation for Sarawak. In terms of assistance and cooperation, the Mission recommends the following to the ITTO and the international donor community:

**Recommendation B1 - Manpower development**

To assist the Government of Sarawak in establishing and implementing a continuing programme of manpower development so as to:

- (a) deploy and apply the strengthened staff fully and effectively with the minimum delay;
- (b) accelerate the rate at which staff acquire experience in both general management and specialized fields;
- (c) improve the planning capacity of the Government for the development and review of the basic plan for the sector, and for providing the necessary supporting information; and
- (d) raise the standards of technical and management skills at all levels in the logging and timber industries.

**Recommendation B2 - Long-term outlook**

To assist Sarawak in the preparation of the outlooks for long-term demand and supply which must underlie the initial basic plan for the sector under Recommendation A1 (b) above.

**Recommendation B3 - International assistance**

To raise, if the Government feels it necessary, additional manpower from international sources to assist the Sarawak Forest Department during the transitional phase and in the implementation of Recommendations A1-3.



**APPENDIX I**

**Meetings held by the Mission**

**VISIT I: 27 November - 8 December 1989**

**Monday 27 November 1989**

- Ministry of Primary Industries, Kuala Lumpur  
Datuk Alias bin Ali, Deputy Minister for Primary Industries
  
- Forest Research Institute of Malaysia (FRIM), Kuala Lumpur  
Mohd Yusof Salleh, Deputy Secretary-General, Ministry of Primary Industries  
Wan Razali, Director of Forestry

**Presentations by:**

1. Datuk Othman Manan, Deputy Director-General, Forestry Department, Kuala Lumpur
2. Datuk Baharuddin, Director-General, Malaysian Timber Industry Board
3. Datuk Dr Salleh Mohd Nor, Director General, FRIM

- Prime Minister's Office  
Datuk Seri Dr Mahathir Mohamed, Prime Minister of Malaysia
  
- Economic Planning Unit of National Development (EPU), KL  
Datuk Mohd Sheriff Kassim, Director General, EPU, KL

**Presentation by Dr Abdul Rahman**

**Tuesday 28 November 1989**

- Visit to Sarawak Timber Museum, Kuching  
Mr Abdillah Haji Abdulrahim, General Manager, STIDC
  
- Briefing by Chief Minister for Sarawak, Kuching  
Datuk Patinggi Tan Sri Haji Abdul Taib Mahmud

**Wednesday 29 November 1989**

- State Planning Unit (SPU), Kuching  
Leo Chai, Director of Forests  
Hamid Bugo, Permanent Secretary for Ministry of Planning & Natural Resources

**Presentations by:**

1. Teo Ting Bee, Permanent Assistant Secretary, SPU
2. Ambrose Foo, Director of Land & Survey Department

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- Visit to Semengoh Forest Training School  
Mengga Mikui, Chief Instructor, FTS

**Briefings by:**

Botanical Research Centre: Abang Moktar Pawzan

Forest Arboretum: Rena George

Wildlife Rehabilitation Centre: Francis Gombek, David Labang

**Thursday 30 November 1989**

- Forest Department, Kuching  
Leo Chai, Director of Forests

**Also present:**

Hamid Bugo, Permanent Secretary for Ministry of Planning & Natural Resources

Dato M Jabil, Co-ordinator

Abang Haji Kassim, Deputy Director, Forest Department

Haji Mohd Sinon Mudzakir, Ministry of Primary Industries, KL

Dato Lau Hui Kang, Chairman, Sarawak Timber Association (STA)

Barney Chan, STA

- Sarawak Timber Industry Development Corporation, Kuching  
Abdillah Haji Abdulrahim, General Manager, STIDC

**Also present:**

Hamid Bugo, Permanent Secretary for Ministry of Planning & Natural Resources

Dato Lau Hui Kang, Chairman, STA

Leo Chai, Director of Forests

**Friday 1 December 1989**

- Informal breakfast meeting, Kuching Hilton  
Hamid Bugo, Permanent Secretary for Ministry of Planning & Natural Resources

- Visit to Sabal Agroforestry Station

**Briefings by:**

Joseph Jawa, Executive Forester

Orvil Morningstar,

Nancy Knight

Site visits to: cows/goats area  
fish pond  
deer area  
cocoa/durian area

- Mayang Tea Plantation, Serian  
Michael D Alwis, Project Manager

- **Informal Meeting in Hilton Hotel, Kuching**

**The Hon Dr James Masing, State Representative for Upper Rajang, and Political Secretary to Minister, KL**

**Ding Seling, President, Orang Ulu National Association, Baram District representative  
Philip Ngau, former Head of National Parks & Wildlife, Enforcement Officer, Forest Department**

**David Labang, Wildlife Officer, National Parks & Wildlife Office**

**Lucy Labang, Department of Education**

**Dr Elizabeth Bennett, zoologist, formerly WWF Malaysia, involved with development of nature protection zones**

**Lian Labang, Sarawak Museum**

**Jayl Langub, anthropologist, State Planning Unit**

**Sue Langub, teacher**

**Saturday 2 December 1989**

- **Kuching Timber Industries Berhad, Pending Industrial Estate  
Datuk Lau Hui Kang, Managing Director, (Chairman STA)**

**Briefing by Stephen Lau, General Manager**

- **Bako National Park  
Ngui Siew Kong, Administrative Officer of National Parks of Sarawak**

**Briefing by S K Wong, National Parks Officer, Southern Region**

**Monday 4 December 1989**

- **Naman Forest Reserve, Sibuluan  
Ernest Chai, State Silviculturalist**

- **Visit to Tuai Rumah Ruang Longhouse**

- **Tetsan Timber Mill, Upper Labang Industrial Estate, Sibuluan  
Loh Wok Seng, Managing Director**

**Briefing by Wong Siong King, Factory Manager**

- **Rimbunan Hijau Plywood Mill  
David Tiong Cheong Ung, Marketing Director  
Raymond Lau, Factory Manager**

**Briefing by Tiong Cheong Hu, Production Director**

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**Tuesday 5 December 1989**

- **Bintulu Lumber Development Sdn Bhd, Suai Complex Forest Management Unit, Miri region  
Kong Shiaw Kian, Manager**

**Briefing by Lau Hiang Su, Operations Manager  
Ali Yusop, Section Forest Officer**

**Site visit to Coupe 6**

**Also present:  
Leo Chai, Director of Forests**

**Wednesday 6 December 1989**

**Tour around BLD Saw Mill**

- **Gunung Mulu National Park**

**Helicopter tour of Park**

**Briefings by:**

1. **Oswald Braken, National Parks Officer, Northern Region**
2. **Mike Meredith, Development Officer of Mulu National Park**
3. **Gary Tay, Divisional Development Officer**

**Thursday 7 December 1989**

**Visit Clearwater Cave  
Mike Meredith**

**Visit Batu Bungan Longhouse**

- **Apo Palutan Forest Management Unit  
Philip Ho, Forest Manager**

**Briefing by Raulito Tacugua, Senior Forester**

**Site visits to: - Coupe 6  
- Coupe 14**



Visit II: Monday 12 February - Friday 23 February 1990

**Monday 12 February 1990**

- Forest Department, Kuching  
Leo Chai, Director of Forests

Also present:

Dato M Jabil

Philip Ngau Jalong, Assistant Director, Protection

Abang Haji Kassim Morshidi, Deputy Director of Forests

Ngui Siew Kong, National Parks & Wildlife Officer

Cheong Ek Choon, Assistant Director of Forests

Tan Yaw Kang, Assistant Director of Forests

Lee Hua Seng, Assistant Director of Forests

John Cheng, Assistant Director of Forests

- Informal Meeting with Forest Education Department

Briefings by:

1. Dr Elizabeth Bennett

2. Rambli Ahmad

3. Melvin Gumuh

Also present:

Charles Evans, WWF Malaysia

**Tuesday 13 February 1990**

- Dialogue with Orang Ulu National Association Sarawak  
Sarawak Museum, Kuching

Ding Seling, President, OUNA

William Ghani Bina, President, OUNA Youth Section

Lay Jau Uyo, CEC Committee, OUNA

Richard Padan Pengiran, OUNA

Baru Bian, Messrs Anthony Ting & Co

Philip Ngau, OUNA

Also present:

Dato M Jabil

Puan Adawiah Zakaria, Under-Secretary, Ministry of Primary Industries, KL

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- Dialogue with Sarawak Timber Association  
Sarawak Museum, Kuching

Datuk Lau Hui Kang, Chairman, STA  
Lau Swee Nguong, Chairman, Sawmilling Sub-Committee  
Dr Philip Ling, Honorary Secretary, STA  
Henry Lau, Chairman, Mouldings & Furniture Committee  
Yong Nyan Siong, Council Member  
Chay Tia Cheong, Council Member  
Philip Choo, Honorary Treasurer, STA

Also present:

Dato M Jabil

Puan Adawiah Zakaria, Under-Secretary, Ministry of Primary Industries, KL

- Briefing and Tour of Timber Research & Technical Training Centre, Forest Department, Kuching  
(Group 2)

John Cheng, Assistant Director (Utilisation)  
Cheong Ek Choon, Assistant Director (Operations)  
Ling Wang Choon, Senior Executive Officer  
Nigel Lim, Chemist  
Wong Ting Chung, Engineer  
Ting King Bok, Engineer  
Alik Duju, Forester  
James Dawos, Forester

- National Parks and Wildlife Office, Forest Department  
(Group 1 & 3)

Briefings by:

1. Abang Haji Kassim, Deputy Director
2. Francis Gombek, Executive Forester, NPWO

Also present:

Dato M Jabil

Melvin Gumuh, Forest Department Education

Ngui Siew Kong, National Parks & Wildlife Officer

**Wednesday 14 February 1990**

- Briefing and Tours of:
  1. Rancowood Industries Sdn Bhd (furniture manufacturing) - Vincent Lau
  2. Borneo Lumber Company (sawmill) - Mr Ting
  3. Kuching Veneer Sdn Bhd (plywood mill) - Mr Peter Ling(Group 2)
- Gunong Gading National Park and Samunsan Wildlife Sanctuary  
(Group 3)

**Thursday 15 February 1990**

- **Lundu District Council Office  
(Groups 1 & 3)**

**Micheal Saweng, District Officer  
Chang Pat Foh, Ministry of Resource Planning  
Ngu Siew Kong, National Park & Wildlife Officer  
Haji Saidi bin Wahie, Section Forest Officer, Kuching  
Dato M Jabil**

- **Dialogue with Community Leaders, Lundu District  
(Groups 1 & 3)**

**Pemanca Suhaili Jantan, Rambungan  
Penghulu Mos Sulong, Sematan  
Penghulu Goh Meng Joey, Sematan  
Penghulu Mina ak Kalum, Pueh  
Penghulu Nyonggiem, Selampit  
Penghulu Kalong, Sg. Lundu  
Penghulu Adi Hol, Stunggang  
Penghulu Suut, Sileng**

- **Sejingkat Industrial Park - Haji Talip Zolpilip,  
Permanent Secretary, Ministry of Industrial Development**
- **Sejingkat Log Export Point - Kho Seng Yaw, Section Forest Office, Kuching**
- **Kuching Port - Duke Shim, General Manager,  
Kuching Port Authority  
(Group 2)**

**Friday 16 February 1990**

- **Sabal Forest Reserve  
(Groups 1, 2 & 3)**
- **Kubah Wildlife Reserve  
(Lord Cranbrook)**

**Saturday 17 February 1990**

- **Mudan-Retus Forest Management Unit  
Ngu Ming Kui, Manager**

**Sunday 18 February 1990**

- **Rejang Mangrove Forest Reserve  
(Group 1)**

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- **Tanjong Manis Log Export Point - Simon Saudi, Sub-Section Forest Office, Sarikei  
Tanjong Manis Timber Industrial Estate - Len Salleh, STIDC  
(Group 2)**
  
- **Sarawak Consumer Association (Sibu) & Institute for Community Education  
(Group 3)**

**Wong Meng Chuo, Director, Institute for Community Education  
John Phua, Institute for Community Education  
Doreen Wong, Institute for Community Education  
Clement Lim, Consumer Association of Sarawak (Sibu branch)**

**Also present:**

**Dato M Jabil**

**Cheong Ek Choon, Assistant Director of Forests**

**Dania Godeb ak Goyog, Forest Department**

**Monday 19 February 1990**

- **Forest Department Research Plots, Bintulu  
(Group 1)**
  
- **Sarawak Company, Selalang (plywood mill & sawmill) - Hii Yu Sing**
- **Durin Log Pond - Roland Renggie, Section Forest Office, Sibu**
- **Tak Hin Rattan Industries Sdn Bhd, Sibu - Peter Pang  
(Group 2)**
  
- **Dialogue with Community Leaders, Kapit District  
(Group 3)**

**Patrick Rigeo Nuek, Resident, Kapit District  
S T Ting, Divisional Forest Officer, Kapit  
Cheong Ek Choon, Assistant Director of Forests  
W Bale, SAO (interpreter)**

**Bujang Ladi, Acting DO, Kapit  
Datuk Temonggong Jinggup, Kapit  
Sinau ak Entap, Ngelambong, Sut  
Jack Bidai, Rh. Jua, Kapit  
Cllr. David Manggom, Kapit  
Peng. Silo ak Junting  
Peng. Meson ak Baring  
T.R. Sujang ak Enlaion, Rh. Sujang, Sg. Pila  
Peng. Bujang, Ng Serian  
Peng. Esit ak Maro, Rh. Maro, Ng Merit  
Peng. Nau ak Badut, Rh. Along, Ng Muray  
Ayom ak Munggo, Rh. Sebuang Bawai  
T.R. Geoffrey Usa Baling, DO, Belaga**

T.R. Jack P Langat, Belaga  
Umek Jeno, Secretary, OUNA, Belaga  
T.R. Nicholas Mering, Belaga  
Temenggong Chua Sym Mui, Ketua Masyarakat, Kapit Town  
Pemanca Sempang, Song  
Stephen Ngii Ambang, Song  
Peng. Gudang ak Grawing, Song  
Stephen Ayot, Song  
Peter Manding, Pem. Pejabat Daerah, Song

**Tuesday 20 February 1990**

- Tanjong Taroh Log Pond - Roland Renggie, Section Forest Office, Sibul
- Tatau River Log Transportation - Safuan Ahmad, Section Forest Office, Bintulu (Group 2)
  
- Rajang Wood Sdn Bhd, Kapit-Mengiong Forest Management Unit  
Khiu Siong Hii, Forest Manager  
(Group 3)

**Wednesday 21 February 1990**

- Forest Research Officers, Sibul  
(Group 1)
  
- Bintulu Development Authority Office  
Kemena Timber Processing Zone - Abng Helmi, General Manager, BDA  
Bintulu Port Authority, - Andrew Mat Rezza, Secretary, BPA  
(Group 2)
  
- Batang Baleh Forest Enterprises Sdn Bhd  
David E Manjah, Forest Operations Manager  
Ross Ibbotson, Managing Director  
(Group 3)

**Thursday 22 February 1990**

- Hock Lee Sawmill Sdn Bhd - Yek Siew Liong  
Kemena River - Safuan Ahmad, Section Forest Office, Bintulu  
(Group 2)
  
- Batang Baleh Forest Enterprises Sdn Bhd  
Ross Ibbotson, Managing Director  
(Group 3)

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**Friday 23 February 1990**

- **Forest Department**

Leo Chai, Director, Forest Department  
James Mamit, Forest Department  
Ngui Siew Kong, National Park & Wildlife Officer  
Philip Ngau Jalong, Ag. Assistant Director, Protection  
Abang Hj. Kassim Morshidi, Deputy Director of Forests  
Tan Yaw Kang, Assistant Director of Forests  
Lee Hua Seng, Assistant Director of Forests  
John Cheng, Assistant Director Forests  
Danny Chua, Engineer, Forest Department  
Cheong Ek Choon, Assistant Director of Forests  
Dato M Jabil  
Mohd Yusof Salleh, Deputy Secretary General, Ministry of Primary Industries, KL

**Visit III: Friday 16 March - Wednesday 28 March 1990**

**Friday 16 March 1990**

- **Ministry of Primary Industries, Kuala Lumpur**  
Datuk Seri Dr Lim Keng Yaik, Minister for Primary Industries

Also present:

Tan Sri K C Wong, Secretary-General, Ministry of Primary Industries, KL  
Dato Mohd Darus bin Mahmud, Director-General of Forestry, Peninsular Malaysia  
Mohd Yusof bin Salleh, Deputy Secretary-General, Ministry of Primary Industries, KL  
Dato Baharuddin bin Haji Ghazalli, Director-General, MTIB  
Puan Adawiah Zakaria, Under-Secretary, Ministry of Primary Industries  
Dato M Jabil, Co-ordinator  
Dr Francis Ng Say Pink

**Monday 19 March 1990**

- **Mission Meeting**

- **Meeting with Forest Department, Kuching**  
Leo Chai, Director of Forests  
Dato M Jabil  
Cheong Ek Choon, Assistant Director  
Bahari bin Mohd Atan, Ministry of Primary Industries, KL

- Meeting with the Resident, Miri  
Haji Abu Kassim, Resident, Miri  
  
Also present  
Richard Pahang, District Officer, Miri  
Chong Ted Tsiung, Divisional Development Officer, Miri  
Liew Tchin Fah, Forest Department  
Bahari bin Mohd Atan, Ministry of Primary Industries, KL  
Dato M Jabil, Co-ordinator  
Cheong Ek Choon, Assistant Director of Forests
  
- Informal Dialogue with Baram Self-Development Association  
  
Marcus C Juing, Secretary, BASDA  
Dr Lester Mason, Scientific Officer, BASDA  
Daniel Dana  
Banyoi Embang  
Michael Emang  
John Barah, BASDA
  
- Informal Dialogue with Miri Residents  
  
Christopher Sawan, Barrister  
Peter Kallang, Orang Ulu Association, Miri  
James Gau, Orang Ulu Association, Miri  
Puntang Balla  
Alexander Isut  
Chang Yi, Teacher  
Josephine Mawat, Home Administrator

**Tuesday 20 March 1990**

- Limbang Valley Stateland Forest Management Unit
  
- Informal Dialogue with Penan & Kelabit, Limbang  
  
Anderson Matang (Interpreter)  
Teum Pang  
Balan Iboh  
Buri Tawie  
Miri Pulu  
Jangin Taibilong  
Musing Aweng  
Aweng Tuvai  
Senan  
Agau Iboh  
Maron Tulu  
Bala Pelaba  
Panai  
Rivet Asimura

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Kayan Hik  
Abu Wee  
Libai  
Ale  
King Brim  
Abau  
Tipong Rigong  
Tama Kew  
Uyan Ngang  
Sot Anui  
Ngerua  
Malong Uri  
Imang Disir  
Lejo Rigong

**Wednesday 21 March**

- Meeting with Resident, Limbang  
Waslie Rambli, Resident, Limbang
  
- Dialogue with Community Leaders, Limbang  
  
Raslie Saharan, District Officer, Limbang  
Cheong Ek Choon, Assistant Director, Forest Department  
Dato M Jabil, Co-ordinator  
Bahari bin Mohd Atan, Ministry of Primary Industries  
Liew Tchin Fah, Forest Department  
  
Tem. Selutan Arew (Lung Bawang)  
Pem. Amat bin Tuah (Kadayan)  
Peng. Ibrahim B Abdrahman (Lawas)  
Peng. William Giso Agong (Lun Bawang)  
Peng. Narudin Metusup (Puhang)  
Peng. Langub (L. Semadoh)  
T.K. Latip bin Sabli  
Peng. Liang (Long Sukau)  
Pem. Dolrazak b. Jumat (Lawas)  
Pem. Jarom (Iban)  
T.R. Siran  
Lewat (Long Napir)  
T.K. Leju (Penan, Long Napir)  
T.K. Tamin (Penan)  
Abau (Ketadan, Penan)  
Petau (Penan)  
Moi (L. Tegan)
  
- Informal Dialogue with Sahabat Alam Malaysia  
Harrisson Ngau  
Thomas Jalong  
Weslie



Thursday 22 March

- District Office, Marudi  
Jefferi Usee Iboh, District Officer, Baram

Also present:

Ambrose Laban Jamba, Assistant District Officer, Baram  
Haji Abu Kassim, Resident, Miri  
David Kala, SAO

- Dialogue with Community Leaders & General Public, Marudi

Hj. Abu Kassim, Resident, Miri  
Jefferi Usee Iboh, District Officer, Baram  
Ambrose Laban Jamba, Assistant District Officer, Baram  
Ngieng Ping Lah, Baram  
Vincent Balang Ajie, Baram  
Ting Jack Sing, Marudi  
Allan Yong, Marudi  
Pem. Dr Kamalak Kanan, Marudi  
Wan Malang, Baram  
Chief Inspector William Nanggai, Ketua Polis Marudi  
Musa Baie, Marudi  
Jusos Kipa, Marudi  
Alias Othman, Baram  
Alex Lian, Long Lama  
Syed Ramli,  
David Kala, Marudi  
Julaihi Kadir, Marudi  
Mataip Sayu, Marudi  
Inspector Saifuddin b. Mohd Nasir  
Ladis Pandin  
Stenly  
Nygong b Bata

Tem. Baya Malap, Long Terawan  
Pem. Ding Wan, Long Laput  
Peng. Hj. Hussein b. Omar, Kampong Narum  
Peng. Ching Han Kiat, Marudi  
Peng. Ngimat Ayu, Bario  
Peng. Jame Paya Ding, Long Na'ah  
Peng. Laing Apoi, Long Terawan  
Pem. Eddie Muntai  
Peng. Ebak ak. Jambai, Sg. Selpin, Bakong  
Peng. Bilong Kulleh, Long Moh  
Peng. James Lalo Kaso, Long Lamai  
Pem. Madap Balan, Long Loyang  
Peng. Lee Kee Yan, Long Lama  
Peng. Tangah Subai, Long Jegan

*The Promotion of Sustainable Forest Management*

Balang, Long Seridan  
T.R. Ajie, Ulu Linei  
WTR Agai, Long Jegan  
T.R. Long Takong, Long Takong  
T.R. Christopher Pusu You, Long Palo Tutoh  
T.R. Pengnang, Sebukut Bakong  
W.T.R. Ria, Lubok Mulong  
W.T.R. Itam ak. Amban, Logan Tungga

Harrisson Ngau  
Thomas Jalong  
Bally Onggie

P.T.S. Mohamad Ansari,  
Encik Henry Colin Belawing

Ismail Lumbor  
Dan Mahrof  
Lisang Nyurang  
Josly Jock  
Ibrahim Abdul Rashid

Ajeng Kiew, Long Belok  
T.R. Anyie Siat, Long Latin  
Edward Dungan Along, Bakong  
Lawai Usat, Long Banyok  
Joshua Lawai Lawing, Long Palo  
Enya, Bakong

- Visit and stay at Long Teru  
Ngui Siew Kong, National Parks & Wildlife Officer  
Oswald Braken, National Parks Officer, Northern Region

**Friday 23 March**

- Visit to Logan Bunut

**Saturday 24 March**

- Mission Meeting

**Monday 26 March**

- Meeting with SALCRA/SPU/LCDA

Hatta Sholhee, Deputy Director, Department of Development  
Jayl Langub, Principal Assistant Secretary, SPU  
Ubaidillah Abd Latip, Principal Assistant Secretary, SPU  
Benjamin Dublin, LCDA  
Robert Econe, Assistant Manager (Agriculture)  
William Jitab, Deputy General Manager, SALCRA  
Cheong Ek Choon, Assistant Director, Forest Department  
James Dawos Mamit, Forest Department  
Dato M Jabil, Co-ordinator  
Ose Murang, Senior Agricultural Officer, LCDA  
Liaw Soon Eng, Principal Assistant Secretary, Ministry of Land Development  
Philip Foster, Planning Officer, SALCRA  
James Entika, Administration Manager, SALCRA  
Mawi Taip, Public Relations Office  
Rabyah Mohd Mansor, Assistant Secretary, Ministry of Resource Planning

**Tuesday 27 March**

- World Wide Fund for Nature, Malaysia  
Dr Mike Kavanagh

**Wednesday 28 March**

- Meeting with Forest Department  
Leo Chai, Director of Forests  
Mohd Yusof Salleh, Deputy Secretary General, Ministry of Primary Industries, KL  
Dato M Jabil, Co-ordinator  
Cheong Ek Choon, Assistant Director of Forests  
James Mamit, Forest Department

- Chief Minister for Sarawak  
Datuk Pattingi Tan Seri Haji Taib Mahmud

Also present:  
Leo Chai, Director of Forests,  
Dato M Jabil, Co-ordinator



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The following table shows the results of the regression analysis for the dependent variable 'Sales' (in millions of dollars) against the independent variables 'Advertising' (in millions of dollars), 'Price' (in dollars), and 'Promotion' (in millions of dollars). The regression equation is:

$$\text{Sales} = 1.2 \text{ Advertising} - 0.000001 \text{ Price} + 0.8 \text{ Promotion} + 100$$

The regression coefficients are: Advertising: 1.2, Price: -0.000001, Promotion: 0.8, and the constant term is 100. The R-squared value is 0.85, indicating that 85% of the variation in Sales is explained by the independent variables. The F-statistic is 12.5, and the p-value is 0.0001, indicating that the regression model is statistically significant.

The regression analysis shows that Advertising and Promotion have a positive impact on Sales, while Price has a negative impact. The regression coefficients are: Advertising: 1.2, Price: -0.000001, Promotion: 0.8, and the constant term is 100. The R-squared value is 0.85, indicating that 85% of the variation in Sales is explained by the independent variables. The F-statistic is 12.5, and the p-value is 0.0001, indicating that the regression model is statistically significant.

Monday 27 November 1989 - Kuala Lumpur

1. **FOREST RESEARCH INSTITUTE OF MALAYSIA**

1. **Datuk Othman Manan, Deputy Director-General, Forestry Department, Kuala Lumpur**

Land is a state matter in Malaysia and the state has jurisdiction to formulate laws to administer forest areas. The National Forestry Council was set up to administer forestry in Peninsular Malaysia to determine policies and approve actions to be taken on Forestry matters. It is up to the state governments to adopt these policies in the various states.

The National Forestry Plan has now been adopted, incorporating the aspects of forest management and development. There is a total 6.19M ha of forested land, of which 90% is represented by dipterocarp forest, the rest is swamp (0.46M ha) and mangrove (0.11M ha). In line with the National Parks policy and the policy of sustained yield management, an area of 4.75M ha has been set aside to form the Permanent Forest Estate, i.e. forest to be managed permanently under sustained yield. This is divided into 2 areas, production forest and protection forest. Of the 2.85M ha of production forest, 2.29M ha has already been logged, and will be re-logged in future, and the rest has come under silvicultural treatment.

a) **Management of the Permanent Forest Estate**

The states' forest departments are responsible for management of the PFE and there are about 6,000 people working in state and federal headquarters. The management system up to 1950's adopted a policy where the trees exceeding 45cm diameter are removed and focus of regeneration of the dipterocarp forest was on seedlings and saplings. Although this was very successful in the lowland forest, on hills it was unsuitable because of the steep slopes and danger of damage to the environment so the emphasis has now turned to the advanced growth, rather than seedlings, and now another system called the 'selective management system' has been formulated whereby trees of non-dipterocarp species are felled to minimum of 45cm and dipterocarps to a minimum of 50cm. The rest of the stand remains with at least 32 trees per hectare with diameter above 35cm. This leaves less disturbance to the environment and the forest again comes into production in 25-30 years. The prerequisite of this system is the pre-felling inventory which determines the value of the stand.

b) **Development Projects**

After logging: silvicultural treatment of loggable forest in order to give better growth to the residual stand; planting of indigenous species is done in lines in areas where there is not enough regeneration of commercial species; mangrove forest planting (800ha p.a.); planting of rattan in permanent forest and also under rubber.

Plantation projects: started in early 50's when teak was planted in northern part of Peninsular Malaysia and later in 60's about 6,000ha of pines were planted. Since 1982 planting of fast growth species with rotation cycles of 15 years, such as Acacia mangium, Gmelina arborea, eucalyptus and Albizia falcataria has been embarked upon. The target for this project is around 180,000ha with the objective of meeting the expected shortfall in production timber in mid 1990's.

## *The Promotion of Sustainable Forest Management*

**Recreation forests:** 53 areas of natural beauty have already been established with facilities for picnicking, walks along jungle tracks etc. Most popular national parks receive up to 100,000 visitors in one year.

**Urban forestry:** policy of roadside planting of trees. To date one million seedlings have been given to local authorities.

**Social forestry:** forest areas around villages have been planted with fruit trees for local population.

**Harvesting of annual coup:** there are 71,000ha under sustained yield in PFE. In addition still logging forest areas outside PFE which have been allocated for other developments and some of which will be planted with rubber and oil palm. The production of timber averaged during the last 10 years is 9.5M cubic metres p.a.

**Protection forests:** established virgin jungle reserves established totalling 19,000 ha in over 8 (187) areas, all of which are found in Peninsular Malaysia. In addition to this, there is 744,000ha of wildlife reserve.

**Training:** universities, forestry school and logging school all provide training for logging workers and forest surveying.

**Industrial development:** increasingly active since 1960's. There are now about 670 sawmills, plywood mills etc. with a variety of further projects, some under regional cooperation and other international projects.

### **Further Points:**

With regard to logged-over forest, Dr Osman explained that the distinction between reloggable and non-reloggable forest is as follows: the reloggable forest is that which was logged in 1950s when logging was selective, a lot of which now has trees exceeding 45cm diameter and therefore can be logged again. Non-reloggable forest is that which does not contain such trees and so growth is enhanced with silvicultural treatment. Non-reloggable forests will be ready in the future, under a selective management system with a rotation cycle of 25-30 years. Taking the whole forest estate, these forests will be brought into production in a way which, from about year 2000, will produce a consistent flow of logs in the future.

In natural forest ratan is planted in logged over areas. As ratan develops in 10-12 years there is little coordination between the harvesting of rattan and the harvesting of timber.

With regard to economic aspects of sustainability, the costs on a per hectare basis of the pre-felling inventory and of poison girdling are M\$35 and M\$120 per hectare respectively. In Sarawak these should be roughly the same, possibly a little more due to lack of infrastructure. It is established practice now to undertake a complete pre-felling inventory before a concession is given.

The distribution of forest types shows 90% dipterocarp forest with the remainder of mangrove and swamp forest. These proportions are approximately similar in PFE.



At present, the cut for Peninsula Malaysia is about 9.5M cubic metres, which is largely dipterocarp, and is made up of cut from PFE plus the cut from stateland forest. [A request was made for information on the respective proportions of cut from PFE and that from Stateland Forest.] The conversion forest supply resource will last for about another 18 years. After that the Peninsula's sustained supply must come from the production forest. Initially it is not expected that it will be possible to increase productivity in PFE to such an extent that in 18 years time a 9.5M cut will be maintained, however, the intention is that this will be supplemented with compensatory rubber to bring timber production to about 7M by 2000. This policy cannot be repeated for Sarawak due to the lack of rubber plantations.

With regard to pine growing - this is not a compensatory crop and in fact pine is now being thinned and left to natural generation. However Acacia mangium, which has only a 15-year rotation cycle, is being grown to replace meranti on the market.

In the Production Forest, where some species are found to be growing well, areas are set aside as Protection Forest and excluded from any harvesting activities, in order to preserve the species. Under the Forestry Act, there is a provision that makes it possible to zone the production forest into 12 categories. Protection Forest protects land from soil erosion and at present is not harvested at all.

50% plantation forest is planted with A. mangium. No plantations of Albizia falcataria yet harvested. White wood is in high demand now in the far East market.

Normally licences for logging are for a year and companies must comply with conditions re road building, marking of trees and boundaries of logging areas. After felling the area is checked for breach of conditions.

In the natural forest, preferred species are assisted by silvicultural operations. Selection is based upon market demand and utility of the timber at the time. Changes in the timber industry have meant that there are now more preferred species than previously. About 10% of these preferred species have decorative timber potential.

2. **Datuk Baharuddin Ghazali, Director-General, Malaysian Timber Industry Board**

The Wood-Based Industry  
(see paper tabled by speaker)

The Industrial Master Plan (IMP) has identified the wood-based industry as a priority area for development and the objectives of IMP are: (i) to transform the woodbased industry into a major resource-based industry and to make a significant contribution to the national economy; (ii) to generate maximum value from forest resources; (iii) to make Malaysia a highly visible centre for furniture, joinery and mouldings in the world woodbased products market.

The Government now wants to industrialise and in the course of speeding up the process of industrialisation, Malaysia has opened its doors to foreign investment as the country seeks capital and technology. Efforts now are especially geared toward industrialising the woodbased industry and emphasis given to the development of

downstream processing such as mouldings, joinery and furniture making. For East Malaysia emphasis is also being given to sawmilling and plywood manufacturing.

In Peninsular Malaysia, major exports are in the form of sawn timber, plywood and wood mouldings. Sabah and Sarawak's main export products are in log form (appendix 1), e.g. in 1988 of the total M\$ 7 billion worth of export earnings, M\$4 billion was attributed to log exports (56%); M\$1.9 billion sawn timber (26%); M\$0.782 billion plywood and wood mouldings (11%); and M\$0.410 billion wood mouldings (5.7%).

The export of logs in 1988 amounted to 8.2M cubic metres and 12.3M cubic metres from Sabah and Sarawak respectively, compared with 30,000 cubic metres in Peninsular Malaysia which is heavily restricted on its log export. However, Peninsular Malaysia exported 2.9M cubic metres of sawn timber compared to 1.2M from Sabah and Sarawak combined and four times as much plywood and veneer (6.27M cubic metres).

The processing industry in Eastern Malaysia is running around 5-10 years behind that of the Peninsula, due to a number of reasons:

- i) the infrastructure is not as well developed;
- ii) there is a lack of urgency in establishing a processing industry which will require large amounts of additional capital, due to liberal policy of log-exporting;
- iii) generally domestic market in Eastern Malaysia is relatively small since both Sabah and Sarawak are still largely a rural economy and this creates problems of selling the less exportable portions of the mill output and of getting consistent full-time workers;
- iv) policy regulations pertaining to forestry related industries are made by the respective state governments and therefore emphasis on development industries will differ between the two states of Sabah and Sarawak and the Peninsula;
- v) lack of access to technology and development of indigenous technology;
- vi) lack of skill and experienced manpower and training facilities;
- vii) the historical development in Sarawak and Sabah is very different to that of the Peninsula where forest concessions have been operated on a large scale basis from the beginning and show a distinct advantage for lateral activities such as sawmilling, plywood, mouldings and furniture production, whereas in Sabah and Sarawak the practice has been extraction of logs for export only. In the Peninsula stiff competition for logs between sawmillers and private manufacturers has arisen and the furniture and mouldings sectors face competition with overseas buyers for the sawn timber raw materials.

In an unprecedented move to stimulate the growth of the processing sector, particularly furniture, the government provides an attractive package of investment incentives to encourage both local and foreign participation. It is the strategy of the government to transform the present furniture industry into a large scale export-orientated industry (Appendix 2 Table 2). There has been visible improvement in the export performance of furniture, both ratan and timber, over the last period since IMP was instituted. In 1988 the total export earnings were M\$93M and 1989 already indicates an improvement of M\$50M increase on this figure. The IMP target for 1993 is M\$400M worth of foreign exchange earnings.

In conclusion, the furniture and mouldings, as well as joinery industries constitute the main thrust of the government's efforts to develop the wood-based industry. It is extremely important that maximum value be attained for Malaysia's resources, processing and reprocessing of logs and timber. Export of wood manufactures will have the advantage of increasing foreign exchange earnings per unit of production. The process of industrialisation is slow as expansion, modernisation and technology transfer altogether require massive investment.

Dato Yusof added that the main stress therefore is on downstream activities. If the volume of log exports is cut, the same amount of export value will have to be maintained and it is this balance which is to be aimed at.

#### **Further Points**

With regard to exports, the ideal situation would be to attain some balance of development between East Malaysia and the Peninsula. At present most of the processing industries are based in the Peninsula and practically all the logs available there are consumed. Efforts are being made to buy logs from Sabah and Sarawak to bring into the Peninsula, at the same time, the development of industry in East Malaysia is also being attended to and the movement of the industry and those with expertise in sawmilling and moulding are being encouraged to go to Sabah and Sarawak to establish joint ventures to process the timber in these states. It is difficult to say whether a situation will develop in the near future where log exports from Sabah and Sarawak to the outside world would be stopped but allowed to continue to the Peninsula to sustain production there.

### **3. Datuk Dr Salleh Mohd. Nor, Director General, FRIM**

#### **An Overview of Forest Research in FRIM**

FRIM is funded annually by US\$7M (M\$18M) and is served by 500 people and 93 technical scientists. In view of the development of forestry in the country, in 1985 the government made the decision to convert the Forestry Department into the Malaysian Forestry Research and Development Board. FRIM developed in response to the need to provide information and technology on environmental sciences related to forestry.

There is a long history of research since 1920's which is now based on various programmes which include: the management and silviculture of the natural forest focussing on the development of technology for the management of indigenous forests; the rehabilitation of a logged-over forest; a long-term programme of research maintaining the basic ecology and dynamics of the virgin forest; additional programmes for mangrove, ratan and bamboo research; a major programme developed over last 3-4 years is a basic demographic study of the indigenous forest involving tagging, mapping and identifying every plant in a 50 ha plot in a reserve. 330,000 species of plant above 1cm in diameter have been found and these are now being remeasured again in order to understand the basic dynamics of virgin forest in situ.

## *The Promotion of Sustainable Forest Management*

Another programme is researching the need for a pre-F or post-F inventory for a climber cutting schemes; techniques of planting and protecting mangroves, which cover 0.5M ha of the country, are being developed; and also research on ratan including techniques of planting it under coffee and rubber.

To support the forestry department in its efforts to enhance a resource-based plantation programme, there is major research on the potential of plantation development in Sabah and the Peninsula. The plan is that by the end of the century, over 300,000 ha will be forest plantation.

A watershed programme carried out over the last 8 years has investigated logging on controlled watersheds and found that river turbidity can be reduced by two thirds, reflecting reduced erosion, by using simple techniques such as road alignment, and defining road area limits.

Further programmes include research into pests on plantation, spread of fire on timber species and the use of glues on furniture. A furniture testing laboratory has been established to enhance the quality of furniture.

The Institute also has interests in non-wood forest products: the designs and finishes of ratan and bamboo and utilisation of rubber. Rubber is now an important component of the timber industry, especially the furniture industry, of which 60% wood used is rubber. 2M ha rubber produces 10M cubic metres wood p.a. and exports are expected to increase to M\$100M for 1989. Work is also being done on utilisation of oil palm trunks - 1.5M ha oil palm is expected to produce about 15M cubic metres of oil palm plant per year and a major aspect of research is looking into its use for paper or fibre board. There is also research into chemical utilisation.

FRIM is involved with programmes with other institutes abroad e.g. GTZ, JICA, IDRA, UNESCO/MAS, etc. and there is a research advisory committee of whom 50% are from overseas (including Alf Leslie) to review programmes every year and ensure they are compatible.

Facilities in the institute include a library, herbarium, 5 arboretum, publications, including a recent one on tree flora, since September 1988 "Journal of Tropical Forest Science". There are also 3 substations in various parts of country.

At present there are no definite programmes of research in Sabah and Sarawak, however, research findings are shared and this year, FRIM now has a joint programme with forestry department in Sabah through GTZ to look into the translation of some of the work on National Forest management techniques in Sabah Forestry Department.

### **Further Points**

In the context of the necessity to clear climbers in order to maximize timber production, cut ratan is recognised as an economic crop, not as a climber. In silvicultural treatment ratan is not cut. In terms of economic feasibility, there is some evidence to show that it has been found to be very successful for climber cutting to be done before felling, as it appears to reduce the damage by as much as 50% if done at least one year before final cutting. At present the cost of pre-F climber cutting is approximately M\$100 p ha. Research into the impact of climber cutting on increase in growth has not yet been carried out.

The forestry plantations are financed by the government. In the natural forest, concession holders have to pay a silvicultural cess. This money is paid into a fund to be used for the silvicultural treatment of the logged over forest done by the government. Work is now contracted out to private companies who are trained to do silvicultural operations with supervision by the Forestry Department. At present all research is funded by the Federal government but it is hoped that there may be some input from the private sector in future.

Both Sarawak and Sabah are represented on the Malaysia Forestry Research and Development Board but not on the research advisory committee, which has representation from industry, universities, forestry departments in the Peninsula and five overseas members. On a broad ecological front, the research being carried out is applicable to East Malaysia, although detailed silvicultural techniques vary with each forest type. Also the geology of Sarawak is much younger than the Peninsula but in principle some of the techniques of reforestation could be applied in the hill forests of Sarawak. However, the peat swamp forest is particular to Sarawak and extensive research has not yet been embarked upon.

For poison girdling, the poison used is 2,4,5,T which is very selective and one of those approved by the government. The government is continually studying the use of poison girdling in Malaysia and there may be a change to another type of poison shortly. Only those trees which are defective or with no economical or biological future are poisoned. If the technique hinders the development of the residual stand it will not be used. Lesser-known species (LKS) are not poisoned just because they are lesser-known but only if they are moribund trees which are competing with species already growing well. Consideration is also given to the environmental impact of poisoning. With regard to the economic impact of poison girdling on growth of trees, research shows that there is a better rate of regeneration as a result of poisoning.

Monday 27 November 1989 - Kuala Lumpur

## 2. ECONOMIC PLANNING UNIT OF NATIONAL DEVELOPMENT, KL

Dr Abdul Rahman

### a) Overview

Multilingual, multicultural nation. Federation of 13 states formed in 1963 with landsize 3,000Km square. Well endowed with abundance of natural resources which enhance the country's comparative markets. 42% of total land area suitable for agriculture, also has mineral deposits and offshore oil and gas operations. Leading producer and exporter of tin, palm oil, rubber, timber. Estimated GNP M\$85.8 billion and per capita income M\$5,065 (US\$1,800) = 'middle income economy' country (World Bank classification).

## *The Promotion of Sustainable Forest Management*

### b) Development Strategies and Economic Growth

There are four stages in the development strategy:

- i) Longterm outline perspective plan covering about 20 years (1971-90);
- ii) Medium term five-year development plan;
- iii) Mid-term review every two and a half years;
- iv) Annual budget prepared by Treasury and other agencies.

The medium and long-term economic plan is the task of the Economic Unit of the Prime Minister's department.

Since independence, there have been seven 5-year development plans. Now in the fifth Malaysia Plan. In 1960's the strategy was characterised by a greater concern over growth and a market oriented approach. The government confined itself to a traditional role of provision of basic infrastructure, land development, communications, education, health and other social amenities. This approach has led to strong economic growth and in 1960s the economy retained a GNP growth rate of 5.2%. However, despite this progress, the 1970 review showed substantial economic imbalances in income, employment and a sizeable racial imbalance. In 1970s almost half the total households in the Peninsula were classified 'poor' and 89% of these were in rural areas. Foreign interest was dominant in early 70s, with ownership about 60% of share capital of companies.

The Second Malaysia Plan was launched in 1971 and this incorporated a two pronged strategy in an attempt to attain national unity by overcoming the sense of social injustice and wide economic imbalances. The new economic policy aimed to reduce and eventually eradicate poverty by raising income levels and increasing employment opportunities for all Malaysians and also to restructure Malaysian society to correct the economic imbalance.

### c) Recent Developments in the Malaysian Economy

The economy grew at a rate of 7.5% in real terms during 1970s and per capita income increased from M\$1,106 to M\$5,000 in 1988. The incidence of poverty overall declined from 50% (1970) to 17.2% (1988) and rural poverty from 53% to 22.4%; Malaysia's rural areas are now well served with roads and amenities and basic services continue to be expanded. By 1987, 73% of rural households had access to piped water, 72% to electricity; life expectancy had increased from 63 to 70 years and infant mortality rates declined sharply from 50/000 to 16/000.

The policies and programmes transformed an economy dependent mainly on two commodities, rubber and tin, to one of a broad base and diversified production structure. Over this period shares of agriculture (including forestry) declined, and manufacture increased from 8% to 25% of GDP.

Within agriculture, the most notable change has been the rising importance of palm oil, timber and cocoa, which has been made possible by large scale development schemes and national agricultural policy. The revitalisation of the agriculture sector constitutes the main thrust of policy - to increase productivity and competitiveness in development of new resources and greater importance of the private sector. Mining has also undergone substantial change: tin, bauxite, and iron ore declined; petroleum and gas production is now the most important activity in the mining sector rising in value from 16.5% (1971) to 81% (1988).

The manufacturing sector has been the most rapidly expanding sector in the economy. This now contributes 25% GDP compared with 8.7% in 1960. Since 1987 this has been a higher contribution to GDP than the agriculture sector. Dominant are electronics, textiles, air conditioners, rubber products, as well as high technology, steel, petrochemicals and automobiles. With rapid diversification, there have been significant changes in the composition of exports and manufacturing has now become very important with export values increasing from 22% in 1985 to 50% in 1988, while the export value for forestry has fallen from 16.4% in 1970 to 10.6% in 1988. There have also been changes in the structure of imports - consumption goods imported have declined while imports of intermediate and capital goods increased.

In 1985, while other OECD countries experienced growth, for first time since 1975 the Malaysian economy declined, by 1%. As a result of declining income and high population growth, GNP fell from M\$4,500 in 1985 to M\$4,000 in 1986 i.e. decline of 8.5%, however by 1987 this turned around and GDP grew by 5.2%.

Between 1980-86 there was a substantial deficit in the balance of payment and 1986 showed the highest outstanding debt M\$50 billion, although this was reduced to M\$18 billion in 1988. One reason for the high external debt is currency depreciation.

The slow economic growth resulted in rising unemployment. Of a total labour force of 6 million, and total employment of 5.6 million, unemployment in 1985 was estimated at 6.9%, in 1988 at 8.1% and 1989 7.1%.

Despite the turbulent external economic environment and domestic structural constraints, Malaysia has been successful in its effort to bring about and sustain economic recovery. In order to ensure a high sustainable growth rate for the economy adjustment measures are being continued. A vital part of the future development depends on generating a much higher growth rate consistent with resource availability. Controlling and eventually reducing the current account deficit of the public sector is major task. Another major change in the direction of development is the reliance on the private sector. The government can no longer contribute in the big way that it did to the growth of economy and thus privatisation has become a major policy of the government.

d) Economic Aspects of Forestry

In 1985 sawn logs and sawn timber accounted for 10.6% of gross exports and this sector provides a total of 160,000 employment opportunities. During the first 8 months of 1989, a total M\$1.1 billion worth of manufacturing licence applications were received from investors. Downstream processing activities include 900 sawmills, 23,000 workers, plywood plants, and 10 furniture factories, exporting M\$86M furniture each year.

The agriculture sector contributes 22% GDP for the state of Sarawak, of which almost 57% is from forestry sub-sector. For Sabah forestry is 41% of agriculture sector. The other important sector for both Sabah and Sarawak is mining - mostly from petroleum. Manufacturing is still small in proportion to GDP.

Sabah and Sarawak rely very heavily on revenue from forestry. In 1987 Sarawak total income was M\$1 billion, 48% of this from forestry. Sabah's total was M\$1.4B with 71% from forestry.

**Further points**

Revenues from forests which goes to the government become general revenue and the government decides how it should be reused and to which particular sector it should be allocated. It is not necessarily used for forestry purposes. However, there are charges specifically for forestry which involve certain levies being imposed on timber production. In the Peninsula this is called a 'silvicultural cess' and the same occurs in Sabah and Sarawak.

There are certain issues raised in the draft report of the Tropical Forest Action Plan (TFAP) encompassing Sarawak activities but without reference to specific areas which are related to Sarawak forestry. The TFAP looks at the development of the forestry sector as a whole within the country.

There are two areas of annual expenditure on forestry: one is operating expenditure to support the forestry department and research organisations and the second is the development expenditure for investment for the forestry sector. The revenue is much greater than the expenditure. All other major sources of revenue are Federal. The Federal government contributes towards some state development programmes so Federal money is returned to the state for eg. health, education purposes. However, each state also relies on its own sources of revenue to finance those items of expenditure where they are affordable. Forestry is a state responsibility so Federal assistance for forestry is confined to research, education, wildlife and anything outlined in the five-year plan.

In the first Malaysia plan M\$12.4M was allocated to the forestry department. This has steadily increased and in the fifth plan, the allocation was M\$200M for development (M\$ at beginning of plan, not indexed).

Short-term monetary policy is the responsibility of the central bank and fiscal policy is handled by the Treasury. In the planning of land use on a large scale, and the balance between agricultural and forestry land, the EPU was involved in the initial general macroplanning, which was completed in the early 1970s, but the implementation of such plans is done by the state itself. (The exchange rate is on a floating dollar, based on several currencies).

Although 42% land is classified as suitable for agriculture, only 8M ha, (approximately 25%) is actually under agriculture. Most of this land suitable for agriculture is in Sabah and Sarawak. As land is a state matter it is up to Sabah and Sarawak to decide whether they want to open up new land or not. There are also problems of labour supply, as well as infrastructure, and even in the Peninsula, a lot of guestworkers are brought in to work on the plantations. The macroplanning for Eastern Malaysia was done in 1970s and areas for forestry, agriculture and conservation, which was the basis of the Permanent Forest Estate, were defined.



Wednesday 29 November - Kuching

3. **STATE PLANNING UNIT**

1. **Mr Teo Ting Bee, Permanent Assistant Secretary, SPU**  
(Refer '25 Year Anniversary' book + transparencies & see briefing document 1)

**General overview of Sarawak**

**ADMINISTRATION:** 9 divisions (= major administrative units of 27 districts and 30 subdistricts. Total area 125,000 Km square. 38% of total area of Malaysia covered by Sarawak.

**RELIEF:** mountainous region with very rugged belt along border with Kalimantan, well dissected by rivers and deeply forested; coastal area is part alluvial, part swamp; between the coast and the mountains a belt of foothills runs the length of the country and it is this area which has received most investment and where the bulk of the population live.

**POPULATION:** Total population of 1.6M growing at 2.5%. By 2000 estimated 2M people. The NE of state more sparsely populated with only 30% people on 70% of land. More than half population is under 24 years. Wide diversity of ethnic groups

**LAND:** None of the land is classified as 'very suitable' for agricultural purposes; 1.7% 'suitable'; 12.5% 'moderately suitable'; 14% 'marginally suitable'. Therefore 72% of 12M ha is not suitable for agriculture. 3/4 of total area is under forest; 22% covered by shifting cultivation (i.e., has been under shifting cultivation at one time or another); 3.5% settled agriculture.

**EMPLOYMENT:** agriculture (includes forestry & fishing) employs 54%; from 1960s there has been a significant drop in those involved in agriculture but manufacturing has more than doubled and the construction has also increased. The 'government & other services' sector (includes financial services, education and health etc) has tripled.

**PRODUCTIVITY:** total output M\$6 billion (constant M\$ at 1978 price); annual rate of growth in mid-80s dropped from 15.3% (1983-1984) to about 2% (1986-1987). It is now about 4.2% and the estimate for next year is 4.5%. In 1985 Sarawak, an area of country almost equal to that of Peninsular Malaysia, produced about 10% of total output of the country.

**STRUCTURE OF ECONOMY:** mining & quarrying has grown from M\$1 billion (1971) to M\$6 billion (1988), a rise from 15.5% to 32% of total output, most of which comes from petroleum & gas; forestry & logging contributes 12.4%; manufacturing 14.5% and agriculture & livestock 15.2%.

Productivity is relatively low and as the petroleum industry is a federal matter, the state gets relatively little revenue out of this. The level of reinvestment in the state is low and there is significant leakage to outside the state.

## *The Promotion of Sustainable Forest Management*

Projections for 1995 indicate a reduction in the contribution of both forestry and mining but steep growth of the manufacturing industry, partly due to downstream timber processing and petroleum industries.

At present there is a policy of a 10% retention rate on the export of logs but with the intention of increasing this to 30%.

**TRADE:** Since mid 1960s the balance of trade deficit has grown steadily (current dollars). Exports (across state border) include: petroleum, logs, sawntimber, timber products, agriculture, pepper, rubber, most of which are sold to Japan, Singapore, Korea, Peninsula (13%), Taiwan. Imports include food and tobacco particularly from Japan, Singapore, Peninsula, EEC countries, USA. If downstream industries are developed, this will affect export duties, although it is possible that the Federal government might compensate appropriately for loss of revenue. If the retention rate is increased by 20%, further income generation and employment opportunities will follow.

**INFRASTRUCTURE:** roads run the length of the country along the border of lowlands and foothills and more roads are under construction. There is provision of a rural air service and the Sixth Malaysia Plan is looking into the possibility of upgrading Bintulu airport.

**PRODUCTION:** Mining industry is mostly concerned with petrol and natural gas, although gold, silver, and coal are also included; Manufacturing is a private sector activity, although it is the role of government to provide infrastructure, e.g. industrial estates. A total of 736 manufacturing establishments have been approved of since 1981, of which 400 are wood, timber, rattan-based. The proposed investment value is M\$5 billion.

**FORESTRY:** total log production is 14.5M cubic metres, of which 12.3M cubic metres is exported and 0.5M cubic metres of sawn timber exported.

**AGRICULTURE:** Since 1984 a total of 230,000ha has been allocated (not yet in use) to be brought under agriculture. The Integrated Agriculture Development Programme aims to organise cultivation by providing technology, infrastructure, and marketing. The intention is to utilize land more efficiently and to provide maximization of returns.

**TOURISM:** It is considered that Sarawak has potential in the tourist market and that it should be upgraded and developed (only 1% contribution to GDP).

**PUBLIC SECTOR INVESTMENT:** investment is split between the federal and state governments, the federal currently contributes M\$2.2 billion and the state M\$1.6 billion. Education, training, energy, health and transport are mainly federal concerns, while agriculture, industry and housing are state matters.

The aims for 1991-1995 are to increase the GDP growth rate to at least 5.4% and reduce unemployment from 9.6% to 7.6%.

**2. Dr Ambrose Foo, Director of Lands & Survey  
(see briefing document 2)**

There are three different land ordinances for Malaysia, national land code - Peninsula; the Land Ordinance - Sabah, and the Land Code - Sarawak. The last was established in 1958 and is the code used for administration of land in Sarawak.

The Lands and Survey Department formed in 1918. Land prior to that was the responsibility of the Administration and later the Agriculture Department. Surveys were carried out by the Public Works Department. In 1925 the department split in two, the Land and the Survey departments and registration of sections of land became the responsibility of the registrar of the High Court. The task of the Survey Department was to concentrate on laying the foundation of the survey system.

In 1933 the two departments merged again into one department to form the Lands & Survey Department.

In addition to the administration of land, the Department is also responsible for administration of the Mining Ordinance.

The present Land Code became effective from January 1958 and this superseded the previous land code. There have since been some amendments.

[For continuation of Dr Ambrose's presentation, see briefing document 2]

**Further points**

The Interpretation Ordinance is separate from the Land Ordinance.

Dr Ambrose explained that up to 1954/55 the Native Customary Land which was occupied at that time was registered. Maps showing the boundaries of the Native Customary Land may or may not reflect what is on the ground because of the difficulty of keeping up to date. The estimated area of Native Customary Land is about 22%.

Mr Hamid Bugo explained that under the provision of the Land Code, the establishment of Native Customary Rights to allow people, to fell jungle for purposes of cultivation, must approved by the District Officer. So from 1958, the District Offices issued permits for the establishment of NCR. However, it was found that permits were being given indiscriminately and therefore in 1984 a directive was issued by the government stating that, as far as possible, permits should not be issued for the purpose of establishing NCR. Even so, there are cases when permits are issued, depending on the circumstances.

The permits do not actually reflect the quantum of NCR or the areas under shifting cultivation, because, whether they have permits or not, shifting cultivation takes place. The land utilization map gives a fairly good indication of areas under shifting cultivation, and this can be supported by aerial photographs.

The Forestry Department agreed to prepare papers on permits from sample districts for next visit, including aerial photographs.

## *The Promotion of Sustainable Forest Management*

Dr Ambrose added that no NCR can be claimed in respect of native area land and mixed zone land after 21 May 1954, with or without a permit. The permit is only applicable to interior land after 16 April 1955; prior to this date, no permit was necessary. District Officers can only give permits subject to certain conditions and not as a matter of course. Subsections 5 & 10 of the Land Code must be complied with: 'the consent of a District Officer for the purposes of any permit shall not be given if he considers either that he would thereby prejudice the individual or communal rights of others, or that he would thereby the interests of Sarawak or its inhabitants in the area where the land applied for is situated'.

NCR are not registered unless applications are made to claim rights over the land and the Forestry Department are satisfied that the rights are proved. Therefore land which is under customary occupation cannot be mapped until an application has been approved and then it ceases to be customary occupation and becomes Alienated Land, either Native Land or Native Area Land.

With regard to allegations that shifting cultivators cut down more forest than loggers, Mr Chai agreed that some Federal leaders have made such statements, which he has said are not true. He said that the Sarawak Forestry Department have never accused the Penans of being a major cause of deforestation and it is recognised that the Penan came at later stage and they did not clear as much forest by shifting cultivation as the other races.

Lord Cranbrook asked for statistical evidence to counter the allegation that much more forest is being lost to shifting cultivation than is being given out by timber concessions. Mr Alf Leslie added that this should include information on the extent of shifting cultivation, both legal and illegal and from the point of view of the sustainable forest, how much occurs in virgin jungle and how much on logged over land in the interior, which is not reserve. Further information on the length of cycle of cultivation, as well the number of people involved was also requested.

Mr Chai stated that the 1985 LANDSAT aerial photographs shows 3.3M ha under shifting cultivation. He added that after land has been cleared, even after 20 years of secondary growth, this land is still included in shifting cultivation category, it is not classified as forest. So the figure of 22% of the state under shifting cultivation includes the total stock of land under shifting cultivation.

Dr Teo added that there appears to be negligible marginal increase, and the same stock is being cycled over, although localized population increases and internal migration results in a shortening of the rotation cycle, despite there being little actual population growth in the rural areas.

With reference to the classification of land categories in the Land Code, Mr Chai explained that all land is 'state land'. Areas called 'permanent forest' are forests which have been gazetted as forest reserve under special ordinances, such as the Forest ordinances. Any 'high forest' not gazetted as permanent forest is called 'stateland forest'. Stateland forest can be converted into permanent forest but until this is done, does not come under the jurisdiction of the Forest Department. All these fall into the category of 'Interior Area Land' (classification p.2). 'Reserved land' includes any land reserved for government purposes e.g. office buildings, not for forests.

Mr Hamid Bugo explained that if there is a conflict of interest over land use, e.g. a mining area found within forest, it is the Minister of Resource Planning who will

decide the outcome. It is therefore possible to convert a permanent forest into stateland.

Mr Sumarsono asked if there are any measures to prevent illegal shifting cultivators who have served a jail sentence for e.g. 6 months from repeating the same offence. Mr Hamid Bugo explained that although previous efforts at resettlement have not been very successful, the strategy for plantation development is an attempt to provide resettlement for people by attracting them to an economically viable plantation area. There is one scheme now to establish a plantation in the first division, about 30 miles from Kuching. He said this is more of a resettlement programme than a strategy for plantation.

A lot of people are floating around because their base does not provide them with enough opportunities or income for them to stay. Agricultural productivity in Sarawak is low and small holdings do not cater for modern requirements. Hence the agricultural plantation programme is being promoted. The aim is to provide a nucleus plantation programme within a certain area which is viable and which can cater for its periphery. Thereby individuals can plant a few acres on a small holding basis, but with the nucleus to help with infrastructure and marketing support. At the same time Sarawak is also trying to improve industrialisation and perhaps this can also cater for migration of people from rural to urban areas.

Mr Francois asked if it is possible to bring back land to forest and Mr Hamid Bugo replied that, in the Land Code, acquisition of land which has already been alienated is only allowed for the purpose of public interest. If a National Park is required then the area which has already been alienated to individual persons/private ownership is acquired compulsorily and the market price paid for it. There is no impediment to somebody buying land and putting it into forest.

Lord Cranbrook asked about the uses of land which do not involve forest clearance and the plantation of agricultural crop, such as rights of general access, rights of fruit collection, hunting, rights to minor jungle produce. Mr Hamid Bugo explained that in the Land Code these rights are protected even in areas of forest where concessions have been given for the extraction of timber, legally, that right stands. Concessionaires with a permit cannot stop natives coming into area and collecting jungle produce. This includes the Penan. Section 65 of the forest ordinance states that any inhabitant of Sarawak is allowed to collect for their own domestic use timber or other products. This includes PFE because rights are accorded to people who already have traditional rights in the area. If these rights are gazetted then they are preserved. Consequently it is exceptionally difficult to make a permanent forest.

The right is not given; it is inherent. So rights cannot be taken away, unless there is a re-classification of land area e.g. stateland converted to alienated land, then the right will be gone. Otherwise the right is built into the Land Code and in the forest ordinance. If it is judged that rights are injured, individuals are entitled to go to the courts and sue, whether it is government or concessionaire.

Friday 1 December 1989 - Sabal Forest Reserve (FR)

**4. SABAL AGROFORESTRY STATION**

- a) Joseph Jawa, Executive Forester  
Orvil Morningstar, Agroforestry Officer  
Nancy Knight**

**Sabal Agroforestry Project  
(see briefing document 8)**

This is one of seven such projects. The FR covers 7833 ha, of which 2277 ha (29%) has been affected by shifting cultivation. Forest reserve was lost by illegal incursions when the road was built during 50s & 60s. These have not been resisted because the Forest Department was unable to tell whether these incursions occurred before or after 1954 and the establishment of NCR. The objectives of the reafforestation project are:

- i) to restore the land to protective forest;
- ii) to restore fertility;
- iii) to provide incomes;
- iv) to provide timber;
- v) to emphasise the role of forestry.

Acacia mangium has been planted to reforest part of the area formerly under shifting cultivation (SC) and prevent erosion. At present it is only a nursery crop.

The objectives of the Agroforestry part of the project are to help raise the living standards and thereby reduce shifting cultivation in PFE, and to provide agricultural land to the shifting cultivators in Sabal Forest Reserve to encourage maximization of both agricultural returns and forest production.

In 1989 M\$300,000 was spent on the Agroforestry project and the number of shifting cultivation farms was voluntarily reduced to 1 (compared with 6 in 1988).

**i) Cows and Goats Area**

The first project with cattle raising was started by buying young steers and selling them and then using the profits for funds for the community. A main problem encountered with this system was the difficulty of finding new stock, and so it was decided to change the aim to become a breeding project.

The cattle have been allocated an area of 20 ha which is divided into 6 pasture areas which are grazed by rotation. The present stock consists of 2 bulls, 19 cows and 6 calves of Brahma mix breed. The people of Sungei Kora (?) community are involved with the work on a rota basis. The foreman has been fully trained and he is in turn disseminating information to other workers.

The aim is for full production in 1993 when it is hoped that it will be possible to hand over the cattle to the people for them to own at \$150 per head. The Department of Agriculture has provided help with e.g. artificial insemination.

The pasture appears to be sufficient for the cattle, as only a minimum supplementation is required. The soil in the pastures is quite poor and difficult to maintain therefore fertilizer is required. Legumes are returning under the trees.

The goat project was completed and stocked 2 months previously. Two families are involved with the work on a rotational basis each month. At the end of 18 months the stock will be fully matured. Most of the stock are cross-breeds of Peruvian and Anglo-Nubian. It is estimated that when the families have their own projects, they will be able to make M\$1500 annually, depending on where they sell. The goats are sold for meat, as there is little demand for milk. Goats are housed and fodder is cut for them; supplementary rations are required.

ii) Fish Pond

The Agriculture Department provided a digging machine (@ \$20 ph) and other materials to assist in the making of the pond, which measures 80 x 50 m. There are 6 cycles of chicken each year and the ponds are stocked with Likoh, Lampan Jawa and Lian Hu. The pond is run by a committee of staff and is now self-sufficient.

iii) Deer Area

This project was originally intended to include wild boar but these have not yet arrived. 5 ha of forest have been fenced off and there are 2 stags and 6 hind of Rusa deer which are fed on tapioca root and leaf. It is probable that the local community will get M\$800 per family p.a.

iv) Cocoa / Durian Area

96.6 ha has been planted with durian, for timber and fruit, and cocoa at 3m intervals. The area was previously under shifting cultivation.

In addition to these major projects, there are also a few minor ones, such as bees (Apis cerana).

Friday 1 December 1989 - Serian

5. MAYANG TEA PLANTATION

Michael D Alwis, Project Manager

The tea plantation was started in 1982 in an effort to alleviate the poverty of the local communities who were previously practising shifting cultivation. The plantation began on NCR land owned by the villages and the people gave the land over on trust. A government loan was used to open up the land and when the loan is paid off, the profits will go back to the people. It is hoped that this will be achieved next year.

Initially there were problems in finding sufficient labour force because the people did not adjust to the novelty easily. However, there are now 430 workers, which includes almost all the village families, each family capable of earning M\$600-800 per month. This has become so attractive that there is now a surplus of labour and

## *The Promotion of Sustainable Forest Management*

many school leavers returning to the villages looking for work. As a result, sometimes only 4 days work a week can be offered and more villages are asking for similar schemes to be adopted in their areas. From being a lazy work force bringing in 16Kg tea per day, incentives have produced a highly productive force bringing in 50-60Kg.

There are 500 acres and the yield per hectare last year was 1600Kg and it is still in its primary pruning cycle. Marketing and selling provide the problems as Sarawak has had two brand name teas established on the market, Lipton and Boh, and it is difficult to break into the market. At present, Mayang is doing well if it sells 20% crop locally. The rest is being exported and then often brought back into Sarawak under another name. It is therefore difficult to make profits. The year's budget of M\$1M is just about breaking even. The total cost of the plantation, after it is finished will be M\$7.5M.

The tea is packed 6 days a week, using 7-8 tons green leaf per day. The factory employs 16 people per day.

Saturday 2 December 1989 - Kuching

### **6. KUCHING TIMBER INDUSTRIES BERHAD, PENDING INDUSTRIAL ESTATE**

**Datuk Lau Hui Kang, Managing Director (Chairman STA)  
Stephen Lau, General Manager**

**Wood Manufacturing Complex of KTS Timber Industries Berhad**  
(see briefing document 10)

In early 70s the government imposed a ban on the export of ramin. Ramin is produced mainly in Kuching, Sibuan and Samarahan divisions and therefore it was decided that the present site for the industrial plant would be the best location. It means there is a minimal labour and raw materials supply problem and infrastructure is provided. Late in 1987 the government decided that Sarawak should go further downstream and to encourage further investment, a 10% retention on exports was imposed. In order to relieve reliance on ramin, the plywood industry was developed. Recently the company has taken part in a joint venture with a Japanese company to set up a new plant.

#### **Further points**

The government restricts 10% of the volume of log production for local processing. The plywood industry uses most species, including Meranti and Kapur. Unpopular species are used for the core of products and off-cuts can also be utilized therefore plywood is very flexible. Further investment is to be put into short-piece joining.

80% off-cuts are burned for fuel for kiln-drying and shortly 30-35% of the waste sawdust will also be used for heating of the driers. With log cutting it is inevitable



that 35-40% is lost - 50-60% log is used for plywood conversion. The question of whether burning of waste caused an air pollution problem with the smoke plume was raised. The Managing Director said that the Environment Department of Sarawak does have rules and after the private mill is built there will be little waste burnt, the plan being to use waste wood as a fuel.

Preservative is only required to be applied to ramin. The other timber species are immediately put into a kiln for drying, and pesticide is applied against termites.

75% labour force are native to Sarawak. When 500 people were required for the developing production industry, KTS applied to the Ministry for Indonesian labour, as this is nearer and easier than workers coming from the Peninsula, it is also cheaper and there is a shortage in the Peninsula too.

90% of 6000 cubic metres of mouldings produced in 1988 were made of ramin. Ramin is running out because although forest output is steady, there are more industries setting up and consequently more demand for the timber. Companies pay a high rate for material for mouldings.

With regard to the proposed increase from 10% to 30% retention supply by 1995, the Managing Director said that whether or not this can be achieved would depend on local facilities. The industrial committee might make recommendations to the Forest Department.

It was noted that with increased technology and new machinery, there may have to be a reduction in labour, although KTS hopes to keep a balance between labour and machinery. The improved efficiency of the new machinery is able to reduce wastage on logs by 2%. The recovery rate of this factory is 58%. Poor quality of logs increases the cost per metre. When the market is buoyant, the quality of logs coming to the mills is lower and the good quality logs are exported therefore the yield of the forest is the same but distributed differently. The Log Quota Committee discusses how and where logs are distributed.

With incentives, the development of downstream industries will enable Sarawak to reduce exports and when the present complex is finished, KTS plans to develop a chipboard plant. The government's offer of 80% export reduction is a great encouragement to the local market. This means that 1 ton of meranti, normally assessed for royalty when processed locally pays M\$20. Royalties are based on species and the destination of logs, either for export or for the local market, is determined at the point of loading, on the upper part of the river.

Saturday 2 December 1989 - Bako

7. **BAKO NATIONAL PARK**

**Mr S K Wong, National Parks Officer, Southern Region**  
(see briefing document 11)

The park covers an area of 2,742 ha of rugged sandstone. This is considered to be relatively small, but it is the most accessible National Park to Kuching. Since improvements to the road in 1985 visitors to the park average 15-20,000 pa out of which 55% are day-trippers and 15% foreigners. The number of visitors camping is increasing, particularly school students.

The plan is to de-centralize visitor facilities to ease congestion and to improve trails and camp sites. It has been agreed with WWF Malaysia that Bako National Park be made a centre of both education and preservation, starting from 1990. The information centre is available for all but there are additional units dealing with secondary schools and also conservation courses for teachers. Although there are not many animals in the park because of the restricted size, the number of vegetation types totals 25. Visitors are restricted to paths in the park and areas are set aside away from these, specifically for animals, e.g. proboscis monkeys. An assessment the impact of visitors and levels of disturbance is to be carried out. So far litter has not proved too much of a problem and firewood collection is prohibited.

Monday 4 December 1989 - Sibul

8. **NAMAN FOREST RESERVE**

**Ernest Chai, State Silviculturalist**  
(see briefing document 12)

Plots 70 & 71, both of 100m x 200m, were established originally in 1957 to monitor regeneration of harvested area. RP 42 & 43 were established in 1961 to study the effects of silvicultural treatments, one being kept as a control. The intentions for the future of the forest depends on how the forest responds. A survey in 1986 revealed 900 trees exceeding 10cm diameter, 4% of which had reached 50cm and 54% of these were commercial species (44 species). There is no intention to fell again before 2000, the cycle for peat swamp being 45 years. There appears to be no problem with regeneration.

Research on Ramin shows 21 trees per hectare of which more than half are over 30cm. There is enough Ramin for the initial re-cutting cycle but there may possibly be problems for the one after.

Monday 4 December 1989 - SibU

9. **TETSAN TIMBER MILL, UPPER LABANG INDUSTRIAL ESTATE**

**Loh Wok Seng, Managing Director**  
**Wong Siong King, Factory Manager**  
(see briefing document 14)

The mill was started in 1975, initially processing Ramin dowels and mouldings. In 1981 it was further expanded to a sawmill for cutting of logs. The future intention is to develop veneers at a plywood factory nearby. About 400 workers are employed and 2,500-3,000 cubic metres sawn timber produced per month and approximately 2,000 cubic metres per month dowels and mouldings are exported, mainly to USA and Western Europe. The mill has a longterm arrangement with a concessionaire and prices are negotiated monthly. The factory still concentrates on Ramin but Mr Loh did not think it would be difficult to adapt to cut other species, although consumers would have to be persuaded to buy different species, e.g. Meranti, Kapur, Selangan batu. The problem will be developing mouldings from other species than Ramin.

Monday 4 December 1989 - SibU

10. **RIMBUNAN HIJAU PLYWOOD MILL**

**Tiong Cheong Hu, Production Director**  
**David Tiong Cheong Ung, Marketing Director**  
**Raymond Lau, Factory Manager**  
(see briefing document 13)

The total area of the factory, including sawmill, is 70 acres and 1,100 workers, recruited from all over, are accommodated on site. The logs come from concession companies which are affiliated subsidiaries of the Rimbunan Hijau Plywood Mill. These are located between 80 and 300Km from the factory by river. The concessionaires also export logs. Factory production is 90-95% for export, largely going to Singapore, China, Middle East and USA (not to Japan at present, due to differing requirements on specifications: 4 x 8 instead of 3 x 6). In the case of an 18ft tree felled (2 x 8) there will be 2ft lost. A concession that is linked to both plywood and sawmill markets is a good way of more fully utilizing timber. The mill is not limited to species. The government has just approved two glue factories.

The factory is running at 80% capacity and has been going for nearly 2 years. It will reach full capacity in due course. Staff are being trained and those who have reached Form 5 school education are eligible to train as supervisors. The factory works 24 hours a day and there are two shifts. Of the workforce of 1000, there are approximately 20 resignations a week. Each employee is given 3 months probation before their job is confirmed. A large proportion of the workforce comes from Java, as the pay is three times that locally in Indonesia.

## *The Promotion of Sustainable Forest Management*

The Coordinating Industrial Committee has now approved 22 plywood mills, most of which fall within a Timber Processing Zone (TPZ), i.e. an area within which the government assists in preparation of land and infrastructure. However, Rimbulan Hijau Plywood mill was established before TPZ, but the site was selected for other reasons, including the available supply of freshwater.

Tuesday 5 December 1989 - Miri

### **11. BINTULU LUMBER DEVELOPMENT SDN BHD. SUAI COMPLEX FOREST MANAGEMENT UNIT**

**Kong Shiaw Kian, Manager**  
(see briefing document 15)

The operation started in 1976 and as concessionaires, BLD has to comply with the regulations of the management plan. In 1988 approximately 257,000 cubic metres logs were produced, most of which were exported to Japan, Korea, Taiwan. A small proportion were retained for local processing. In 1979 a sawmill was set up nearby and in 1988 9,600 cubic metres logs were processed. Sawn timber is mainly sold to Western Europe and a small part locally.

There are 450 workers, including 80 working in the sawmill. More than 80% employed are from rural areas. Those harvesting are paid M\$12,000 p.a. and sawmill workers receive M\$5,000 p.a. and there are additional medical, schooling and sports facilities available and free accommodation with electricity. The fellers are directly employed under contract but many of these have assistants who are not included in 450.

Harvesting in Coupe 14, which is located 30Km from the camp, started in July 1989 and will continue to June 1990. Each coupe is worked successive years. When all the coupes have been harvested at the end of 25 years a new survey will be made. The average volume per hectare is 30-45 cubic metres. If the 10% retention were increased to 30%, with the present machinery, BLD would not be able to cope.

The management plan represents the close working together of the concessionaire and the Forest Department. The demarkation of the coupes (1:50,000 map) and operational inventory is carried out by the concessionaire but checked by the Forest Department. The operator produces a general harvesting plan showing how he intends to work the whole area over the licensing period, including the coup layout. The company then submits this proposal to the Forest Department who check that it is in order and may make any other proposals. If it is approved, then the operator can commence work on the particular coupe which is to be worked for a particular year.

Two years in advance, detailed plans are made on a 1:10,000 map with 10m contour intervals and other topographical details (may be done using aerial photographs) showing block layout. The layout of the blocks (50-100 ha each) is determined with boundaries following natural features. There is usually one tractor to each block. This plan is checked by the Forest Department. There are survey companies who are

prepared to do such work on contract and for this particular coupe, the concessionaire employed a consultant company.

Up to this point, the planning is done on maps but once this is approved, ground surveys are carried out to demarcate boundaries and roads, using the map as a guide. With this survey data, the details are submitted to the Forest Department for verification, who send a team to check the information on the ground. If this is accepted then application is made to the Section Forest Office for endorsement of the licence and a check of the survey and enumeration is done of the area, on a sample basis (due to manpower shortage). When the company is finally given permission to start, block boundaries are marked out by yellow paint and the operator may commence felling the first block.

When the first concession licence ends, it is possible that it will be granted to the same company again. It was questioned whether, if the licence is not likely to be renewed, towards the end of the licence period companies may be tempted to cut more than timber than is allowed. Mr Kong said that any company found to be cutting the wrong amount, would have their licence cancelled. It was added that if it is known in advance if the concession is to be renewed, this will ensure that future crops are looked after. It was suggested that the length of concession licences might be increased.

The Forest Department is only concerned with the validity of the concession. It is up to the government who controls who gets the concession at the end of the 25 years. When the licence expires, under Rule 26 of government regulations, the concessionaire is allowed to remove any of the infrastructure they have installed, otherwise anything left after 6 months goes to the government. At present BLD are confident that they will be able to return at the end of their 25 years, although it is recognised that the future is affected by the market and for the next cycle there may not be the need for as much volume of timber and coupe sizes may be redrawn.

In Peninsular Malaysia restocking of forests is the charge of the concessionaire, rather than the Forest Department as in Sarawak, even though there is still no guarantee that the licence will be extended at the end of 25 years. There is limited confidence in the management of the forest by the private sector in Sarawak, due to the lack of skilled experts. However, gradually more business may be handed over to private companies, in line with the government's general policy toward privatisation. At present the knowledge and relevant skills are still confined to the Forest Department. The operational responsibility of reforestation is often done on a contract basis, paid for by the concessionaire and kept under the close scrutiny of the Forest Department. As the private sector has not been able to do this very successfully, the responsibility is gradually being taken back and done on a privatised basis and the charges borne by the concessionaire. This is expensive and in Sarawak there are not enough people to do the job.

Extraction of timber continues all year. As the plan for the main road network is permanent, subsidiary roads and tracks are closed at the end of each coupe use.

With additional manpower, BLD say they would appoint forest guards to prevent people coming in to the forest.

Kerangas areas reflect poor soil (yellow podzol) and sometimes reflect the topography and these areas are generally avoided.

**COUPE 6**

Logged in 1982 and silvicultural treatment of 'liberation thinning' started one and a half years later, but not on the whole block. In contrast with the Peninsula's technique of blanket treatment, this is more constructive in terms of the number of the trees removed. Rather than removing the bad ones, the good ones are preserved and all effort put on them. This follows treatment applied to FAO project. The intention is to bring in the crop after 30, rather than 60 years. The effect of the treatment must be balanced with predictions for the market in 10 years time, and already the species list has been extended since the beginning of treatment by 130%.

Wednesday 6 December 1989 - Miri

**12. GUNUNG MULU NATIONAL PARK**

**1. Oswald Braken, National Parks Officer, Northern Region  
(see briefing document 16)**

Gunong Mulu is Sarawak's largest National Park, covering an area of 52,865 ha. Access is by river, either via Marudi or Limbang. The land consists of limestone rock between sandstone mountains which have, over millions of years, formed extensive underground cave systems, including 72Km long Clearwater Cave and Deer Cave which is the largest cave chamber in the world. Most of the park is covered with virgin forest and it is rich in wildlife, including deer and wild boar. The park is mainly wilderness area with some visitor areas, particularly around the base-camp and Clearwater and Deer Caves. The park is also used by local inhabitants who are free to roam and hunt, fish and gather forest products. The base camp provides accommodation, a number of walkways have been constructed and local people are being trained as guides.

**2. Gary Tay, Divisional Development Officer**

**Government Development Programme for Penan, Miri Division**

There are 60 Penan communities in the area with an average 30-40 people per group and of which 3 are groups are still nomadic. Most of the people are semi-settled. Total number of Penan is approximately 9000.

At present there are 8 Penan schools in Miri division, 4 in Bario and 4 in Miri. Boarding facilities, food and books are taken care of by the government. The government has identified two areas where service centres will provide a school, clinic and agricultural centre for extension services. In one of the areas, which is on the way to Clearwater Cave, the government intends to build a primary school with boarding facilities and accommodation for teachers, a rural clinic, and medical and agricultural centres. There is a malaria eradication programme, and a village health team who give basic medical treatment and encourage those people living in the most remote areas to go back to their villages for this. They are able to meet, once a week, at a logging area where the concession company sends transport to take the Penan, free of charge, to the nearest dispensary. This being part of the community

service. Also arrangements are made for exchanging goods with the Penan, in order to enable them to get clothes and food, following the custom formerly existing under British rule.

The agricultural extension services, which have only recently begun, include offering ideas for improving crops, although due to the remoteness of many areas, only those settlements which are easily accessible can be reached. The Penan Volunteer Corps, who are sent out to set up these community programmes are given three months training, either in Sibul or Bintulu (agricultural centres) or in Miri (education). All of the volunteers have Upper 5 education and are sent up to selected kampongs. They are given a small allowance and free travel; each covers several kampongs. Those kampongs which do have schools indicate that the Penan show a high academic standard and it is hoped that this system of training Penan people themselves and sending them back to instruct their own groups, will act as an agent of change.

Mr Tay said that the government does not believe that the Penan should carry on being nomadic and it is trying to induce them to settle down, but if they choose to continue as they are, they can. He said that the Penan are not being treated differently as there are other government projects contributing to community programmes.

When asked why the people are not encouraged to work in forestry, as well as agriculture, Mr Tay said that some of the Penan do debarking work but are not yet loggers. Also, some do not yet have identification papers and the logging companies cannot employ anyone without these. He added that in view of the publicity of the blockades which have occurred recently, the government has set up a programme to look into the effects of logging on the Penan.

Thursday 7 December 1989

13. APOH PALUTAN FOREST MANAGEMENT UNIT  
Raulito Tacugua, Senior Forester  
(see briefing document 17)

The Forest Management Unit is located in Baram District, Miri region. The whole Forest Management Unit contains approximately 11M cubic metre of mixed dipterocarp stemwood (183 cubic metres p.ha.). The first Forest Management Plan was drawn up in 1976 and is kept under close supervision of the Forest Department. Felling is subject to approval of the Forest Department and only when approval has been granted can the concessionaire proceed with road construction.

The company uses 43 logging trucks and 72 skidding tractors. So far there are about 150Km of main logging roads in this Forest Management Unit. These also serve the local inhabitants of various longhouses in the area. Coupe 14 is the area being worked at present and where harvesting operations are going on. Tractor skidding is used for harvesting. The road has already been advanced to the boundary of Coupe 14. Six tractors are working there. Logs are loaded on Apoh River and rafted downstream 96.3Km for export from Kuala Baram.

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Mr Tacuga said that if more personnel were available to work, productivity might be increased. When asked whether there is an altitude limit in the management plan, he said that timber on ground that is very steep is not extracted. The management plan is held by the Forest Office and another copy by the licensee. Native people tend to be settled, they are allowed customary rights to collect in the forest if it is in PFE, but not all of the concession is in PFE, some is stateland.

Monday 12 February 1990

### **14. FOREST EDUCATION DEPARTMENT (Informal meeting)**

#### **1. Dr Elizabeth Bennett**

Due to a lack of qualified wildlife management staff in the Forest Department, conservation education has become a joint effort. The main organisations involved in collaborative efforts are WWF Malaysia, and New York Zoological Society. WWFM started off as a one-off project in the early 70s. They have had a full time presence since '83 and NYZS since '84.

The first major project (1985: Conservation Strategy Sarawak, CSS) included a review of all aspects of conservation. Simultaneously Julian Caldecott's report on hunting and wildlife management showed for the first time the extreme importance of wild meat to rural people and further looked at wildlife in coastal forests, particularly peat swamp and mangrove.

Current projects include wildlife surveys, and research into factors causing differences in animal numbers and distribution, both natural and unnatural. In conjunction, a study into the effects of logging on wildlife is being carried out at Nanga Gaat. A large amount of information has been built up, including various proposals and management plans for TPAs and ways of controlling hunting.

Many recommendations have been implemented but not all. The two major problems are the lack of staff in the National Parks and Wildlife Office (NPWO) and the difficulty of protecting areas found to be of particular conservation importance. The establishment of protected areas is a very slow process and consequently land gets lost between initial proposal and the final stages. In addition, areas already licensed for logging cannot be considered therefore important areas are omitted. There is no protected coastal forest, even though it is so important to rural people as well as to wildlife and even though there is very solid data to support the need for protection.

Both WWFM and NYZS would like a long-term involvement in the state, especially until expertise in Forest Department expands sufficiently; but this depends on how long the Forest Department want this type of research presence by outsiders.

In addition to the conservation effort, the other main area of work is education. It is felt that until people understand the concept of and the need for conservation there is no point in making reserves.



There has been a need for a unit since 1970s. The main impetus for establishment was CSS and the Dewan Undangan Negeri (DUN) enquiry, which led to the appointment by the Forest Department of a volunteer, Roy Birch in 1987, who because of the freeze on jobs, was employed through WWFM. This work is now continued by Charles Evans, VSO. In 1988 Melvin and Rambli joined to concentrate on schools and rural areas respectively.

## **2. Rambli Ahmad, Environment Education Unit (schools)**

The aim of the EEU is to develop young people to be more aware of environmental concerns and to instill in them the love for the natural environment. The school curricula calls for these values to be instilled in the students and the curricula is the core to promoting Conservation Education.

It is not enough to tell pupils about ecology and conservation and so they are taken beyond to the level of interacting with the environment themselves. Further, it helps them develop investigative, evaluative, and action skills in the interdisciplinary problem solving and decision making process. Pupils are trained to be more aware of the different needs of people and environments and to be able to contribute to the country's environmentally sound sustainable development, while the process of learning is made enjoyable.

Environmental educators have attempted to get involved in the school system via audio-visual presentations, talks, guided walks, nature camps etc. However, these brief encounters do not provide the in-depth experience needed to achieve the objectives. Therefore, a long-term, comprehensive and concrete approach is required.

When the unit was started 3 years ago, it immediately approached a student group to take them to National Parks and naturally forested areas, to be involved in nature and conservation related activities. However, it was realised that the number in this audience was insignificant compared with the number of students in Sarawak. Moreover, it was not certain what feedback would come from students, once they went back to school. This prompted involvement with teachers.

A number of teachers were trained on a three-day course on the national park and a natural forest via in service training through a special arrangement with the Education Department. However, difficulties in promoting conservation have been encountered and getting them involved in activities in the outdoor environment. So the present priority is working with the teacher training colleges.

The introduction of the new syllabus for schools in Malaysia, the Integrated Syllabus for Primary and Secondary Schools, has created an opportunity in that the syllabus is designed in such a way that conservation is highlighted from as early as the Primary school level. Under the title "Man and the Environment", it is included in the curriculum. However, a problem exists in that schools do not have the expertise or the resources to teach the topics; this is where EEU comes in.

A workshop for lecturers from teacher training colleges throughout Malaysia, based on the topic of Environment Education was held last year in Bako. From this, among the resolutions were:

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- it was agreed that every training college should have a centre in which to train methods of teaching conservation using the outdoors;
- to bring the level of conservation education to a higher standard by having regular discussions and seminars;
- to increase the awareness of conservation by creating teachers who have more awareness and are sympathetic toward the environment.

At present, the Unit is working closely with a teacher training college in Kuching where there is a long-term programme set aside for the trainees. It covers:

- a course in a programme design for a Primary school in Semenggoh;
- a 2-hour lecture on how to be a facilitator;
- training on facilitating a group of students from primary school;
- a three-day workshop on conservation and outdoor education in Bako National park.

This gives a very comprehensive and in-depth experience to the trainees, and it is hoped that the trainees will graduate being capable of teaching conservation and not being afraid to take the students for nature trips on their own.

WWF Malaysia is also currently working with the Federal Curriculum Development Centre, Kuala Lumpur, on producing a kit for teaching environmental Education in Primary Schools. A competition was conducted last year, participated in by key personnel for the Man and the Environment Subject, and the winners (including one from Sarawak) were sent to Suffolk, England, for a course in Environmental Education. These people are currently working on the kit which will be ready for printing in mid-May. All the key personnel throughout Malaysia will be recalled to participate in a retraining programme of the new approach.

It is hoped that activities will be expanded to the other two teacher training colleges in Sarawak, and the development of other teaching colleges throughout Malaysia is monitored. More teachers will be trained to get involved in the programme to give manpower support while EEU supplies the expertise and resources.

### **3. Melvin Gumuh, Environment Education Unit (rural education)**

The main aims of the programme are:

- to protect the environment of National Parks and other TPA whilst looking at the needs of people in and around such areas;
- and
- to promote the attitudes and sound management practises relating to the protection of the environment within and around National parks and other TPA's.

The way to achieve these aims is:

1. To gather information on similar projects, Asian and worldwide in order to develop an appropriate methodology and approach;
2. To identify government departments and NGOs who have experience in implementing small-scale projects aimed at quality of life and self-reliance;
3. To conduct research into appropriate and effective methods of communicating ideas to rural communities in sympathy with local traditions and culture;
4. To identify and assess direct and indirect effects of establishing a NP on livelihood of communities located within and around such areas;
5. To identify a community within or adjacent to a TPA where a pilot education and extension project could be implemented.

Within this framework the EEU must be sensitive to the primary aims and objectives of other government departments and agencies. The approach is therefore to seek their cooperation and assistance with small-scale projects to demonstrate the value of an integrated approach to solving problems with rural communities.

Rather than using a mobile education unit relying heavily on audio-visual programmes which rarely achieves any higher levels of awareness of Protected Areas, the more appropriate methodology adopted is:

- to understand the grievances and problems specific to each community;
- to identify the source of problems;
- to resolve problems by encouraging community members to participate in active discussion.

It has been found that community participation can be obtained through the use of traditional forms of entertainment e.g. Nyajat - dance miming, poems, drama. It has been found that by presenting community problems in this way, the community responds with their own solutions to the problems on stage. Such programmes have been conducted in: Pueh (encroachment in WS); Kapit (Orang Utans); Niah; Lawas; Long Lama; Pulau Bruit; Loagan Bunut;

Future aims include identifying a core group of decision-making people who influence directions; increasing public awareness e.g. through newspapers; to identify people in rural areas sympathetic to this cause.

Tuesday 13 February 1990 - Kuching

15. **ORANG ULU NATIONAL ASSOCIATION SARAWAK**

**Ding Seling, President, OUNA**  
**William Ghani Bina, President, OUNA Youth Section**  
**Lah Jau Uyo, CEC Committee, OUNA**  
**Richard Padan Pengiran, OUNA**  
**Baru Bian, Anthony Ting & Co. and OUNA member**  
**Phillip Ngau, OUNA**

**In attendance:**

**Datuk Mohd Jabil**  
**Puan Adawiah Zarariah, Under-Secretary, Ministry of Primary Industries, KL**

Lord Cranbrook introduced the Mission and explained the constitution of its members. He thanked the Association for the four papers which they had submitted (Forests and the Orang Ulu; transcript of recorded story from a member of the Penan; Ecological Effects of Shifting Cultivation; Seminar Warisan Budaya Orang Ulu di Miri; and a map showing longhouses).

Mr Ding Seling thanked the Mission for giving the Association the opportunity to have dialogue with them and thanked the Museum for providing the venue. A copy of the special issue of Sarawak Museum Journal compiled by Orang Ulu Association was presented to each of the Mission members.

Mr Ding started by stating that the Association and community as whole are not against logging as such, but would like to see the forest under sustainable yield management so that those who live in the jungle where there is logging are not adversely effected. He said that the contributions of the logging industries to the state economy which have occurred are appreciated by the Association and that many socio-economic changes have taken place due to logging. However he said that not every one is good and this is where the Association feels that there may be ways to improve the implementation of the practice. It was also questioned as to whether the forest policy is correct and appropriate to the Sarawak situation, and if it is, then whether enough effort is being made to ensure that it is being implemented properly.

Lord Cranbrook confirmed the terms of reference of the ITTO Mission and read out the following general headings that are seen as relevant aspects of sustainability under which the Mission is working: timber production; other forest products; soil and water; wildlife and biological diversity; social values; economic viability; and ecological balance.

Mr Ding said that the aim of the meeting was:

1. to state the stand of the Association;
2. to request deeper study into the policy of sustainable yield and whether or not the present policy is appropriate;
3. to summarise areas experiencing problems;
4. to propose approaches which the Association suggests might alleviate the problems.

He said the Association would like to see a study made of the effect of logging, by going to places where logging has been carried out for the last 20-30 years to see whether the forest has recovered, and if the trees which are supposed to be left, e.g. bilian and enkabang, are still there. Mr Frank Wadsworth confirmed that examination of data is being made by Mission members on the quantity and quality of regeneration and the rapidity with which it is replacing those species which are taken.

Mr Ding said that information from rural areas indicates that many longhouses are suffering strife due to differences arising between the community headmen, who have negotiated with logging companies without the consent of the rest of the community.

Lord Cranbrook said that the Mission had been shown quasi-legal agreements, under the terms 'sagu hati' and 'pemali', in which it is apparent that money has been given by operators to the community and that this money has been distributed to many members of the longhouse. He said some of the agreements include guarantees to ensure that the people who receive this money will not interfere with logging activities and will not take action against it. Lord Cranbrook questioned whether such agreements are general and whether they provide an acceptable means of alleviating the problem. He added that social problems within the longhouse community are detached from sustainable forest management.

Mr Morten Bjorner asked if loggers approach the headman of a longhouse to get his cooperation and this association causes problems, what other approach should the loggers take to get the right cooperation with the people in order to attain sustainable management?

Mr Ding agreed that it is legitimate that loggers should approach the headman but the problem is that the headman is generally illiterate and easily pleased with a little persuasion, i.e. money. This results in decreasing respect for headman. Mr Ding suggested that they should go to the community as a whole, to ask about operating in certain areas; he admitted this might be a slow process.

It was noted the Forest Department such agreements are outside the legal framework.

Mr Baru Bian thought that 'sagu hati' is prevalent in many communities. He cited an agreement made between a logging company and the kampong, including clauses asking the people not to interfere with activities to the extent that, if there was any damage to the logging roads, then the kampong would be liable. He said there are two court cases pending at present on such issues. Whether it is right for the companies to make agreements with the kampongs is debateable. He noted that the headman is only responsible for the administration of the village and that he has no rights over the land of the people and thus has no right to sell off the customary land of individuals.

Mr Ding said that the Association is also concerned with environmental effects of logging and questioned the accountability of transient logging companies who pass through an area. He mentioned the loss of fish and the erosion resulting from the building of logging roads and he compared the situation with areas where there is extensive padi farming where the water is still clear rather than brown as in logging areas. Logging methods and speed at which they work cause a lot of pollution and ecological damage.

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Mr Ding proposed that logging should be operated with active local participation, as many problems arise when licensees are not local. He said, if they are responsible for breaking up the life of the longhouse, they should take on the provision of social amenities for the people. He did not see, ultimately, locals running the whole operation because a lot of skills will be required but there should be opportunities for work in the extraction. He added that the areas should be divided into zones, with some allocated for extraction while others are set aside for farming.

Mr Baru Bian claimed that the way licences for concessions are distributed is questionable. If licences were given to genuine people who are fighting for rights of equality for the natives, this would solve the problem. Mr Bjorner said that the issue of distribution of licences is beyond the terms of reference of the Mission.

Mr Baru Bian said that in many places most workers are illegal workers and local people are not being used. Lord Cranbrook added that it could be argued from the point of view of forest management that the manager should seek the person with the required skill for the job and that this may be his prime concern, although it would obviously be desirable to involve the local community at the same time.

Mr Wadsworth asked: if logging can be done in a way that is sustainable on a 25 year cycle, would the life of the people who are living in logged over areas be satisfactory?

Mr Richard Padan Pengiran was not at all sure that 25 years is sufficient. He said he would need to go to the first coupes and see what the situation is now. He questioned whether the 25 year cycle is actually being implemented. He added that some operators are working almost 24 hours a day with workers making M\$20,000 per month; consequently there is a high accident rate. He said it would be possible to conduct logging in a way which did not damage the supply of the various products of the Orang Ulu e.g. enkabang, rattan, sago, if the rate of logging was reduced.

Mr Baru Bian added that possibly other methods of logging would be applicable, although so far he has not seen any logging activities which do not cause pollution, or which do not damage rattan and other products. He asked whether a study has been made to look into forest policy and called for ecological impact assessment to be made as the Association feels that logging activities are threatening the livelihood of the people.

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16.. **SARAWAK TIMBER ASSOCIATION.**

**Datuk Lau Hul Kang, Chairman, STA**  
**Lau Swee Nguong, Chairman, Sawmilling Sub-Committee**  
**Dr Phillip Ling, Honorary Secretary, STA**  
**Henry Lau, Chairman, Mouldings & Furniture Committee**  
**Yong Nyan Siong, Council Member**  
**Chay Tai Cheong, Council Member**  
**Phillip Choo, Honorary Treasurer, STA**

**In attendance:**

**Datuk Mohd Jabil**  
**Puan Adawiah Zakaria, Under-Secretary, Ministry of Primary Industries, KL**

Lord Cranbrook began by explaining the terms of reference and the framework within which the Mission is working, i.e.: soil & water, timber production, other forest products, wildlife & biological diversity, social values, economic viability, maintenance of ecological balance.

Datuk Lau thanked ITTO for providing the opportunity for dialogue. He said that STA appreciated the Mission coming to Sarawak and that STA were willing to cooperate. He said that only a sample of representatives from STA were present, as it is governed by 35 Council members and 8 sub-committees.

Datuk Lau explained that as a result of environmentalists STA are now faced with problem of the creation of artificial trade barriers in Sarawak timber trade. The Netherlands and West Germany have already imposed such restrictions on tropical timber and US is presently discussing possible bans. STA feels that any ban will reduce the value of tropical timber. If the timber is not bought then the value will decrease; with low value the forests may instead be converted to more profitable landuses for agricultural purposes. The Association feels that bad publicity comes from misinformation and he said he hoped that ITTO will get a realistic view of what is actually happening in Sarawak and that this will encourage the government to find ways to improve sustained yield management to support the industry.

Datuk Lau explained that logging companies work on the official sustained yield system. The licence is granted for 10-15 years and the land is worked on an annual coupe, as designed by the Forest Department, i.e. companies are limited to cut only certain species to certain specifications. Datuk Lau denied that logging has destroyed fishing, as he said there are still fish in the upper rivers. He acknowledged that, when the timber is being cut, the wildlife moves to other areas; but he said the operators are not killing the wildlife, and he did not agree with the allegation that wildlife is disappearing permanently as a result of logging.

He said that most of the workers in the forest, approximately 80%, e.g. tractor drivers, are natives (Ibans) because they are experienced in the forest. They get very good incomes; this helps them to improve their living conditions. He added that the logging operations provide a communication system for the Orang Ulu through the building of roads, and also provide transport for them. There is difficulty with blockades, but he said efforts are being made to talk to the people and offer them compensation for any damage. He said it is essential that they are on friendly terms,

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otherwise the logging operation cannot proceed. The logging industry is a huge and risky investment and depends very much on the market; e.g., in 1984, when the market was bad, many members suffered.

Mr Hans Seip asked for statistics showing employment figures in the logging industry, notably the proportions of employees who are local and those from elsewhere. It was noted that STIDC have this information.

Lord Cranbrook said that the standpoint of STA was appreciated by Mission members, with regard to these issues. He asked: are STA members convinced that the regulations laid down by the Forest Department will lead to a sustainable yield system and will therefore provide the country with forests for the future? Would STA like to make any suggestions for improvements?

Datuk Lau said that STA hope the Mission will make a survey of how much of the total Sarawak forest can generate timber stock and what is a fair number of plywood mills and sawmills to be set up. He said there are worries that too many mills will be established which the raw material supply will not be able to support. At present 24 licences have been issued for plywood mills and 130 for sawmills. He said: if the government could consider an extension of licensing periods resulting in a smaller annual coupe, then definitely the forest can last longer.

Mr Ling reported that, at the last dialogue with the government, STA requested that the licence be extended to 25 years so that the forest cutting would last longer and less area would be logged per coupe, with the intention of extending the resource base. He explained that the whole management is based on selective cutting. When the licence is issued, depending on the area, it is divided into coupes. If the coupes are not completed by the end of 10 years then the opportunity is lost when licence expires. From an economic investment point of view, this is not good.

Datuk Lau said that 10 years is too short. It takes 2 years of preparation to set up the operations and this leaves, therefore, only 8 years in which to complete the logging. With 25 year licences, the raw material can support the industry for a longer period.

Mr Bjorner said: One of the reasons why Sarawak is under criticism from European countries and Green groups is that people do not understand why the forest is being spoiled, when the logs disappear elsewhere. He said that it is very important that operators leave some of the trees for a while, in order to support Sarawak's own factories for the future. He said people understand the commitment of investment which has been made, but cannot understand why 14 M cubic metres of logs were exported from the country last year. If something is done about this quickly, then a lot of the external pressure will go.

Datuk Lau said however, that it is not STA's position to say how production can be reduced. If we have a licence we have got to cut and have to produce from each annual coupe; otherwise there is no more value after the licence expires. This is the reason why members have requested longer term licences, so that production will automatically be reduced. He said members are also worried that the amount of stock left in the forest is uncertain.

Mr Bjorner stressed again the urgency of the situation with the increasing likelihood of a ban, which would be disastrous. He said he hoped that a forceful pressure group from within the industry, under STA, could be built up rapidly; it should be



the industry who requests the 25-35 year licences in exchange for the long-term investment being put in by companies. He added that all the surrounding countries are now doing a lot to maintain their forests, e.g. Indonesia, Philippines. They are keeping their raw materials to last for ever, by reducing the volume and adding the value. But Sarawak is letting raw material flow out.

Mr Ling said that the government had looked favourably upon this suggestion of longer licences when it was proposed. He said the Association believes it is carrying out management to the best of its abilities but welcomed any suggestions for improvement.

Mr Henry Lau said that, originally coupes were based on 25 years; but this period was reduced to 10 years, initially to clear land other purposes, e.g. dams, but it was then carried on. The private sector is now beginning to think that, from an operating point of view, the quantity of timber is not as much as the government may estimate. Therefore industry feels that if it can revert to a longer license period, e.g. from 10 to 20 years, this would reduce the volume of output. For instance, extension from 10 to 20 years would reduce output by 50%; this is a crucial factor.

Mr Bjorner asked whether the Association would agree that for the best of the industry they would be prepared to reduce the annual cut and spread it over double the time.

Mr Henry Lau said that at present about 10 tons per acre are being taken, equivalent to three trees (merchantable timber).

Mr Alf Leslie concluded that the licensing system as it operates at present appears to be inconsistent with the continuation of sustained yield management. The theory of sustained yield management of the forest is that what is left behind will be able to provide an equivalent cut at the next cycle. The sustained yield capacity of the forest for timber production is about 9M cubic metre pa; at the moment cutting is at a rate of 14M cubic metres pa. Consequently if the industry decides to pursue sustained yield, it will have to drop 5M cubic metres pa. Mr Leslie questioned whether that could be done, in terms of economic survival. He said it might be possible for STA itself to work out how to minimise the damage to its member companies.

Mr Henry Lau said that, inevitably some members would be affected and it is therefore unlikely that all members would agree to such a change. He said it is difficult from a member's point of view as the industry is governed by profit; in the natural cycle of supply and demand, it is difficult to slow the process down once it has started.

Lord Cranbrook asked: are STA members satisfied that the working methods at skid/chain-saw level are taking care of the forests? Are these workers being sufficiently controlled, so that there is regeneration in the forest to provide the next crop with the same yield?

Datuk Lau admitted that, when commercial species are taken, inevitably some of the other trees get damaged, but next time around, it may be that other species which are coming up can be used.

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When asked whether it is anticipated that there will be a different composition to the forest next time, Mr Ling confirmed that the species will be there but that the girth may be different. There is a restriction on minimum girth below 60cm so the next cycle will consist of more trees 60-80cm but less volume at >80cm.

Lord Cranbrook suggested that STA might look into the possibility of carrying out their own assessment studies, rather than relying on the government. He said they might consider sponsoring their own research student to do an internal survey of sustainability.

Mr Bjorner added that it is important that STA be more active and should put itself forward as a powerful pressure group; STA should not leave policy to government alone.

Mr Henry Lau noted that the government is now encouraging STA to come together in forum for discussion and he said maybe ITTO can promote further cooperation.

Mr Leslie asked: would the STA be prepared to establish a sustained yield management forest research foundation, so that independent research could be carried out? He said it is most important that industry is aware of what is happening in the forest, as at present operations are overcutting in the size classes but not on species. He added that the merantis are being utilised in same proportions as they are present in the forest so that if the assumptions about 25-35 years are right, they will continue. However he said that Ramin and also Kacu (?) and Karui(?) are being overcut, although there are still a number of non-dipterocarps at lower levels. The future forest will therefore have a greater proportion of non-dipterocarps, and the size of logs is going to be much smaller.

Mr Henry Lau agreed that size of logs is important. If the minimum diameter is increased from 60cm for the next cut, so that the smaller sizes are not cut, this will help the situation.

The question of enforcement of such regulations was mentioned and Mr Ling said that he appreciated that, at present, the Forestry Department staffing level is still the same as it was 10 years ago; which makes effective implementation of policy very difficult.

Lord Cranbrook took note that STA would like to see more staff involved with enforcement. He then asked about training for drivers of tractors and chain-saw operators with regard to damage to the residual stand.

Mr Ling said that there are now logging training schools but he suggested that a more effective way of training workers would be to have a number of Field Training Officers going out to the camps and training on site. At present the majority of workers learn in the field by experience.

Mr Bjorner suggested leaving the amount of cutting that is carried out to the amount of workers available so that there would be no manpower shortage and no need to import labour from Kalimantan.

Mr John Francois asked what has happened so far in cases where licences have expired. Mr Ling said that some have been renewed and others not.

Mr Bjorner responded to Mr Lau's comment that when the sawntimber market is good and price is up, companies tend to cut more. He thought the Sarawak market will soon be good because of the export levy being imposed by the Federal government in the Peninsula, which will give the home market a boost. However, Mr Ling disagreed. He said the present market is very sluggish because Europe bought a lot during the end of 1989. He said Sarawak would eventually get some benefit from the effect of the levy but as Sarawak is so far behind the Peninsula with regard to processing and costs of production, this would be limited.

Tuesday 13 February 1990 - Kuching

17. **NATIONAL PARKS AND WILDLIFE SANCTUARIES, FOREST DEPARTMENT**  
(Ref briefing document No.2)

1. **Abang Hj. Kassim Morshidi, Deputy Director of Forests**

**Policies of National Parks & Wildlife Sanctuaries**

Abang Kassim introduced the issue by explaining that at present there is no published policy on National Parks and Wildlife Sanctuaries (NPWS) as the draft has not yet been formally approved by the government. Instead there is an informal policy which acts as a guideline for the Department. Sabah is the only Malaysian state with a proper policy.

The Wildlife Sanctuaries are like the National Parks except that they do not allow any recreational facilities. They are purely for scientific purposes and they attempt to protect as many habitats as possible to allow animals to breed and be protected. Only persons doing research are permitted entry. The Sanctuaries are not open to the public.

The number of staff being proposed for NPWS alone with its six divisions is 600+. At the moment there are only about 100+ staff and NPWS is using help from all other sections.

Abang Kassim summarised the information as seen in Document 2.

**Further information**

Abang Kassim explained that in 1976 NPWS covered 5% country, but that the new proposals have allocated 10% of the total area of Sarawak, which it is hoped will cover all the main areas/habitat.

Lord Cranbrook pointed out that in addition to preservation of special features, it is important from the point of view of sustainability, that broader areas of ordinary jungle, e.g. lowland swamp forest and mangrove should also be included.

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Abang Kassim said that the Salak area, near Kuching has been protected for its mangrove and that the Department is working to get an area in Lawas also. Meludam outside Batang Lupar is an area which has been protected for its peat swamp forest. Abang Kassim said the 10% target does not include the actual reserves.

Lord Cranbrook said he would like to see the criteria for the proposed nature reserves, which will be specifically designated for special features and special habitats? He said that ideally every major urban centre ought to have access to some kind of wildlife area and he asked whether any of the parks were planned directly in relation to human population.

Abang Kassim said there are Forest Recreational Areas (FRA) being planned, one at Tutong; the Department is also working with Limbang District Council to locate one there to be open to the public. In addition, in 1987 a study was made of the land bordering the Kuching - Miri highway and efforts are now being made to introduce scenic reserves so that people travelling can stop at these along the way.

Lord Cranbrook said that the corridor concept for birds is potentially vital to conservation. At present it runs from Sebuyau to Sibu to Miri (ref. paper by Paul Macken).

Abang Kassim said that Pulong Tau is a further area which has been designated largely as a result of local pressure from people concerned with the conservation of fish.

Dr Duncan Poore asked whether there are any plans to introduce a scatter of areas of undisturbed forest as small islands of untouched forest to allow for the continuance of undisturbed animal and plant life, which might be important for the biology of the forest. He said it is important that this covers typical forest, not just unique areas.

Abang Kassim said that if the Natural Reserve policy is approved then then it may be possible to introduce this idea, with the areas being excluded from concessions. Lord Cranbrook added that such areas might actually have to be quite large in order to be of any biological significance.

Dr Poore observed that peat swamps are not only a vegetational feature for protection but also an important physiographic feature and that they are better represented in Sarawak than elsewhere. He asked if there is any possibility of a complete peat swamp system being brought into conservation.

Lord Cranbrook referred to the dispute at Loagan Bunut regarding fishing. Abang Kassim said that the problem is that the people do not understand the concept of National Park conservation and that they feel they have been given the right to hunt. At certain times of high water fishing is restricted, and tourists are only allowed angling. He confirmed that the stream which forms the breeding ground for fish in the lake is also included within the protected area.

Lord Cranbrook noted that there is much too much hunting going on in the country. Abang Kassim agreed although he said he thought that the figures in Julian Caldecott's report are exaggerated. He said that the number of protected species has been upgraded and that efforts are being made to employ Game Rangers where possible, who can be present 24 hours to protect areas. He stressed however that the

main objective is to change the attitude of people to wildlife. Gun licences are no longer being issued and old licences are not renewed.

At present the number and effect of enforcement staff is negligible. Abang Kassim said that the basic policy for species conservation will be to allocate a sufficient number of protected areas, as opposed to having a long protected list and a lot of wardens. The job of the staff gazetted as enforcement officers, will be to protect the designated areas. He added that the number of protect species outside areas is now over 100 species. This follows CITES methodology using grading system. Illegal plant export has also been problem particularly with low rates of fines imposed. However it is hoped these will now be raised.

NPW section was previously subordinate to forestry, but now such conservation takes priority.

Lord Cranbrook noted that environmental education has started well but needs much more strength. Abang Kassim said that his ultimate aim is to put Sarawak, as a state, ahead of all other Malaysian states regarding education by working with teachers colleges and trying to increase the number of staff to work on both extension services and at schools. Efforts are being made to inject the subject into school syllabuses. He reported that since the beginning of the year there have been six groups of trainees at Samunsam and later on they will be taken to Bako. He said this is to try to change the mentality of people and it is hoped that by educating young ones they might influence the old to make them understand why parks are there and why should not hunt.

**2. Francis Gombek, Executive Forester, NPWO**

Samunsam Wildlife Sanctuary  
(Ref. briefing document No.6)

Francis reported that 20 patrol officers have recently been recruited and given guns to act as rangers as the police not able to cope with poaching. The problem is that those coming into the reserves illegally are armed and have no respect for the patrols.

The bulk of the area of the reserve to be extended will be to the south - Gunong Pueh Forest Reserve - which is still under concession. It is hoped to get that once the logging has stopped this area can be included. Meanwhile efforts are also being made to extend other areas to the North and East.

Francis ran through briefing document 6.

**Further information**

Abang Kassim said that there is PhD work being done at present research the effect of logging on wildlife. Lord Cranbrook said that it is difficult to distinguish the different effects of hunters and loggers and he asked what proportion of the chain-saw drivers carry guns. Abang Kassim said that some do.

Thursday 15 February 1990 - Lundu

**18. DISTRICT OFFICE, LUNDU**

**Micheal Saweng, District Officer**  
**Ngul Slew King, National Parks and Wildlife Officer**  
**Haji Saidi bin Wahie, Section Forest Officer, Kuching**  
**Chang Pat Foh, Ministry of Resource Planning**

**Statistics for Lundu District**

**I. Area - 1812.3 km<sup>2</sup>**

**II. No. of Kampung - 89**

**Breakdown of community of the Kampung**

Melayu	23
Melanau	17
Bidayuh	34
Chinese	15

**III. Population 26697 (based on 1987)**

**Population Breakdown**

Melayau	7774	(29.1%)
Melanau	93	(0.4%)
Iban	4660	(17.5%)
Bidayuh	9703	(36.3%)
Chinese	4279	(16.0%)
Others	188	(0.7%)

**Occupation Breakdown**

Farmer	75%
Fishermen	10%
Labourer	6%
Businessman	3%
Others	6%

**IV. Land Uses**

Agriculture	246.1 Km <sup>2</sup>	(13.58%)
Permanent Forest	951.0 Km <sup>2</sup>	(52.47%)
State land	554.6 Km <sup>2</sup>	(30.61%)
Housing	60.4 Km <sup>2</sup>	(3.33%)
Mining	0.2 Km <sup>2</sup>	(0.01%)

**Agriculture**

<b>AREA</b>			(ha)
Rubber	2508		
Oil palm	14184	(Felda)	
Cocoa	1992	(include Salcra)	
Pepper	323		
Fruit Trees	1297		
Coconut	1980		
Padi	2322		

**Permanent Forest**

Pueh Forest Reserve	25006
Sampadi	32519
Tg. Datu National Park	1214
Gading National Park	4196
Samunsam Wildlife Sanctuary	6092
Sarawak Mangrove Forest Reserve	9886

**MAJOR DEVELOPMENT PROJECTS****1. Plantation**

Felda	14184
Salcra	766
	6000 proposed

**2. Silica Sand (SEDC) Kpg Temelan**

Area - 11 ha

Investment - \$7.5M

Estimated output - 100,000 metric tonnes per year

Length of output - 7 years

Estimated profit:

	\$
1990	226,237
1991	1,355,664
1992	13,778,414

**3. Sericulture - Silk (SEDC) Gunung Pueh**

Area 180 acres

350 (proposed)

Cost estimated \$9M

Output - 250 box per month (\$2-3M per year)

## *The Promotion of Sustainable Forest Management*

### 4. Others

Health -  
hospitals - 1  
health centre - 1  
Klinik Desa - 3  
Doctors - 3

### Education

	Students	Teachers	Class
Primary School	3833	234	155
Secondary School	2182	101	59

### Additional Notes to Statistics:

Sarawak land rehabilitation development (Salcra) - this is old land under NCR which has been converted to a cocoa cooperative.

The silica development is a major industrial programme of \$7.5M investment for making glass. Major importer is Japan and it is linked with Mitsubishi. A few hills have been cut down for this.

It is not certain whether the Acacia mangium plantation will continue as forest reserve as it may be turned into plantation.

After encroachment has taken place, it is largely the squatters who are given jobs to maintain the area which has been encroached upon. They have no rights to the land but are employed to prevent them creating trouble again.

The silk culture at Pueh is a private investment but semi-government company on stateland forest which has been logged over. At first shifting cultivators came in and then mulberry trees were planted. It is expected to use about 700 local labourers. It is intended that the mulberry trees be farmed out, i.e. sub-contracted to local people so they grow the trees themselves and the centre acts as a nucleus.

With regard to social improvements the DO said that local people are most interested in transportation. Most of villages are connected to Lundu by gravel roads but problems during wet season. With good roads they have access to a steady market for products in Kuching. There is already a fairly good standard of health care and all children are given opportunities to go to school up to form 3.

He said that lot of the young once graduated from secondary school migrate to Kuching, although now that there are more local activities e.g. plantations, people are beginning to realise that it is better to stay near the kampong.

Haji Saidi said that encroachment into Sempadi Forest Reserve has increased since early 60s but action has now been taken and the areas that were occupied by shifting cultivators are now being cultivated with oil palm in the forest reserve.



Lord Cranbrook asked why the serious encroachments into Gunong Gading had not been prevented. The DO said that the people have been asked repeatedly to stop, but they return at night and there are not sufficient staff to prevent them. Mr Ngui explained that there is only one national Park forester for the whole park and with a much greater number of shifting cultivators there is little that can be done. If they are caught they are not allowed to harvest the rice and their chain-saws are confiscated, but there may be a minimum fine, which is not substantial enough to act as a deterrent.

Mr Chang reiterated that the main problem is one of enforcement and the insufficient manpower to enforce law and order. He said that the people have to earn a living and get rice to eat and so it is worth the risk of being fined and imprisoned. They continue to encroach moving to a new area brings a much higher yield.

The DO said that the increased population has also encouraged movement to new land. He said that he had just received an application for a licence from all the community headmen for Gunong Gading to request that the government licences out the National Park to the people to enable them to cut down the trees and farm padi.

The DO said that wild meat is quite important and the idea behind using Samunsam as a breeding ground is good. However, although this principle has been explained to the community leaders, it is disregarded, generally because they do not care, rather than because they do not understand.

The DO explained that most villages have a gravity freshwater supply and that catchment is supposed to be excluded from licence area for concession. In most cases these are left out, but often the local people apply for the licence and fell themselves. Although in general small-scale logging and planking on the spot tends to do little damage to the forest, the people then start coming back to the contractor which is when the problems start.

Lord Cranbrook asked whether it would be appropriate to make these areas into communal forest but the DO said that this would mean that the people themselves would abuse the land which would lead to increased cutting.

The logging companies are regarded as sources of employment for people. There are not many substitutes for employment so that during a timber boom people work in the companies but then many go back to shifting cultivation.

For Sematan sawmill logs are imported from Indonesia as they are much cheaper.

Dr Poore asked whether further extension works could be done to promote the idea of preserving the forest. The DO said that there have been opportunities to explain that permission has to be given by DO for timber to be felled for other than domestic use. However the Land Code is disregarded, sometimes because they feel that the land belongs to them anyway (makai menua). Sometimes there is a problem of overlapping land claims between kampongs. Some logging companies do give out compensation agreements although these are not recognised by the law.

Thursday 15 February 1990 - Lundu

**19. DIALOGUE WITH COMMUNITY LEADERS, LUNDU DISTRICT**

**Pemanca Suhaili Jantan, Rambungan  
Pengkulu Mos Sulong, Sematan  
Pengkulu Goh Meng Joey, Sematan  
Pengkulu Mina ak Kalum, Pueh  
Pengkulu Nyongglem, Selampit  
Pengkulu Kalong, Sg. Lundu  
Pengkulu Adi Hol, Stunggang  
Pengkulu Suut, Sileng**

**In attendance:**

**Micheal Saweng, District Officer  
Chang Pat Foh, Ministry of Resource Planning  
Ngui Siew King, National Parks and Wildlife Officer  
Haji Saldi Bin Wahie, Section Forest Officer, Kuching**

The District Officer welcomed the community leaders and introduced all the members of the Mission. Lord Cranbrook said that the Mission was grateful for the opportunity to meet the leaders and to speak with them and thanked the District Officer for arranging the meeting and for agreeing to act as interpreter. Each leader was given the Mission card and the Terms of Reference were read out. It was explained that the Chief Minister of Sarawak himself went to Abidjan to invite the ITTO Mission to take place.

The leaders were asked about the problems resulting from the logging industry:

Pemanca Suhaili Jantan expressed the following grievances suffered by his people are a result of the logging:

1. extraction of rattan from the forest;
2. the building of roads for logging operations cause pollution and erosion and the silt brought down by the rainwater fills up the pools and rivers.
3. there is a consequent destructive effect on the fish in the rivers. In his particular case, rivers in Rambungan area have lost their fish supply.
4. there is a big decrease in game animals in the area.

He said he recognised that timber is a major source of income for Sarawak and suggested that steps in replanting and rehabilitation of the forest be taken so that the resources that are valuable will continue to be sustainable. He also mentioned the occurrence of water pollution at Kampong Selambit.

He said he was certain that if timber operations ceased, the river and game animals would be rehabilitated.

Pengkulu Suut confirmed the detrimental effects on both wildlife and river. He said that rivers are important for both HEP and water supplies and if the forest continues to be felled, then it will take a long time for the forest to regenerate. He said he

appreciated and welcomed the coming of the Mission and was also happy that the state government had allowing them to present their views.

Lord Cranbrook said if the people are concerned about the loss of forest and wildlife, why has Gunong Gading suffered incursions from people from this area cutting down forest which is meant to be preserved.

Penghulu Suut said that when the Japanese came they allowed forest products to be taken in an uncontrolled manner and the same thing happened during the post-1947 colonial period so that now Sarawak is within Malaysia, this process has carried on.

Lord Cranbrook questioned why if the people of Lundu area value the forest and the wild animals, are they growing hill padi in the forest which has been set aside by the Forest Department in order to make a reserve to preserve the wildlife. He said it is very difficult for Mission members to see where the wishes of the people lie. Whether the people mostly wish to have forest to provide game and timber or whether they wish to cut it down for farming land?

Penghulu Adi Hol agreed with the points made but added that it is population pressure on the land which has contributed a lot to this problem. He said that the Forest Department has been very strict regarding the entry into Gunong Gading but that the result of the Japanese occupation destroying so much forest, was a gradual breakdown in morale leading to more timber being felled. He said that decreased animal and fish populations were not just because of the activities of the timber industry but more so because of population pressure on these resources.

Penghulu Mina ak Kalum from Kampong Pueh, said he had very good cooperation from the Forest Department, so much so that he has not had any problems with water supply for his kampong. However, there is no big river there so the fish problem is not relevant to him as fish come from the sea. He said that the population of Pueh has grown and he wanted to ask whether the Forest Department might consider breaking up some of the forest reserve to give land to the people. He said this request came from several other kampongs within the vicinity of Gunong Pueh. The land that his kampong can use communally has been reduced because of silvicultural practices and there is also a proposal for the establishment of a youth camp next to the village. He said the amount of secondary forest is limited and population increasing at rate of 4 babies per month.

Mr Wadsworth asked whether he felt that there are ways to log which would eliminate or reduce the amount of damage. Penghulu Adi Hol said that the authority to find a solution to reduce these problems lies with the Forest Department but he suggested that within these areas, all the trees be completely felled and afterwards the Forest Department should come in and start replanting. He said that not only timber but also other plants should also be cleared. The villages may not have the capability to replant the forest but Forest Department may be able to. He observed that on the Bau road, the Forest Department has successfully replanted a big area of forest which has taken little time to grow.

Lord Cranbrook asked whether Penghulu Adi thought that a plantation of Acacia mangium would produce timber of the same quality as the natural forest and whether it is likely to support game and whether the streams will support fish. He said it was strongly the view of the Group that natural forest has a richness in productivity, timber and diversity of wildlife which cannot be repeated in plantation.

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Penghulu Adi agreed with Lord Cranbrook that the natural stands of forest should be better than those replanted.

Haji Saidi pointed out that the plantation of Acacia mangium is over an area that has been affected by shifting cultivation. The main objective of this replanting was to restore the fertility of the soil. He said there was no economic objective for this plantation but it is an attempt to re-forest shifting cultivation areas for which legal action has been taken and which can be planted with fast-growing species to restore the soil.

Penghulu Nyonggiem said that agricultural measures to relieve pressure on the land, e.g. sericulture, agricultural extension schemes, are satisfactory for younger people but the older generation feel these projects cannot affect them as much.

Mr Leslie responded to the suggestion that the right way to manage the forest would be to clear fell every plant. He said there would be great difficulties in this because there is so much forest land that Sarawak would have to orient itself to overseas demand, not to local demand which is very difficult to anticipate.

Mr Leslie said that in Queensland there is similar forest but logging takes place without any damage to streams, wildlife, and no erosion. The roads are constructed in such a way that there is no erosion and the area treated is isolated from the streams. Wide strips of untouched forest are kept around the streams and the drainage that comes from the roads is limited so that it never builds up to a big flow of water. There are many drains under the roads so that runoff is never allowed to go straight downhill, but is redirected sideways. He asked if they had any suggestions which could strengthen the Forest Department's control of the land and how they could assist.

Penghulu Adi said he was not in a position to suggest solutions to this problem but hoped that the ITTO Mission will be able to recommend ways to minimize these problems.

Pemanca Suhaili said that the Forest Department is responsible for the forest and development of forest industry. However, when the Forest Department is weakened it is because the local people do not follow the rules within the forest ordinance e.g. Gunong Gading area and logging cannot be stopped.

Penghulu Kalong said that Forest Department are responsible for the safeguarding of the forest reserve but because of certain lapses this has led to shifting cultivators going up the mountain, which as a result affects the water supply. He said that when an area is considered to be a reserve, people should not go into the area.

Mr Leslie said he had hoped to hear a suggestion that the local people and Forest Department should together work out which areas should be reserved for what purposes with the assistance coming from local people to ensure that rules are enforced so that it might be a joint cooperative effort.

Lord Cranbrook asked how many people in the communities make money from rattan.

Penghulu Mina ak Kalum said that in Pueh rattan is used for making baskets and mats for domestic use, but not to sell.

Pemanca Suhaili said that in his area the collection of rattan is seasonal and amounts to about 1 day a month with about 100 people involved in gathering. He said with regard to communal reserves for villages, people in the kampong buy timber for supplies as there is not much left which has not been licensed out.

Lord Cranbrook then asked how many make money from selling game or rely on jungle products.

Penghulu Nyonggiem said that in his kampong, the hunting/fishing is a seasonal activity. When people are freed from agricultural activities, they hunt game or fish, but nobody relies on it, especially now when timber companies bring in bulldozers, fruit trees for animals are also being cut down and so vegetables and meat are bought from the market.

Mr Hans Seip asked if it is possible for rice to be brought under permanent agriculture.

Penghulu Nyonggiem said the Agriculture Department should budget for more wet-padi plantations so that the people would not rely so much on shifting cultivation. He said there is more than enough wet-rice for his kampong but intensification of wet rice would generally be welcomed.

Penghulu Mina ak Kalum said he had requested that the state government rehabilitate the drainage system in his wet-padi scheme. He said that Pueh belongs to the state and the DO but that the forest should be treated like a land-bank so that whenever land is required for agricultural purposes, then people can just take the land. However, Penghulu Adi did not agree with this. He said that the forest belongs to the people, not to the state but that as the people are so involved with the forest, they as well as the Forest Department should also be involved in forest management.

Saturday 17 February 1990 - Sibul

## 20. MUDAN-RETUS FOREST MANAGEMENT UNIT

Mr Ngu Ming Kul, Manager  
(Ref briefing doc No.11)

Mr Ngu welcomed the Mission to the sawmill which was built 32 years previously. It produces approximately 30,000 tons logs per year and 1000 tons sawn timber per month. Most of the sawn timber is of Shorea group: 50% is Alan Batu, 30% Ramin and the rest is light hardwoods.

The mill runs two shifts of 16 hours per day and there are ?? workers. There are another 200 workers inside the forest. The workers in the sawmill are locals; those in forest are from the area around the river estuary.

The royalty is collected at the mill. 80% timber is sold for local Sarawak consumption and 20% is exported. Some goes to Hong Kong and some to Korea.

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The Alan trees are hollow and similar in size which makes processing easier. However Mr Ngu said that the mill has had experience with dealing with mixed timbers and therefore if future crops have a varied composition of timber, this should not pose a problem for the mill.

The logs are exported to Japan and Taiwan and the lower quality ones go to Hong Kong.

Sunday 18 February 1990 - Sibü

21. SARAWAK CONSUMER ASSOCIATION (SIBU) & INSTITUTE FOR COMMUNITY EDUCATION

Wong Meng Chuo, Director, Institute for Community Education  
John Phua, Institute for Community Education  
Doreen Wong, Institute for Community Education  
Clement Lim, Consumer Association of Sarawak, Sibü Branch

In attendance:

Cheong Ek Choon, Assistant Director, Forestry Department  
Datuk Mohd Jabil  
Dania Godeb ak Goyog, Forest Department

At a preliminary meeting on 17 February, Lord Cranbrook had explained the terms of reference of the Mission and the composition of the Mission group. He said that the Mission's programme during the second visit had been organised by the Forestry Department to correspond with the wishes of the Mission members. The next (third) visit will go to Miri Division.

Mr Wong and colleagues expressed concern that the rate at which two particular concessions are being worked, might be excessive. He did not know whether these concessions are part of the Permanent Forest Estate (PFE) or on stateland and destined for a change of use anyway. The point was also raised that it is difficult to find out who is the concessionaire on any particular concession.

Datuk Mohd Jabil said that any member of the public can at any time write to the Director of Forests to ask whether a particular operation is being carried out on PFE or stateland. Maps showing plans are not confidential, if it is not classified information. He suggested that this organisation should write to Director of Forests, Kuching to make enquiries about this particular concession.

Lord Cranbrook said that the Mission values openness in discussion. He said that it is concerned with social attitudes in so far as friction this can be an impediment to smooth operation of the system and thus can affect sustainability. He hoped that any feeling that information is being withheld by the public authority could easily be eliminated.

Mr Wong said that the wrong impression may have been formed when the Divisional Forest Office was approached, which seemed very secretive. However he

acknowledged that the correct procedure would be to contact the State Forest Director for information.

Discussion referred to the paper tabled by Mr Wong:

## ENVIRONMENT

It was noted that the following be added to Paragraph 1 of the paper: "It is acknowledged here that there are other important factors e.g. CFCs and other industrial pollutants that contribute to global warming."

Lord Cranbrook referred to Norman Myers' report which states that approximately 50% global warming gases are attributed to the destruction of forests. He questioned the method of calculation for this figure and mentioned that a House of Lords report on tropical forestry suggests that 20-25% CO<sub>2</sub> worldwide is due to forestry activity. However he acknowledged the point being made.

Dr. Poore added that there is reasonable agreement about the order of magnitude regarding CO<sub>2</sub> but that the problem lies in what is considered to be deforestation. Shifting agriculture, plantation and logging all have different effects. He said that the Mission is not in a position to make accurate quantitative estimates of the extent to which logging removes standing biomass and to what extent agriculture replaces it. If logging is well conducted and forestry operated in a sustainable manner, the effect of logging on global warming will be quite small. If the forest is seriously degraded or removed, then effects will be greater.

Lord Cranbrook said that the most deleterious effect is deforestation for agricultural purposes which permanently removes tree crop and which leaves a herbaceous crop which cycles the carbon rapidly and does not serve as a carbon bank. In a sustainable logging system there is a net outflow of timber which is not immediately recycled as carbon, if the timber is stored and not combusted. Then, if forest regenerates, that becomes temporary carbon sink. So because there is a certain proportion of the timber removed and stored in the form of buildings and not immediately recycled to the atmosphere, worked forest in fact does withdraw carbon from the atmosphere in a way that natural forest does not, where trees die and the process of rot returns CO<sub>2</sub> to the atmosphere. Untouched forest is a standing mass of carbon which is recycled and has a nil effect on changing levels of carbon dioxide. If forests are logged and regenerated to full volume, then they are withdrawing a little carbon at each cycle.

Dr Poore advised Mr Wong to be cautious of estimates on global deforestation. The Friends of the Earth report for Sarawak states that 2,700 Km<sup>2</sup> are logged each year and that this logging must be considered as "total deforestation". Yet logging is not total deforestation as a large proportion of the trees are left. He said that FAO are presently doing an assessment based on satellite imagery which may produce more reliable estimates.

Lord Cranbrook further criticised Dr Myers' report in which he converts all timber that has been removed into carbon dioxide, which is very inaccurate. The conversion rate of timber in Sarawak varies from 40-52% in a sawmill. Most sawmills burn their waste, so that about half of what is taken out as a sawn log is recycled as CO<sub>2</sub> and half goes as a sink of some duration.

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Mr Wong and his colleagues were reassured that the Mission is well aware of the problems of siltation of stream beds, pollution and flooding and that these issues will be addressed in the report.

Mr Wong conceded that it is not practical to stop logging completely in context of Sarawak but he said that shifting cultivation also cannot be stopped because it is a way of life and that there should be sympathy for this. Doreen Wong added that logging is done on a large scale and very fast, compared with shifting cultivation which she said covers only a small area at a time. The people do not fell more forest once they have a few patches.

Lord Cranbrook said that as a contributor to CO<sub>2</sub> release, shifting cultivation probably contributes more per hectare than forest. However he said that the Mission is aware of this issue, especially in SW Sarawak where there is great pressure on the forest resource and that it will certainly have to be discussed.

Mr Wong said he would like to know whether this kind of logging practice is actually sustainable and Dr Poore confirmed that this is a fundamental part of the enquiry.

Mr Wong mentioned that longhouse people have noticed a change in climate as soon as loggers finish operations and he asked whether logging contributes to local climate change.

Lord Cranbrook agreed that this was a new point, not previously raised with the Mission. He noted that in the Belaga area there has been a bad drought which has not been experienced previously.

Dr Poore said that work done in Peninsular Malaysia by Dunlop, showed that if a large area of land is totally cleared of vegetation, as it is in the planting of rubber, then rainfall in that area decreases compared with surrounding land, while the area is exposed. Once the bare ground changes and becomes green, it rapidly loses this convection effect. He added that with only one dry period it is difficult to confirm that this is due to logging.

Doreen Wong suggested that this might be a useful topic for a research project, as it is important to the people.

### **ENVIRONMENTAL IMPACT ASSESSMENT**

Doreen Wong quoted a newspaper cutting in which Mr Law Hieng Ding, Deputy Minister of Science Technology and Environment, is said to have stated during the last sitting of Malaysian Parliament in March 1989, that any company involved in felling of logs in Sarawak is required to conduct an EIA report.

Lord Cranbrook said that present information was not clear, as to whether EIA regulations are enforced in Sarawak.

Datuk Mohd Jabil said that Federal Law is made for Federal purposes but that it has to be formally adopted by particular state before it is applied.



Lord Cranbrook said that the Mission will seek clarification as to whether or not this Federal law has been ratified by Sarawak state law. He added that he would be glad to see the cutting, if available, and Mr Leslie suggested checking Hansard for its context.

Mr Wong drew attention to the fact that the law was passed by Federal government almost two years ago (1 April 1988). He said that by the time it is enforced the logs will have been finished.

#### ECONOMIC SUSTAINABILITY

Mr Wong pointed out that although the timber industry is an important industry to the state (47% state income), yet the royalty is lower than that for petroleum as an ad valorem value of the final price.

Mr Leslie said that royalty is a very relative figure depending on how timber is measured, where it is measured, and how it is calculated. It used to be that 10% of price of timber would go as royalty but he said he estimated that in Sarawak it is now nearer to 20%, if all the timber is measured.

Lord Cranbrook agreed that the incentive aspect of royalty on logging has not really been considered by the Mission so far. Dr Poore said he would need to examine the proportion of revenue which is derived from forestry which is reinvested in forest management and reforestation and also the continuance of revenue at this level. At the moment logging is going fast but there are two varying situations: in PFE it is hoped that this will become a sustainable operation and will continue to yield revenue from logging. The better it is managed the higher that revenue will be. However, logging is also occurring in Stateland forest which may not continue as forest, and therefore the high rate of logging occurring at present is higher than that which will ultimately be sustainable because it is a one-off harvest for land being converted for agricultural purposes.

Doreen Wong questioned the rate of income received from timber and whether this same level of income can be maintained if these state forests are finished. Lord Cranbrook assured her that this is what is being looked at in the study. Mr Hans Seip added that it was being noted how the industry is developing and whether there can be a cut in the amount of volume with income maintained while the industry is being built up.

Mr Wong observed that sometimes Stateland forest is which is changed to agricultural land is not always immediately ready for use, therefore it is being destroyed unnecessarily.

Mr Leslie said ideally one would want to mark out in advance which land is suitable for forest and which for agriculture. However this has not been done and as it is not clear which land is suitable for agriculture, some gets cleared in anticipation and is then left for years. He said that this bad planning not unique to Sarawak. As far as sustainability is concerned, that land then goes out of productivity for anything. It means that the forest has been cashed in on initially and this might effect the state's income if a substantial proportion is coming from such sources because when these dry up they will not be compensated for.

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Lord Cranbrook said that the report is certainly going to look into the balance between PFE, forest reserve and stateland forest and try to relate sustainability to the relative areas of these forests.

It is understood that the Forest Department is now preparing management plans for stateland forest and is managing them as though they are PFE until their fate is known. There are certain proportions of stateland which the Forest Department would like to see brought into PFE and those concessions are being managed as PFE at present.

Doreen Wong asked what exactly is meant by managed and if the two examples they have cited are being managed, as it not be done at that speed.

Lord Cranbrook said that the speed of logging is being considered and that it is of interest to the Mission that there is the impression that it is carrying on too fast. He added that the Mission hopes to publish with the report a map of stateland forest under management agreement.

Mr Leslie said that according to theory managed forest is cut at rate of 1/25 area per year. If the forest is cut at rate greater than 25 years, either it is not being managed or it is land which is not going to be managed.

Doreen Wong stated that their forest is being cut at a rate of 3 acres per minute and asked what the effects of monocrop plantations might be.

Lord Cranbrook said that, when assessing "sustainable forestry", the Mission included not just trees but also the broader ecology of forest and wildlife management which is a part of the duty of the Forest Department. He said monocrop plantations are not regarded as a substitute for natural forest but may well be a weapon in armoury for attaining sustainability. Dr Poore added that monocultures have their place and that there would be no possibility of feeding the world without them, although they would not be wanted everywhere.

### **WILDLIFE / GENE POOL**

Lord Cranbrook confirmed that the Mission is making an assessment of all aspects of wildlife gene pools and that the uniqueness of the wildlife is recognised.

Doreen Wong brought up the issue of the disappearance of some types of fish. Lord Cranbrook said one cannot blame all these things on the Forest Department. It is evident that the shotgun has a been major influence in reducing game and so have inappropriate fishing methods such as poisoning the river.

Doreen Wong drew attention to a recent article in the Sarawak Tribune in which it was stated that the protected enkabang tree had been logged in Serian. However Mr Cheung said that when the Forest Department had received complaints about enkabang trees being cut down, representatives were sent to check these and take samples and it was found that these were not enkabang trees. He said if there are places where this is believed to be happening the Forest Department would be pleased to know where so that they can go and look. Lord Cranbrook added that he hoped Mr Wong and his colleagues appreciated that the Forest Department is a public service. He acknowledged that if these trees are being cut down, this is of concern to the Mission.

Mr Wong said that not all the wildlife in the tropical forest of Sarawak has been studied yet and he suggested that this should be encouraged before it disappears.

Lord Cranbrook agreed that wildlife research capability is something that has to be considered. He mentioned the research student studying the effects of logging on wildlife at Nanga Gaat, who supervisor is Dr Elizabeth Bennett, who has been working in Sarawak closely with the Forest Department for 6/7 years.

#### DEFORESTATION

Mr Wong asked whether it is scientifically proven that forest will grow back by itself after logging. Dr Poore replied that information about this is being assessed and the most important element being looked at is whether in the PFE, if logged, natural processes can produce a forest which will remain forest and continue to yield forever. The forest management is designed to do it through natural regeneration but it may also be necessary to do a little bit of planting. In addition to managing the natural forest it may also be necessary to plant some degraded land with trees in order to produce new forest. Dr Poore said that reforestation should be considered as replanting ground which has lost its trees and the Forest Department is doing that in some places and has plans for more.

Dr Freezailah pointed out that ITTO is founded on 3 pillars: one of which is reforestation and forest management because it is accepted that sustainability depends on these two. The second pillar is forest industries: i.e. to promote forest industries further producing and processing in the producing countries so that there are greater social and economic benefits generated. Thirdly there is market intelligence. The concern of the state government when Chief Minister went to Abidjan to invite ITTO to come to Sarawak was to promote sustainable forest management of which reforestation and forest management is a very important component.

Mr Leslie disagreed with Dr Poore's definition of reforestation. He said reforestation is putting the forest back in either of two ways: by natural regeneration, possibly with some assistance, this is the preferred method. If it cannot replace itself, there has to be some planting. The basis of forest management in Sarawak is natural regeneration with a little bit of assistance and the Mission is assessing whether it works. If it is found not to be working then a planting programme will have to be implemented in addition. Those areas which have been degraded so much that there is just lalang left then must have afforestation which is putting the forest back on areas that have been deforested. At the moment Sarawak relies on the method of natural regeneration for reforestation. It does need to be supplemented in some places by reforestation in the form of planting. There is also scope also in Sarawak for afforestation on land which has lost its fertility.

#### ENFORCEMENT

Mr Wong makes a serious allegation in his paper that excessive corrupt practices are prevalent in the various levels of the timber industry.

Dr Poore said the Mission is looking into implementation of policy, the rules which exist for the management on the ground and how these are implemented. He said that the Mission is concerned that the Forest Department is seriously understaffed to

do the job that it is set up to do. They are fully aware in some circumstances that they are not able to carry out policies as they would wish to do.

Lord Cranbrook explained that the Mission's role is to assess sustainability of forest management in Sarawak. In so far as socio-economic effects act adversely on the sustainability of the system they are within our terms of reference. Mr Leslie added that if one of the reasons why policy is not applied is corruption, there would have to be supporting evidence; the Mission would only be interested if this led to a serious diversion of policy implementation procedures.

Datuk Mohd Jabil drew attention to the anti-corruption agency (ACA) and suggested that the Association address themselves to the ACA which is the relevant independent authority.

### **SOCIO-ECONOMIC IMPACT**

Lord Cranbrook said that openness and willingness to engage in dialogue is an essential part of process. He said that the Mission would be available in Kapit the following day for consultation with rural people and would be looking at aspects from the point of view of forest management and assessment of sustainability of the forest ecosystem with regard to its primary function as a provider of benefits to the population of Sarawak.

Doreen Wong said that when arrangements are made through the District Office (DO) or government officers then often the people met are not representative of the people. For example many Pemanca and Penghulu sell off interests of the people.

Lord Cranbrook said that at the Mission's meeting with the Orang Ulu Association in Kuching, the OUNA chairman had raised this point of the divisive effects on the social system. He said that this had been noted but that it extended beyond the terms of reference of the Mission. However, he added that there was no DO concerned with the present meeting.

Doreen Wong said that rural areas do not always receive information in newspapers and therefore might not be aware of the Mission's visit. It was suggested that announcement might be made on radio.

Lord Cranbrook apologised to the Association for difficulties about arrangements for this dialogue.

### **USE OF FOREST PRODUCE**

Mr Wong pointed out that the importance of the forest for local community is not considered as a monetary contribution to the country, but as sustaining the livelihood of the people. Lord Cranbrook assured him that all aspects of sustainability of the forest are being considered.

### **ITTO REPORT**

Lord Cranbrook explained that the report will be delivered at the next meeting of ITTC in Bali on 16 May. It is initially a confidential report and the Mission cannot

say what the Council will decide to do with it. However as ITTO is forum for consultation and cooperation and the whole idea is to promote transparency, Dr Freezailah said it may well be made public. It was noted that Doreen Wong requested that the Council be informed of their wish that the report be made public.

Lord Cranbrook said that the Mission is a genuinely international team and he was sorry that the Association were not able see the whole team. He thanked them for coming.

Monday 19 February 1990 - Kapit

**22.. DIALOGUE WITH COMMUNITY LEADERS, KAPIT DISTRICT**

Patrick Rigepe Nuek, Resident  
S T Ting, Divisional Forest Officer  
W Bale, SAO, Kapit  
D.O. Song  
Geoffrey Usa Baling, D.O. Belaga  
D.O. Kapit  
(see list of meetings for community leaders)

In attendance:

Cheong Ek Choon, Assistant Director of Forests  
Dr B C Y Freezailah

Lord Cranbrook explained the terms of reference of the ITTO Mission and introduced the members present as well as Dr Freezailah who explained how the Mission came to be in Sarawak. Questions were then invited.

Datuk Temonggong Jinggut thanked the Mission for coming and said the visit was very important. He mentioned the following points which are problems of logging in Kapit Division:

1. people are worried about what the logging situation will be in this division in 25 years time. It is hoped that something will be done with regard to replanting of young trees;
2. natives depend on rattan for domestic use but this is being destroyed by logging;
3. there is a scarcity of animals and fish. He suggested that the government might initiate certain areas for the protection of wildlife species. One beautiful place for such a wildlife reserve is an area called Apan Entelit which is a salt lick, but regrettably this area has been licensed out.

Lord Cranbrook said that the Mission is looking at the future capacity of the forest to sustain logging, so this first issue is being considered in the report. He reassured the Temonggong that assessment is also being made of the Forest Department plans to plant new forests in order to replace some of the resources.

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With regard to rattan, he said it is important to know how much the Iban communities rely on rattan and how important the sale of rattan is, in addition to its domestic use in the longhouses.

He said that he was interested to hear the suggestion that there should be breeding grounds shut off to protect wildlife. However, it is difficult to assess the attitude of Sarawak people to wildlife sanctuaries: in Kubah WS recently gunshots were heard indicating that there is poaching going on and in Gunong Gading there have been serious incursions by people cutting farmland. It is important to have a sufficient set of wildlife reserves, as laid out in the plans of the Forest Department, extending right across the country. Lord Cranbrook said he was impressed by the idea that small rivers might be set aside so that they are kept pure for breeding fish. A further suggestion is that small sanctuaries be set up in each concession, but he questioned whether the people would respect these and allow the sanctuaries to perform the function of being a place where animals can breed so that when numbers have built up, they can move out and be available for hunting.

Datuk Temonggong Jinggut added that rattan is shared about 50% for domestic use and 50% for sales. He said now that all rattan has been destroyed, the Iban people fear that in a short time they will have no more rattan mats and this is regarded as very serious.

Stephen Ayot suggested that either the government or concessionaires should replant rattan in the logged over areas as he believes that would be successful.

Penghulu David Manggom said that in the past everyone in the longhouse used rattan and it would be grown in the pulau (small communal area which people voluntarily reserve for their own domestic use). There are now complaints that even small pulau and temuda (old secondary jungle) have suffered incursions and rattan been wiped out by loggers.

Penghulu Bujang Soring added that with the initiation of logging in 7th Division there has been increasing shortage of rattans and that as logging progresses there will be a total lack and so plantation is important. He explained that pulaus are set aside by the community but held in the name of the headman. Although the pulau is supposed to be reserved for the community, it has been included in concessions and therefore is destroyed in logging process. The result is that the penghulu are losing their authority and it is the operations managers who are charged with the responsibility of maintaining good relations with the community who are replacing the penghulus' function.

In addition he asked why the longhouse people might not be allowed to use the timbers which are not suitable for export.

Lord Cranbrook said that the Mission is not acting for the Forest Department and is not able to answer such questions directly. The purpose of meeting is to raise points which leaders of the communities would like to see covered in the report.

Dr Poore said it would be helpful to know what it is that destroys fish, game and rattan.

Datuk Temonggong Jinggut said that it is the tree felling which is the cause of rattan loss, not road making. He urged that the Mission recommends that concessionaires

be obliged to plant rattans that have been destroyed and named the following four kinds which are important: Sega, Latia, Tot, Semut.

Stephen Ayot said there are not many cases where the rattan grows naturally after being destroyed by felling but there have been one or two cases.

Dr Poore asked if it would be possible for the village people to go through the forest systematically before the concessionaire carried out the logging to harvest the rattan block by block before the trees are felled. However Stephen Ayot said this would not be possible because the people might not be free from work on the farm and also the market prices are variable. Lord Cranbrook suggested that the rattan might be harvested and then kept for when the price improves, but Stephen Ayot said that the real problem is that the aim is to conserve the rattan plants. Only those which are ready to harvest are taken and the rest are left. He also said that after a block has been worked, often the loggers return after only about three years so that any rattans that might have regenerated are again wiped out.

Ayom anak Munggo thanked the Resident for enabling the group to meet ITTO Mission and submitted a written statement (see Appendix 4). He said, having been involved in logging activities, he had some insight into the industry. He said recently there seems to have been no supervision at all from the Forest Department over extraction and the trees are extracted at the whim of licensees concerned. This sometimes includes enkabang trees for which the compensation is very small M\$10-15. One logging company near his longhouse, he reported, has re-entered the same area 4/5 times already.

A further concern is that the companies often decline the peoples requests to use rejected wood and even burn it rather than giving it to them.

Ayom Munggo said he supported the suggestion for an area to be gazetted for wildlife sanctuaries and he also requested that an area of 3km on either side of the river be kept for local people for communal use. He urged the Forest Department to convey their request that logging companies should do the replanting of whatever trees are destroyed.

Lord Cranbrook said that the Forest Department is grossly understaffed and therefore under-represented in logging areas. In PFE there are management plans for each block and he asked if all the rules of the Forest Department management plan were strictly adhered to would the damage resulting from logging be less?

Ayom Munggo replied that the extraction of timbers within blocks is not done in accordance with the rules. He said that when the Chief Minister visited Rumah Manjah he had stated that once the forest has been extracted once, there will be no re-entry of logging because of erosion and yet what appears on the ground is re-entries all round.

Umek Jen0 referred to the problem in Belaga. He said people must have communal forest for every longhouse for domestic use because most of the good timber has been felled; he asked the Forest Department to ensure that no temuda should be effected by logging activities. He said in Belaga most of area has been declared as protected forest and this area has then been licensed out. He would like ITTO to recommend that the boundary between the communal forest and the protected forest which has been licensed out be the official boundary between temuda and licensed area so that there will be less problems in future, because at present even temuda

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are included in licensed areas. In Belaga, problems between local people and companies usually arise because of unfair compensation. A uniform system of compensation for any destruction caused by timber companies is required.

Jack Lungal said he believed that the government should allocate an area for rattan for each longhouse. With regard to the issue of loss of fish, he proposed that there should be government research to find fish that are appropriate to turbid waters. If this is not possible then it might be appropriate for the government or concessionaire to provide ponds for each longhouse for fish culture because without fish there is inadequate protein in the diet. He also suggested that concessionaires should create a fund for the restoration or provision of piped water if it has been polluted. If none of these are possible, he wants M\$300 per month compensation per longhouse. He said NCR land has been infringed to such an extent that villagers have been arrested for defending their NCR land with blockades. He said people are prepared to permit entry into NCR land and temuda but only if proper payment for this is made. These proposals have been put forward to government and to STA but have not yet been responded to. In state law there is a right for longhouse people to get timber from the forest, but this right cannot now be exercised because all the good timber has been extracted in the process of logging.

Jack Lungal recalled that the previous Resident had asked longhouse people to submit details of the boundaries of their temudas within a specified time. He succeeded in sending the required information, yet this was disregarded and all former farmland was entered into the logging concession including even the longhouse.

In addition he said that river bank erosion at Belaga is very serious indeed and he attributed this to companies' tug boats pulling logging rafts. The concessionaire should at least provide a retaining wall to protect the banks. Siltation of the Rajang is now so serious as a result of soil being washed down from side streams that at low water the express boats cannot get through without hitting the shallows.

He said logging companies do not respect native customary law and they ignore cemetery areas where trees must not be cut down. There are not enough official staff for the implementation of regulations.

Lord Cranbrook asked about the definition of 'pulau'.

Jack Lungal said that there may be differences in customs between Belaga and those communities further down river. Essentially the pulau is forest deliberately left by ancestors and it is a patch of jungle surrounded by old secondary farmland which is conserved for communal uses. He said the banks of Balui river are now secondary forest because all farmed at some time. They have repeatedly asked for some communal forest concession (5-10 acres per family) and this request not yet been met.

Stephen Ayot said that the longhouse people set aside certain areas of the forest, pulau, for reserves for fruit trees, rattan, wild leaves for rooves and certain trees, e.g. tapang tree for honey. But he said the pulau mentioned here is not in the agricultural area but in the virgin jungle area where the local people have no right to encroach and farm the land. He explained that the people are given a certain area by DO concerned and headman approves the area and people are allowed to farm that area to the boundary. However, people will farm beyond the boundary and make their own pulau, so that when the concession is approved, the pulau is



automatically included, without the knowledge of DO and consequently this causes problems with the company concerned.

Peter Mandy said that since 1954 there has been no new creation of NCR land. Pulau is surrounded by secondary jungle after being farmed and contains material required by longhouse people. This is not applicable any more because NCR has ceased. No more pulau to be created.

Lord Cranbrook undertood that the reference was to unauthorised incursions into forest land for farming purposes.

Dr Poore asked if the area of land that is available for cultivation is now inadequate to support the longhouse.

Ayom Munggo said that because of population growth there is a shortage of land. However in the upper Baleh region specifically, there is land up to the Indonesian border which has not been felled and is still virgin jungle and he requested that a 3km reserve for communal use be established there. He also suggested that Kuala Mengiong would make excellent an reserve for repopulation of the rivers with fish and wildlife and said that a government station should be set up there to keep a check on anyone wanting to go into the area.

Datuk Temonggong Jingtut suggested that more emphasis should be given to the need for communal forests for each longhouse community for use for general domestic purposes. Jack Langal supported this and said that he thought that communal reserve should represent land which has the potential to become farmland because there is a genuine shortage of farmland in his area.

Penghulu Nau drew attention to the amount of erosion in his area, the worst of which is the result of drilling by the coal-mining company. He said he would like to convey a request to the government for long-term planning for when there is no more logging. Penghulu Esit ak Nau added that he would like ITTO to ask the Forest Department to formulate a plan whereby rattan will be replanted properly. He also asked the ITTO Mission devise standardised rules of compensation.

Lord Cranbrook asked to what extent community leaders can assist in ensuring that their people respect the law within reserved areas and also how quickly trees and animals come back after logging.

Ayom Munggo mentioned two Kapor trees set aside since 1972 which have grown and also a Callophyllum grove which has grown well because it has been left since 1962.

Datuk Temonggong Jingtut said that trees left because they are undersized will in fact grow and attain good dimensions. He said he was not sure about wildlife because this depends on the resources in the forest and if there are sufficient fruit trees that will supply food for the animals it is likely that they will return. Jack Langal agreed with this and said, as an example, that when land is cleared for farming and later left to regenerate, within 5-10 years there is reasonable tree growth and the rattans are restored.

Lord Cranbrook explained Forest Department plans for a network of protection reserves across the country. These will be very important for breeding grounds. The animals can then come out from these places and be legitimately hunted. He asked if

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community leaders will exert their authority to ensure that people do not go into such sanctuaries. He pointed out a suggestion made previously that community leaders might be appointed Honorary Game Wardens under authority from the National Parks and Wildlife Office. He reiterated that the sanctuaries will only work if they are respected by the people.

Jack Langgal pointed out that logging company staff should also be required to respect the law with regard to sanctuaries because a great deal of loss of game is attributable to the companies. He mentioned a further problem that the Penan depend entirely on meat for their sustenance and this includes protected animals. If a new sanctuary is established it would be important to ensure that the Penan were able to continue their lifestyle.

Stephen Ayot said that everyone agrees that regeneration will occur and young trees will grow but that the real issue is that re-entry must be prevented. Whatever the market of the various species of wood, it is absolutely essential that loggers should go in once only. He said that 25 years will be adequate to produce a new crop, as long as there is no re-entry during that interval. Regarding wildlife protection, he said it is impractical to suggest that community leaders should be amateur game wardens because from experience from Lanjak Entimau sanctuary, they do not, living on bounds of these reserves. He said the only way to secure WS is to have staff of NPWO who are paid a wage in order to police the WS.

Peter Mandy strongly requested that staff of the Wildlife Office should be posted to Lanjak Entimau area where there is poaching going on otherwise there is no point having the sanctuary there.

Penghulu Silo ak Junting requested that the areas of Ulu Tiao and Ulu Mujong, which contains various timber species, including Kayu Bulu (Agathis), rattans and biru (Licuala palm) leaf, be reserved for the domestic use of the populations in his area.

Sinau ak Entap said he would like to know what plan will be formulated relating to the replanting of species for the benefit of the local population in future. There are various species of fruit-bearing trees, e.g. Perawan, and he wondered whether it is possible for local people to do the collection of fruit with government assistance.

Lord Cranbrook explained that one third of the ITTO team is looking into the research programme of the Forest Department. He suggested that the community people should be involved in seed collecting and planting, and that they themselves might plant trees they want for trials.

Lord Cranbrook said he valued the contributions made by the leaders and had noted their proposals for communal forest reserves. He assured the people that the Mission is looking into all aspects of sustainability, and the report will definitely cover problems such as rattan and wildlife.

Nicholas Mering drew attention to the effects of bulldozing during logging operation and in Belaga in particular where the rivers are affected by siltation, and by timber falling into the rivers. This causes obstruction to village people travelling on the small streams, as well as being dangerous. He added that where bridges have been built, the timber used for these becomes rotten and is not strong enough to sustain the earth. He suggested that companies concerned clear all rivers or navigable streams of fallen timber that hinders navigation.

Stephen Ngilambang proposed a subsidy scheme, with seedlings given to people for replanting of rattan. He supported the need for the creation of reserves for longhouses for forest products for domestic use and agreed that wildlife should be protected. He added that in Katibas/ Entimau area, if it is not properly protected, sooner or later the wildlife will be gone. However, he said he did not think the idea of honorary game wardens would be appropriate and the job would be better done by wildlife staff. He added that at present, compensation for logging roads is M\$30 per chain, which is too low, and hoped something could be done to improve this.

The proportion of people involved with logging work varies from one area to another: in Baleh region 70-80% population are involved, in Song it is 50% and in Belaga about 20%. The type of work is skid and lorry driving but the people earn comparatively high wages.

Pemanca Sempang concluded the meeting by saying that he hoped that the requests made by the leaders would be taken seriously by ITTO and the government.

Lord Cranbrook thanked the people for coming to the meeting.

Tuesday 20 February - Nanga Gaat, Baleh

23. **BATANG BALEH FOREST ENTERPRISES SDN BHD**

David E Manjah, Forest Operations Manager  
(Ref briefing document No.20)

Two fellers always work together. Tractor drivers are paid M\$5 per hour. All employees are paid a weekly wage, into an account, except for fellers who are on contract. Company hopes to get a new radio communication system shortly. More people are asking for work than is available.

A forest guard is stationed in the camp to make sure everything is within the law. The management plan is devised by Forest Department. The Forest Department representative changes every 2 months and he does the royalty marking which is done at the log pond.

Level of utilisation of forestry - everything is taken out that is not defective and leave behind trees of diameter less than 45cm. There is no minimum top, although they do not take out anything less than 30cm top. Logs are towed to Tanjung Manis and loaded onto a barge. 60% are sinkers, e.g. meranti. It is cheaper to transport floaters by raft, rather than barge. Floaters are moved out as soon as possible and sold FOB. There is an office in Sibuluan and a representative in Japan. Attempts are being made to devise a log tracking system.

Thursday 22 February 1990 - Nanga Gaat, Baleh

24. **SIME DARBY FOREST MANAGEMENT SDN BHD**

**Interview with B Ross Ibbotson, Managing Director**

Sime Darby operates a joint venture company with the concessionaire, Datuk Linggi.

Mr Ross Ibbotson said that in the context of sustained yield it is impossible to log without disturbing the ecological balance and therefore he feels that the idea of setting aside 1 million Ha of total protected area (TPA) is the answer to the threat to biological diversity.

Dr Duncan Poore agreed that if the forest which is set aside for logging is within the framework of landuse through an adequate system of protected areas, then the objectives of protection would be met.

Having set aside 1M Ha TPA (= 8% of the country) and taking into account that of the country's total 12M Ha, 3.3M Ha is shifting cultivation, and 300,000 Ha tree crops such as rubber, cocoa etc. and 25% 8.5M Ha total forest is PFE, Mr Ibbotson proposes that the rest should be harvested or developed in the best interests of Sarawak and this will mean that some deforestation must occur. Sensible land utilisation is what is required and this will involve dereservation for development of land for agriculture or for forest crops.

Lord Cranbrook said that the Mission is unlikely to make overall recommendations for landuse policy within Sarawak, although it is clear that plantation forestry will be an element of the total pattern of landuse. He reassured Mr Ibbotson that the report is not intended to be damaging to the logging industry, but would like to see a continued forest industry to benefit the country.

Dr Poore added that the Mission is looking at the likelihood of sustainable yield from the forest and at the amount of land which is available and that which is likely to be available, bearing in mind the disappearance of stateland for other uses.

Mr Ibbotson said that a sustained yield of 2 cubic metres/Ha/annum will not support the overheads of the forestry industry as it is not a commercial rate.

Dr Poore asked, in view of the terrain and costs involved, what Mr Ibbotson considered is an economical yield. He replied that, assuming there is no silvicultural treatment and acknowledging that keeping roads open is impossible, he would expect plantation to yield 20 cubic metres/Ha/annum. 25 cubic metres would be very economically viable. He said that Eucalyptus and Acacia mangium would be poor species to use but Maligna arborea and auricale may be good plantation species. He said many wood industries in general could be converted to plantation crops and in the Peninsula, rubber has become a good wood industry and now oil palm is also a possibility. Coconut being used in Philippines.

Lord Cranbrook said that Sarawak soils are not the quality of Sabah soils and therefore may not be able to support equivalent stands of timber.

Mr Ibbotson said he did not think the terrain is too bad except where it is very difficult and the road maintenance is expensive. Harvesting not too difficult and success depends on the fertility of the soils and what is in the litter. [He noted that Whitmore suggests that most of inherent fertility is recycled all the time]. He said that the major classification of land suitable for agriculture has been based on terrain, not on soils. He believes that it would be possible to develop a sizeable plantation industry - 0.5M Ha would provide a sufficient amount of material for the Japanese market.

Mr Ibbotson referred to the example of Queensland being quoted as the only satisfactorily managed forest according to Dr Poore's book. He noted that 1M Ha for national park in Australia is only 0.3% land but it cannot be expected that a state like Sarawak to contribute the same area.

Mr Ibbotson questioned a further quotation from the book, that carbon fixation is not dependent on growth but on the standing biomass. Dr Poore said that the amount of carbon from the system is a fraction of the biomass on the ground. Plantation replacing natural forest can increase the carbon taken out of circulation if the timber harvested remains as wood. Eucalyptus, while growing draws carbon dioxide and so if it is harvested and kept as wood then it is storing carbon.

Mr Ibbotson said he believed that ITTO should divorce itself from the fringe 'greens' who are calling for boycotts of exports. He dismissed claims that TMF species are highly decorative and valuable and said that, on the whole, 90% Sarawak logs go for cheap plywood raw material in Japan. He added that in fact USA is biggest log exporter to Japan.

Dr Freezailah assured him that ITTO is a commodity organisation interested in the expansion and diversification of the tropical timber industry. [Lord Cranbrook said he had noted the current prices and would include these as an appendix]

Mr Ibbotson reported that last year had been a successful first year with average FOB of US\$102. However, over the last two months the price has been US\$83 & US\$85 respectively. He said every other cost is fixed. The handling costs and import tax = 60% of total costs of imported plywood.

Mr Ibbotson referred to claims that species of flora and fauna are at risk of extinction, although he noted WWF seem reasonably happy with the proposal for 1M Ha TPA. Dr Poore said that such allegations that timber trade itself leads to extinction of species are not true.

Lord Cranbrook said that most of studies of population loss have been based on carrying capacity of the forest from calculations on figures from the Malaysian Peninsula. He added that there is lots of information about hunting and fishing malpractice. Do not isolate logging and this is not all attributable to logging. Mr Ibbotson noted the lack of fish in the Mengiong River. He also said he encouraged the research being done into the effects of logging on wildlife by Zainuddin in Rajang Wood. He said the benefit of letting logging roads deteriorate after a concession is completed is that the access into the forest for potential hunters is lost.

Mr Ibbotson said he would like to correct Palmer, Burgess & Poore on their statement that "logging is associated with big profits". He said it is a popular misconception of the industry being put about in Europe. On current average selling price US\$90 per cubic metre FOB = M\$245, with royalty of M\$55 (22.5%) and cess,

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and with production operating costs at M\$150 (61.2%), this leaves 16.3% to be shared between the licensee and the operator so there is no excessive profit and if the price drops a few dollars then just break even. He agreed that huge profits have been made at certain times but then there is nothing and a lot of companies have gone into liquidation, mainly because they are inefficient. He said it is a highly sensitive market and consequently BBFE spend much time trying to work out what is going to happen.

Mr Ibbotson said he would disagree with the proposal that local processing is the way to go in future. He said it is very difficult to get good quality, there is no local market, export markets are very selective, and labour has to be imported from Indonesia. It is a way of getting rid of low grade material.

With regard to logging methodology and techniques, he said he believed that these are better on the environment than is thought. He said that the sampling work from Burgess & Johns was suspect as the spar tree method of estimation only takes into account an area 50M surrounding the tree, i.e. 1.5% total areas.

Dr Poore suggested that trials for high lead techniques should be recommended to the Forest Department, as tractor logging under any circumstances is going to produce more erosion than high lead.

Mr Ibbotson said that high lead is very dependent on the density of logs. With a 300/Ha stand density there is no question of direction felling. In cable logged areas, it results in the clear felling of everything by the time it is finished because of the high density. Professor Bruenig has suggested using permanent bridges and culverts to stabilise the environmental effects but the government could not afford to keep open logging roads when there are 15Km road/ 1000 Ha, i.e. the country's 4M Ha PFE have 50,000Km roads. There is an estimated loss to productivity over the area 30M from the centre line in both directions and therefore an average loss to production of 10% which is what is expected in any managed forest. If it is a sustained yield forest, there have to be roads in it and a further 25Km skid trails per Km<sup>2</sup>. In the area seen the previous day the main skid trail covered 2Km /30Ha.

Dr Poore noted that skid trails in most circumstances will recover but regeneration will not reach marketable timber size for about 80 years. In fact when operators go back, they will want to use same skid trails, so in effect the land is permanently lost.

Mr Ibbotson said plantations do support large labour forces and industries and through cooperation with the government can really improve life standards of the rural people, by providing schools etc. However, this cannot be done with any sustainable yield management of tropical forest.

Development of degraded land which has been exposed to shifting cultivation is restricted to illegal incursions into PFE. It is not to consider going into other areas because of NCR.

Mr Ibbotson said that if the state gives the go ahead he will be doing a survey of potential sites for plantation forestry. He said a number of areas along the Rajang, Baram and at Bintulu are possibilities for the establishment of industries.

Mr Ibbotson referred to the issue of the oppressed minorities. He said that the Penan that are left are generally now in longhouse communities and he refuted press comments about letting the people look after the forests themselves.

Lord Cranbrook said that if the Mission gets the report right, it can put the proper perspective on these issues.

With regard to the flooding and hydrological effects of logging, Mr Ibbotson admitted that increased runoff is a result of logging but that it is impossible to control this economically. To prevent siltation would be very expensive and there is not much that can be done to stop erosion without tremendous knowledge. Dr Poore agreed that unless something substantial can be done, anything else is of marginal benefit.

Mr Ibbotson said if roads costs were much lower it might be possible to do more to meet environmental regulations, if they existed. Road costs are the biggest single cost and road maintainance is 25% total cost. Road cost M\$100,000 per mile overall and for main road M\$100,000 per Km.

It was added that approximately 300 people are employed by the company. All of them earning over M\$1000 p.m. Truck drivers can get M\$5000 and top tractor operators are paid M\$3000.

Monday 19 March 1990 - Miri

**25. MEETING WITH THE RESIDENT, MIRI**

**Ta Haji Abu Kassim bin Hj Abd Rahim, Resident, Miri**

**In attendance:**

**Richard Pahang, District Officer, Miri**

**Chong Ted Tsiung, Divisional Development Officer, Miri**

**Dato M Jabil**

**Cheong Ek Choon, Assistant Director of Forests**

**Liew Tchin Fah, Forest Department**

**Bahari bin Mohd Atan, Ministry of Primary Industries, KL**

The Resident said it was great pleasure to welcome the Mission members. He said he was sorry he had not been available when the Mission passed through Miri on their first visit. He introduced the District Officer and the Divisional Development Officer of Miri.

Lord Cranbrook said the Mission was pleased to be in Miri and the arrangements were very satisfactory. He explained the aims of the ITTO Mission, and introduced the members present. He also explained the terms of reference. He said the purpose of the visit was to show that the Mission is interested in all parts of Sarawak, from Limbang to Lundu, and to see for itself the forest management and timber utilization of the forest. He said it was important that the members should experience at first hand what is actually happening. He said it is also important to show that the Mission is on good relations, not only with the Forest Department and the trade, but

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also with community leaders and the public through dialogues and he thanked the Resident for making arrangements in Marudi. Lord Cranbrook added that it would be necessary to have a translator, so that people are free to speak in their mother tongue.

Lord Cranbrook asked if it would be possible to see the official programme on the Penan. The Resident agreed that there are some reports on the overall programme.

Dr Freezailah reiterated Lord Cranbrook's appreciation of the arrangements that had been made to facilitate the work of the Mission. He also gave an introduction to ITTO itself and its objectives.

Monday 19 March 1990 - Miri

### **26. DIALOGUE WITH BARAM SELF-DEVELOPMENT ASSOCIATION (BASDA)**

**Marcos C Joing, Secretary, BASDA**  
**Dr Lester Mason, Scientific Officer, BASDA**  
**Daniel Dana**  
**Banyol Embang**  
**Michael Emang**  
**John Barah, BASDA**

Lord Cranbrook introduced the members of the Mission present and explained the objectives of ITTO and the aims of the Mission. He also mentioned the visits already made by the Mission and the meetings held with other groups. Lord Cranbrook said that the Mission has made the effort to meet people and hear their opinions and various ecological effects of logging have been raised, e.g. siltation of the rivers, loss of game and fish.

Mr Joing thanked him for the introduction. He said that the Mission is looking into the conservation of the forest and the effect on the ecological balance and he wanted to point out that the natives of Sarawak are also part of the ecological balance.

Mr Joing expressed concern about the number of casualties caused by the logging industry and particularly, concerns about the for those families of those who are killed or seriously handicapped.

Lord Cranbrook said that it has been noted that people do not wear protective clothing when using chain-saws and other machinery, and that there are no regulations requiring this. He said this was the first time someone had brought forward this point to the Mission.

Dr Mason said that research shows that for every 1M m<sup>3</sup> timber harvested, seven people die. Lord Cranbrook said that there appears however to be no shortage of people coming forward to work in the industry, i.e. wage-earners are prepared to accept the dangers, for the higher wages. Mr Seip mentioned the deficiency that chainsaw operators and skid drivers have no training.



Dr Poore said that the central concern of the Mission is the sustainability of management and anything that interferes with sustainability is of concern.

Mr Joing expressed concern about sustainability: in West Malaysia there is a different forest policy, but in Sarawak since 1947 (when logging started), the structure of the management system has allowed destruction of the forest by undersized cutting. He asked how logging can be sustained if it is run by people with no experience, and he alleged that the Forest Department has not encouraged silviculture and replanting. He said he has planted a lot of trees himself without technical assistance.

Lord Cranbrook said he had asked the people in Kapit, who had complained about the lack of replanting, why they have not done it themselves. It was agreed that the Mission would stop on the way back from Long Teru and meet Mr Joing at Beluru to see his small nursery. Lord Cranbrook added that the general staffing and research of the Forest Department are of interest to the Mission and will be considered in the report. Mr Leslie questioned Mr Joing's statement that "the Forest Department has no experience of sustainable logging". Mr Joing said that although the policy is laid down, there is no replanting of new trees. The only places where this has happened is an area about 60 miles away from Kuching with some *Acacia*, along the Miri-Bintulu road, and some areas where, since 1947, the Forest Department has been doing silviculture.

Lord Cranbrook pointed out that silviculture includes re-stocking and this has been going on, as well as liberation thinning. Dr Poore said that keeping the forest going to allow the next yield does not necessarily mean replanting. The basis of forestry management in Malaysia has been to look for regeneration and a subsequent cropping, rather than plantation forestry, which, with regard to ecology, is no substitute for natural forestry and does not sustain biological diversity.

Mr Leslie said that he was involved in making the FAO recommendations to which Mr Joing referred and he said although these were not entirely carried out, there is some experience in sustained management based on natural regeneration. The peat swamp forests which are going to stay as permanent forest are managed entirely in accordance with FAO recommendations. Those which are not to stay as permanent forest are not. In 1970s when FAO made the report there was no logging in Hill Dipterocarp forest. Experience since these prescriptions has shown that FAO did make some bad guesses but he added there is no need to plant if there is natural regeneration.

Dr Lester mentioned that Miri is also an oil town, oil being another natural resource. In this area Malaysia has done a significant amount of development on conservation and management of oil resources and is backed by the National Petroleum Act. He compared the way the Federal Government manages the oil reserve through Petronas with the lack of such a counter-agency in Sarawak to look after the timber resources. He said there are risks in the oil business, but the level of safety consciousness is totally different to that of the timber industry. Petronas allocate their resources to be ploughed back into the economy but he said the timber people do not care about the lives of the people working in the forests. He called for a timber Act, through which the State or Federal government would have direct control to ensure that these timber operators do not just keep large profits at the expense of other people.

Lord Cranbrook said that STIDC to some extent is a government corporation which is involved in the timber industry - it has concessions and interests, but Dr Lester said that Petronas are much more involved than STIDC. Nobody is keeping tabs on what

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is going on in the timber industry and he said the Forest Department, who probably want some regulation, have no legislative power to do so.

Dr Leslie said that the Forest Department's responsibility finishes where that of STIDC starts so it cannot interfere. STIDC is more involved with the development of the industry. Dr Lester said that this could be changed if the government wanted to. STIDC is one man's department and all those who work under him, obey what he wants to do.

He said he has a friend whose job it is to inspect billian mill but he cannot make any recommendations because no one will listen.

Dr Lester said that Petronas is controlled by the Ministry of Finance so that output can be regulated, whereas for timber it is up to the operators who want to sell as much timber as possible to Japan. Lord Cranbrook said that the operation of forests is entirely a state matter so if we was suggested that the operation of forests should be was to be assimilated at a national level, it is likely that all the other states would object very strongly. At Sarawak level, however, the Mission could certainly note the idea of an overall forestry regulatory authority, given the same capacity to operate but looking after the public interest as well.

Mr Joing said that not only chain-saws are used, but also sky-line which is very dangerous without training. Mr Banya said that one of the things that causes accidents that workers are given incentives to harvest as much as possible - the minimum a lorry driver can earn is \$5 per ton for the first 15 but for 100 then it will be \$8 per ton. This encourages the workers to operate quickly. They also use spotlights to work at night.

Mr Leslie asked if there were any statistics on the type of cause of these accidents, i.e. skidding or cutting. It was suggested that BASDA take a sample of deaths registered over a period.

Monday 19 March 1990 - Miri

### **27. INFORMAL DIALOGUE WITH MIRI RESIDENTS**

**Christopher Sawan, Barrister**  
**Peter Kallang, Orang Ulu Association**  
**James Gau, Orang Ulu Association**  
**Puntang Balla**  
**Alexander Isut**  
**Chang Yi, Teacher**  
**Josephine Mawat, Home Administrator**

Lord Cranbrook introduced the Mission and said that a press release was put in the newspaper and an announcement made on the radio to advertise the dialogues. He explained the aims of the Mission and recounted the meetings and activities of the Mission's visits so far.

Mr Sawan thanked the Mission for meeting them and said they wanted to make it known that their purpose is not to criticise the government or ITTO organisation. He said it is customary on the part of the Malaysian government that such tours are guided by the government and are not usually given the opportunity to meet members of the public. He pointed out that the community leaders who the Mission were scheduled to meet at the dialogue in Limbang are selected chiefs of the longhouses who are civil servants and therefore in fact are government representatives who have been briefed on what to say. He said that they had been told that there would not be sufficient room at the meeting for everyone and that numbers would have to be limited to government representatives. He said these people have no consultation with the local people and no knowledge of the people.

Lord Cranbrook replied that extremely frank discussions have been held with such community leaders elsewhere. In addition, the meeting with OUNA in Kuching was held by government servants and they had been frank and outspoken. He said that the Mission has found that people in authority have a good perception of what is going on and are capable of putting forward their own opinions. Friends of the Earth in Great Britain have made the same point, that these people are on government salaries and that this affects their viewpoints. However, Lord Cranbrook thanked him for the warning.

Mr Sawan said that since 1987 and the last election, all the native heads who were suspected of not supporting the government were asked to step down from their posts to be replaced by someone else. In the past selection has been by the people, but now it is by the state government and now the leaders of communities' views may be tainted by government policy.

Dr Poore reiterated that if this is the case, then there have been some remarkable views from community leaders who have been singularly critical!

Mr Peter Kallang said that these heads were not only government servants but some are also paid by timber companies, consequently they will say anything in order not to break their honour. Lord Cranbrook agreed that OUNA had mentioned that some of the headmen are not representing the people, that there is dissatisfaction within the social fabric and that 'saguhati' agreements have been controversial.

Mr Sawan said that in 1989 over 11M m<sup>3</sup> of logs were produced in Sarawak, out of which 3.5M m<sup>3</sup> came from Baram alone. He said that 1 acre hill timber produces 15 tons and there is a feeling that there is a danger that the 'so-called' management is actually guided by prices of timber: when prices go up, selective cutting no longer operates and that re-entry is frequent. He said that in a remote area between the Tinjah and Belaga there are practically no trees standing.

Lord Cranbrook said that re-entry has been discussed with the Forest Department. The Forest Department is aware that re-entry occurs but say that re-entry is generally limited to areas outside PFE, in State land forest which is going to be converted to other landuses anyway. Therefore, he said, it is necessary to be sure of the long term plan for the land before assessing the effects of re-entry.

Mr Sawan said that the definition of State land is "any land without title", with which Dr Poore disagreed and explained that State land forest is forest land which is not Forest Reserve or Protected Forest. Lord Cranbrook commented that Mr Sawan appeared to be unaware of the legal definitions of landuse; he said that the Forest Department is eager to retain its PFE and this the Mission supports. He said the

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Forest Department has great determination and is operating under a number of difficulties. The Forest Department are responsible for retaining land under Forest Reserve and Protected Forest, for which there are clearly marked boundaries and in which (PF) there are hunting rights. The Forest Reserve is solely for forestry, but there is also State land outside this, much of which is virgin forest, plus National Parks and Wildlife Sanctuaries.

Lord Cranbrook mentioned that he had recently been into Kubah National Park and had heard gunshots. It is apparent that there is a serious poaching problem. He also mentioned the incursion seen in Gading National Park, Lundu, and he asked why this is being allowed.

Mr Sawan said that the National Parks are completely closed to the local people and it is not they who in, but people from the towns.

Lord Cranbrook said that the former director of the National Parks and Wildlife Office, as well as members of OUNA, are anxious to increase the size and number of reserves but the administration of the process is difficult. He said that the Mission has been told that logging has destroyed fishing. It is realised that fish have disappeared; but there are also people who are electro-fishing and using cyanide. He said the impression given is that social discipline is poor and that this is a major problem; the respect for the wildlife at any level has gone.

Mr Sawan said that with the coming of the logging roads, the timber people themselves are encouraged to hunt and some are even hunting by spotlight at night. He said that if hunting was allowed to continue in the traditional way, as it has for the past 200 years, then stocks would not be endangered. He went on to say that in Sungai so much game is being exported to Singapore that the people cannot afford to feed themselves. He said that it is the people with position who use electro-fishing.

Mr Kallang added that the people from timber camps bring electric generators for fishing. He also said that most of the birds on the protected list only nest in the forest and, as this is being destroyed, they are left with no habitat.

Mr Sawan added that it is not the Iban who carry automatic guns. He said there are about 48,000 shot-guns in the country and that the recent move to prevent the renewal of gun licences is 'just a gimmick'.

Dr Poore returned to the question of re-entry and said it was important to know which sort of land Mr Sawan referred to in his allegations. Mr Sawan said that the people are not concerned with Protected Forest because there is no timber logging there. People are concerned where the timber operations are going on. He said there is re-entry in every timber concession. A few people in Sarawak are given licences to operate but none of the money goes back to the people. The country gets a mere royalty.

The implications for areas which are State land and likely to be converted for other use were repeated and Dr Poore explained that Protected Forest is separate from that land allocated for National Parks. The forest for timber is divided into three: the government intends to manage PFE and TPAs, but State land forest is likely to be transferred to agriculture. Lord Cranbrook said it would be helpful to know if the examples of re-entry cited are in PFE.

Mr Sawan said that it is the responsibility of the concession owner to look after the land.

Lord Cranbrook said that the Mission is in Sarawak to see the facts for itself and what people say is being noted. But he said, unless specific examples can be given it is impossible to make any comment and so he asked Mr Sawan for specific examples of where re-entry has occurred and agreed to find out whether or not this is PFE land. Mr Sawan said that the classification of land is only on paper and inferred that this did not count. Lord Cranbrook replied that the Mission has to assess the facts on the basis of the laws and government regulations. He added that the Forest Department has listed cases where they have allowed re-entry. He said that the Malaysian legal system is based on evidential rules and consequently facts are required.

Mr Sawan said that the Mission should go and find out for themselves, and Lord Cranbrook said that, if he was prepared to give examples of where re-entry is alleged to have occurred, they would do so. Eventually Mr Sawan gave the names of some examples: Ulu Madamit, Ulu Limbang (1970 concession), Ulu Pandaruan where he said there is nothing left, Sungai Apat. Lord Cranbrook agreed to check the status of these forest areas. [All subsequently were found to be State land].

Mr James Gau said it is very difficult for people to prove that re-entry has occurred because in cases where such a complaint has been made, the resulting report has denied this, because the Forest Department staff are involved in the encroachment. Mr Gau said that he did think the forest would regenerate if it was left alone, although possibly this would not include all timber species. He said there are cases of areas where after 40 years it is impossible to differentiate between the previously logged forest and its surroundings. Dr Poore commented that the preliminary indications are that 25 years is too short but that forest suitable for felling again would regenerate in 40-60 years. In shifting cultivation a different kind of regrowth would appear, because everything would have been cleared.

Mr Sawan asked if he was implying that shifting cultivation is more harmful than logging. He said that shifting cultivators can go no more than 3 or 4 miles from the river side.

Dr Poore asked: if forestry was practised in a way in which the second crop would be as good as the present crop in 40-60 years, and if there was no re-entry, would there be objections? Mr Sawan said that as long as policy was closely followed, there would be no objection. He said that enforcement is not there because the people who are responsible for enforcement are the people who own the concessions.

Mr Sawan said that a further problem caused by logging is that the roads open up the areas and anything that is saleable is exported to Taiwan.

Mr Kallang suggested particular coupe areas to look at specifically and to look at the logging plan of the area to compare which coupes should be logged which year. In Sungai Bawan, the Medamit company is running the concession, and Mr Sawan asked when was the forest coupe issued and whether it is protected.

Chang Yi asked if the report intended to make suggestions for management policies without touching on social issues. Dr Poore said that the focus is on sustainable management; anything that the members consider hinders or impedes this is therefore

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of concern. He said that one thing that is very clear, is that there has not been nearly enough consultation with the people.

Mr Sawan expressed concern at western media reports that have intimated that such groups as his, who are worried about the logging industry have been said to be incited by anti-government movements. He strongly denied such involvement. Lord Cranbrook agreed that there has been a vague association made between 'green' politics and leftist organisations in Europe, but this has not been applied to Sarawak.

Lord Cranbrook said that he did not have the impression that the Forest Department is a closed department. He said he hoped that one of the achievements of the Mission has been to open up the situation and give the Forest Department opportunities for frank discussion.

Dr Poore said that it is hoped that the report will become a public document, although this is in the control of ITTC. He said the Mission is trying to reduce confrontation, and rather to take practical steps forward to co-operation.

Mr Sawan said that there are few licensees who are actually practising logging. Most are sold by the concessionaire; recently one was sold for M\$12M. The high price is a major reason for re-entry. Mr Kallang said that one third of the profit before tax goes to the timber operator and the other two thirds goes to cover costs, government royalty, fuel etc. He said that a lot of people feel that this distribution is unfair.

Lord Cranbrook pointed out that the investment towards road costs cannot be claimed against tax. Although concession holders may have little involvement, the licensed operator is very dependent on the market price of timber. He said that it is not difficult for operators to go bankrupt - the expenditure on roads and machinery makes tight margins, and this in turn contributes to the bad ecological effects. The example of Australia was mentioned where the main logging roads are paid for by the state and consequently there is much less environmental damage.

Mention was made of the high wages which can be earned by workers for the timber industry, e.g. M\$14,000 p.a. average wage. Mr Sawan said that often this goes back to the concession owner through the on-site canteens, etc., and there are numerous cases of cheating.

Mr Kallang said that he felt with more and more processing industries established in Sarawak, more people will be meaningfully involved in the timber resources. He said there are very few people who benefit so much from natural resources and so many poor people who live on the land and have been there for a long time and feel left out. He said the Sarawak government needs to get people participating and involved.

Mr Sawan said that the Penan issue has been highly publicised although their complaints are similar to all rural dwellers of Sarawak. He said that the government is trying to group the two issues of human rights and timber together to the outside world, so that attention is taken away from the industry. The Penan feel the effects of the logging more directly because they rely on the forest to live and animals for food, whereas the longhouse people are farmers and so do not feel the same immediate panic.

Tuesday 20 March 1990 - Limbang

28. INFORMAL DIALOGUE WITH THE PENAN AND KELABIT  
(see list of meetings for attendants)

Lord Cranbrook thanked the group for coming and introduced the members and explained the terms of reference of the Mission. On behalf of the Penan and the Kelabit who attended, the interpreter said he would like to thank the Mission for making the visit. He said they have tried to hear of the visit for three days and tried to make arrangements with the Resident's Office for a meeting but had been told that the meeting was only for the heads of the communities. He said attempts have also been made to try to put forward their views to government and companies.

Lord Cranbrook said that although the Mission was sorry not to be able to visit the areas that they were particularly concerned about, but the Mission has actually seen logging taking place in three different interior areas.

The first speaker said that most of their land has been destroyed by the activities of logging which leaves timber criss-crossing farmland and fish dying because of water pollution. The animals run away because most of the fruit trees have been knocked down and rattans that are used for buildings have also been destroyed, and there is difficulty in looking for food. During the rule of the British, he said they were quite happy as there were no such difficulties. The tribes are not happy with companies coming to destroy the areas. He said they have entered without asking permission and they have declared that all the land from the interior to down river belongs to them. He added that the government administration does not have much influence in the Ulu. He asked how many hundred years they have been living in this area and yet the Malaysian government has now told them what to do with their land and not to cut forest for farms. If we cut the forest they will arrest us. The speaker said that he personally has been taken to court four times; he said, never before have Penan and Kelabit been jailed in the last one thousand years. He said they are not against government but want them to administer the people properly. They arrest us because we prevent them from destroying our area. In ten years he feared that the total hill area will be destroyed and even if the timber is not all gone, the soil will be eroded and there will not be a good harvest. Before the companies came and distributed the area there were no such problems. He said he hoped the Mission would help to inform the companies not to disturb their area. The government does not believe them and so they make blockades and then they get arrested. He said now they do not know how to resist.

Lord Cranbrook thanked him for his statement. He said that the Mission is writing a report, which we have been invited to write by the Sarawak and Malaysian government, and he said he was sure that the report would be read very carefully. He then asked how many Kelabit present had heard of Penghulu Lawai, who was jailed some time ago, and therefore he refuted the argument about no previous imprisonments. He went on to point out that the laws under which the Forest Department is now operating is the Sarawak Forest Enactment which was made during British rule, but he said there has been continuity of law from Brooke right through to Malaysia. The first speaker said that the Malaysian government has now changed things, but Lord Cranbrook said that, since 1958, when the Land Code was enacted, it has been forbidden to fell primary forest without the permission of the District Officer.

There has not been a change; it is just that the laws are now being enforced.

The second speaker was a Penan. He said it was a great opportunity to meet with the Mission. He said the Penan are like sick people about to die, because our area has almost been finished and if it is finished we are going to die. He said the Penan get everything from the jungle including the fish and animals, rattan, sago palm and poison for darts, and their only money comes from selling jungle products. He said it is their hope that the Mission will inform the companies to stop and that if it takes time for them to stop, the Penan will die. If it stops quickly there will be a chance left. He said they have repeatedly tried to stop the companies but they refuse and that is why we have blockaded them. He their parents have never been into jail and only now the Penan knows life in jail. He said he hoped that the Mission will be sympathetic so that the forest will be there for them to stay. The timber companies never listen and instead they bulldoze our graveyards. If they have sympathy for us we will never say they are not good. He said when we were created by God, before there was anything, there was water and earth and when this water subsided and there is an island where God made us and there is where we are now. They say they want to take this land away and that is why the Penan are trying to defend the land of their ancestors. Please stop the companies as soon as possible.

Lord Cranbrook said the report will represent the opinions of the Mission which will go to the Malaysian government. He said the Mission has the deepest sympathy for people who find themselves in a predicament of this sort. He said however, that he did not believe that as a result of the report or as a result of anything anyone can do in Malaysia, that the Mission is actually going to stop logging in areas where it is at present taking place. He said he had to be frank and realistic. It is important that no one goes away thinking that the Mission will be able to stop the logging here and now.

Dr Poore said there is a possible way forward, not by stopping logging altogether but by altering the ways, places and speeds at which logging takes place. E.g. it may be possible to recommend that there is much more consultation before companies start and that companies discuss what they are going to do and make some agreement. There is also a possibility that it might be suggested that logging is carried out in a way less damaging to things of value to the rural people. The third possibility is that certain areas within the logging concession might be left unlogged, as a reserve for wild animals, so that when logging stops they can increase again and move into the area which has been logged. Lord Cranbrook added that in such areas as Pulong Tau, which is proposed as a national park, as in Mulu National Park, it may be possible for Penan to hunt and this is one reason why it would be recommended that these areas be set aside.

The second speaker he could show on a map that part of 4th and 5th divisions that land which they claim as theirs. He said that boundaries had already been submitted to the government. He said maps could be forwarded.

About 12 representatives said that they had children attending schools. One member said that there is no hospital and that the people have stomach aches because of the dirty water which they have to drink.

Lord Cranbrook asked if it was agreed that if the forest is left, then it will regenerate. The second speaker said that this cannot happen if there is continuous logging. In all places there has been re-entry and no area has been logged just once. Lord Cranbrook said that the Forest Department is working hard to get forest



registered in Ulu Limbang so if this area is made into Forest Reserve, it will then be possible to prevent reentry.

The same representative said that if re-entry is prevented, the forest might regenerate but the trees will never be as mature and the soil never as original. A further problem is that the companies have created thickets in the forest so that it is difficult to move around in the forest.

He said the reason why the Penan are arrested is because they do not want to work in the company, although there are some people working from our villages, but we do not want to be involved in destruction.

The first speaker said that they want the forest as before. They want to be able to roam free without any restriction from authority. He said even in Mulu there are rules and regulations as to how people should live and which animals should not be hunted.

Mr Wadsworth said that experiments have shown that forests left after cutting respond to treatment which increases the second crop. These treatments do not destroy the trees but select trees within the area and give them room to grow. The representative said that now even the best trees are taken down and when one tree falls it takes others with it. Mr Wadsworth asked whether the people would be prepared to work with the forestry on treatment and whether they would participate. The work is close to where they live and could not be done without their help. Dr Wadsworth said that the selection of trees would be in the interests of the people, as well as the loggers.

The representative said he still did not agree because you cannot just pick out trees without destroying the others with them. He said we want to stop the companies taking those big logs which we need for building houses and boats. We have to go further for timber for these and how can we go up into the mountains to get timber.

The representative complained that if the companies do not stop this year there will be no more logs near the longhouses. He said today they came down in a longboat which is an old one. If you cannot do anything much for us then there is no hope for us and we might not be present tomorrow. He said they would like the Mission to visit their areas as well as those down river.

Lord Cranbrook thanked them for the points made.

A further speaker said they had come so that the Mission can help. He said they had been waiting for the Mission like the rising of the sun because want you to solve this situation. We do not want to do this job because we want the profit but because it is our livelihood.

Lord Cranbrook said the Mission members were experienced people from different countries and that they understand the problems and have the greatest sympathy. He said the Mission is not the rising sun but may possibly be a new moon which will grow.

Wednesday 21 March 1990 - Limbang

29. **MEETING WITH THE RESIDENT, LIMBANG**

Waslie Rambli, Resident, Limbang

**Also present:**

Liew Tchin Fah, Forest Department

Bahari bin Mohd Atan, Ministry of Primary Industries, KL

Dato Mohd Jabil

Cheong Ek Choon, Assistant Director, Forest Department

The Resident said that the district is only 3,000 km<sup>2</sup> and that there are small groups of Penan, totalling about 200. Three groups are semi-settled, although they still depend on the forest for food. He said he was trying to allocate 50,000 acres as a reserve but that this had to be a cabinet decision. He said that the matter has been discussed at the state committee. He said that the issuing of logging concessions also goes to the Chief Minister and similarly for de-gazettment of land. Long Napir was mentioned which is the area the Forest Department want to delimit.

The Resident said that there is a Divisional Action Committee which meets four times a year involving most of the state departments. However there is not much that can be decided as most of it is subject to government approval from the Chief Minister. He said there are two ways of accessing the Chief Minister, either by through the elected Assembly or through the State Secretary.

The Resident only becomes involved in court cases on appeal. He said that the fines for infringements of forest land have not been raised for years and that no action has been taken to do so. No one is imprisoned for clearing of forest because such a ruling would be blocked politically.

The Resident said that at Long Ma Penan are encouraged to go to school and they are provided with clothes, but this is sometimes abused. He said he had his own programme, whereby they are encouraged to live on a permanent plot. He said he did not want to disturb their way of life but there must be an area for them to settle themselves. He said the Penan do not cut down trees, they are quite responsible and look after the jungle. The Forest Department has an area in mind, which is at present under concession, which might be set aside for them.

Wednesday 21 March 1990 - Limbang

30. **DIALOGUE WITH COMMUNITY LEADERS, LIMBANG**

(see list of meetings for attendants)

Lord Cranbrook introduced the Mission members and the aims of ITTO and the Mission were explained. The group of community leaders comprised 12 from Limbang district and 8 from Lawas.

Penghulu Langub said that logging has not yet started in his village but he has seen the effects of logging elsewhere and is anxious that this should not happen when

logging comes to his vicinity. He said firmly that he did not want to forbid logging when there are people who are entitled to take the logs, but he charged the Mission to evaluate the likely effects and give advice on how to overcome the problems of water pollution, loss of game etc. He said the government is responsible for the people's well-being and he feared that sickness from foul water would otherwise decimate the population. He recognised that the timber trade is important for Sarawak and for its development. He said that development would benefit the people, but he proposed that a whole catchment area to preserve the water quality and the timber should be set aside for the sake of his community. He refuted allegations made that he is opposed to logging but he said it is incumbent upon the government to pay proper attention to the welfare of rural people and he wanted the authorities to weigh the alternatives of welfare versus the revenue to be derived from logging. He said that residents of Limbang town do not appreciate the hardships of rural life. He added that it would be useful for a road to be built for access.

Penghulu Liang said that logging began in 1986 in his area, in Lawas District, and is continuing. His major complaint was that the piped water supply to the community had been destroyed and has not been restored. He would like to be able to speak to the 'boss' - as complaints to the assistant have not resulted in any action and the children in the community are constantly sick and suffering stomach upset as a consequence of drinking this bad water. In the recent dry season there was inadequate rain to fill the drums for water and the logging company has not provided him with the tank which he requested. He has also asked for saw wood for construction of housing and this has not been given. He said that a prior agreement was made with the logging company that a bridge would be provided but despite guarantees this still has not been built. He said he wanted to meet the license holder himself and he asked the government for help in sorting out these problems.

Pemanca Jarom said he has the longest longhouse in the district with 70 doors and a total population of 589. It is the most upriver at the head of the Limbang close to Mulu National Park. Previously there was a six mile gap to the boundary of the forest reserve but the park has taken some of the forest which he considered part of his land bank and this has left too little forest for his community's agricultural needs. He said he did not quarrel with licenses to log being given but he would like to be given notice first. Otherwise the contractors employ his people without consultation and he loses control of them. He proposed that, to solve the problems, the licences should be given to the longhouse, so that he would be the principal controlling the contractor. He asked also for communal forest, not just for Iban people, but for all the communities living in the up river areas and he specified that they were short of wood for making coffins and boats.

TR Siran said that logging began in his village in 1974 and he agreed with the previous speaker about the effects on the environment already mentioned. He had three requests:

1. that a certain share of the profits from logging to go to the community;
2. that permission be granted for people to get timber from the forest for building houses;
3. that there should be a way to give the people benefits, and he suggested that one ton of logs be given to the community so that they will not feel that they are being ignored by the government. At present, although the logs are from their area, they do not get anything for this and he wanted compensation.

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Penghulu Giso said he was familiar with logging which has been going on in his area for 20 years. He said that there are good points in that people can get wages but the bad points are that the forest has been spoilt, the temuda has been intruded upon by roads and the animals and birds have gone. He made four proposals:

1. the logging contractor should compensate people on a perpetual basis for the meat that they have lost through lack of game as a result of logging activities. Meat is very expensive to buy.
2. the contractor should be required to use a certain proportion of local labour and should respect local customs. He said that his community are convinced Christians and will not work on Sundays and the contractor therefore refuses to employ them.
3. he asked the Mission to ensure that any proposal in the report should include prescriptions for the conservation of forests as well as for the conservation of birds, animals and fish.
4. he said that the contractor should be required to make paths and bridges to facilitate access to the farming areas by the village people. He said he has tried unsuccessfully to negotiate this with the contractor and the government should make it obligatory.

TR Leju (Penan, Long Napir) said he was pleased that the Mission was in Limbang and that its role is to protect the Sarawak forests. He specified that the major Penan problem is that if logging is to proceed then all their resources will be destroyed. He recognised that the government has offered help but said this has not always been sufficient. He reiterated the effects of the loss of animals and pollution of the water. He asked for exclusive areas in the headwaters to be protected because this is where the problems originate. He mentioned that the ipoh trees (*Antiaris toxicaria*) which provide poison for their darts, are impossible to replace and the people will be devastated if all these trees are felled. They are not common trees and he asked specifically that they should be protected, mainly by setting aside a large area. He said one tree is not enough, about 20 are required for his community. For generations, the location of this resource has been important. Over the past 10 years his people have been settling but they are still dependent on the forest for their resources. The logging has injured their forest resource and this is why action has been taken.

TR Tamin (Kelabit) said that his people had been involved in the blockades. One of his principle worries is that his people are short of timber for boats which are essential. He proposed :

1. the establishment of a communal forest for local necessities;
2. he said he was not opposed to logging but strongly opposed to encroachments on the temuda which have occurred in his area without compensation;
3. he requested that companies should employ local labour. His community has the same problem with working on Sundays and he added that one of the advantages of using local labour is that they would know where the graves are which are otherwise disregarded and destroyed;
4. he requested consultation and said it is essential that government should make proposals for suitable arrangements for restraint, otherwise blockading will continue.

He said that shifting cultivation must continue to allow Kelabits to get enough food. The settled Penan are starting to practise this form of agriculture.

Pemanca Amat b. Tuah said that, as coastal dwellers his community does not suffer too many problems but he did mention the problem of the log pond for logs which are rafted down the Limbang river. He said the empoundments sometimes extend right out into the middle of the river and cause navigational hazards.

Tem. Selutan Arin (Lun Bawang) said he recognised that the high forest that has not yet been utilized is government land and as it is the government who issues licences, this land is available for logging. He requested:

1. protection of the catchments of water supplies;
2. he stressed the need for following local customs and urged that trouble is not created. A serious knife fight had occurred recently with a logging company, when local people took timber from the concession area that they understood to be reject logs;
3. he asked for a communal forest to be set aside for community uses;
4. he felt that there should be a proportional allocation of profits to the people in areas licensed out;
5. he asked that companies should recognise the customary law of the local people who considered that ownership of a stream extends to the limits of its catchment area. When the loggers move in they should undertake consultations with the people concerned to ensure that there is no cause for dispute.

Abau (Penan) made two points: in 1983 his own gardens were totally destroyed by soil washed down from the logging road; he also said he was particularly concerned about his father who is still nomadic. His father is now in Magoh and he is worried about his father's sources of food. He said he has repeatedly prepared maps and presented these to the logging company showing the area which he considers ought to be reserved, but this has had no effect.

Dr Wadsworth asked how many people are involved in logging in the communities and Abau said that in his community it is only 10 out of 600 but there are more elsewhere. He said that there are some who have been forced to work against their consciences. Pemanca Jarom said that in his area about 23 longhouses are involved with about 20-30 people from each, but being Iban there is no religious problem. TR Leju said only 5 are involved out of about 200 from his Kelabit community. None of the Penan are involved.

Dr Poore asked if the existing areas of temuda are sufficient for future needs. Penghulu Giso said that among the Lun Bawang people, the cycle is down to about 7/8 years on the temuda and the population growth is such that there is certainly not enough land for hill-padi farming. He said he is working on the hillsides, well above the stream beds and all the flat land has been planted with rubber or other crops and therefore it is not possible to plant wet rice.

TR Leju said that for the Iban community there will never be enough land, but he did acknowledge that there has been a lot of government assistance in providing alternative crops. Because he is able to get an income from pepper plantations, he has farmed only about 5 acres last year whereas typically he would have planted about 20 acres to rice. He recognised that substitute cash crops are working and he

is grateful for that. The government has given assistance and he is encouraging his people to move from shifting cultivation to a more settled agriculture.

Thursday 22 March 1990 - Marudi

**31. DISTRICT OFFICE, MARUDI**

**Jefferi Usee Iboh, District Officer, Baram**

**Tuan Hj. Abu Kassim b. Hj. Abdul Rahim, Resident, Miri  
Ambrose Labang Jamba, Assistant District Officer, Baram  
David Kala, SAO**

The District Officer said that Marudi is administered by Miri division. Baram is the biggest district in Sarawak covering approximately 22,000Km<sup>2</sup> and in 1980 had a population of >60,000. He said it is unique in that there are so many ethnic groups: Penan, Kelabit, Berawan, Kenyah, Kayan etc. He said that the community leaders are hoping that the Mission will be able to solve their problems. He said that there is much confusion about the problems of logging operations, and in spite of individual officers who do try to clarify the situation by gathering the heads together and explaining to them the problems at ground level. He said that the community leaders of the various groups understand the government policies and are willing to assist the DO. He said there are also district projects which are well distributed.

Lord Cranbrook thanked the DO for his welcome and introduced the Mission members. Lord Cranbrook enquired about the Penan task force. Mr David Kala said that there are four primary schools in different areas and the following five places have been selected as centres: Long Lamai, Long Iman, Long Tepen, Long Bukan, Long Kevoh. He said there are about 5-6,000 Penan in Baram and that they are becoming settled: at Long Temai individual houses have been built some by the people themselves. The government has constructed some longhouses. At Long Keroh accommodation has been built by the timber company. Lord Cranbrook noted that the Penan naturally do not live in longhouses.

Mr Kala said that basic agriculture is taught. The idea is to educate them through their own people, as they are not responsive to government officers. The volunteers, having trained initially for three months in Bintulu, are paid M\$300 per month and they come back to report every three months.

The following statistics were given for numbers of children per family of Penan:

FAMILIES	NO. CHILDREN	
8	33	
10	52	
8	25	
7	36	
4	15	
11	52	
6	25	
<u>11</u>	<u>43</u>	
65	281	Average 4.32

Thursday 22 March 1990 - Marudi

32. DIALOGUE WITH COMMUNITY LEADERS & GENERAL PUBLIC IN MARUDI

(see list of meetings for attendants)

Lord Cranbrook thanked the Resident and the people for coming to assist the Mission in their task. He introduced the Mission members and Dr Freezailah explained the aims of ITTO.

Pemanca Ding Wan (Long Laput) comes from the biggest longhouse in Baram River. He said he was glad that the Chief Minister had invited the Mission and welcomed them. He said he favoured logging because his community gets work and he said he hoped that the price of logs will rise so that this employment can continue. He noted the problem of water pollution and turbidity and drinking water, although he did say that rainwater can substitute for this. He felt that ultimately the forest can regenerate.

Lord Cranbrook said that other such meetings have been held and at all of these and from what the Mission has seen and learnt, it has been made clear that a major problem as a consequence of logging is water, so the Mission is aware of the problems to the aquatic environment and that this will certainly be mentioned in the report.

Peng. Ngimat Ayu (Kelabit - Bario) said he was grateful for the information given. He said logging has not yet reached his area but he said he did not know whether or not the forests have been licensed out and he was concerned about the effects of logging and the altered environment. If the areas are not yet licensed, in the border areas of Sarawak, he suggested that the license should be issued to the local communities so that they can obtain benefits. On the other hand, he said if the licences have already been issued, it is vitally important that the logging contractors should consult with the local communities and this must happen now to prevent disputes. He said that many of his people urge that logging should not be permitted to extend to their area. But he noted that the revenue from logging has brought development benefits to the rural dwellers of Sarawak. He said these would not have reached the upper Baram district without logging. He concluded that logging must

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continue but it must be organised to minimise damage. He said that SAM should calm down and they were giving a bad reputation to Sarawak and he pointed out that there are community leaders and civil administrators who are aware of these problems and have the capacity to deal with them. If the licenses cannot be given to the communities, he said it is important that the benefits be distributed fairly to community members. He referred to saguhati agreements and said that compensation should be sufficient.

Mr John Francois asked what the people would do with the licenses, if granted. The Penghulu said that this is the people's ancestral land, particularly true for Kelabit people; logging of a community concession would be organised to satisfy the social needs and bring prosperity. This would avoid disputes.

Speaker 3 (Penan - Bario) said he wanted to speak generally about Penan of Baram and Tutoh area. He outlined the problems of the damage done to the land and the forest. There is a serious reduction in resources essential to the people such as game, fish, and sago, and also pollution of rivers. He went on to say that the majority of Penan are still dependent on the forest for wood for blowpipes, poison for darts, traditional medicines, sale products including garu wood, rattans, gums. He said that graves are desecrated and also that the modesty of his peoples wives and daughters is being disturbed.. He said that the profits of logging are going to others and it is the Penan who are paying the penalty. He said he had high hopes for the report.

Dr Poore asked whether the development programmes are any substitute for what is being done. Speaker 3 said he is grateful for the programmes but he said that these benefit only the settled Penan and not the nomads and the programmes cannot possibly substitute for the damage caused by logging.

Peng. Tengah Subai (Long Jegan, Tinjar River) said it is the first time he had experienced such a meeting. His area is being logged and he complained that there are only limited opportunities for work for his people. Trees which should be excluded, such as enkabang and jelutong are being cut and the graves are often desecrated. He mentioned that the water is polluted with diesel fuels.. He said that as his people have been in the area for over a century they should get a share of the financial benefits. He said there have been a lot of confrontations. He said he sought fair compensation for the difficulties experienced by his people.

Speaker 5 (Iban - Bakong) mentioned river pollution and the difficulties encountered obtaining firewood and housing materials and also he said he would like to seek compensation.

Peng. Etah ak Jambai (Iban - Sg. Selpin, Bakong) made a strong representation for the Dayak community. He was concerned that his land is being taken by a development scheme. Mr Cheong said that this land of plantation is State land and is not forest reserve which is being cleared. Lord Cranbrook said that the Mission is concerned about the use of forest and in ascertaining the sustainability of the forest to weigh the conversion to plantation agriculture, to hill padi and other changes of use. He said he was glad to have the information brought to the Mission's attention.

Penghulu Asi (Bakong) said he was glad to know that such a meeting had been arranged.

Speaker 8 (Kayan - Long San) said he appreciated that the Chief Minister had invited the Mission but he said there are problems with disputes between the local



people and the loggers. He wished that proper management of logging be implemented for the benefit of the younger generation.

Speaker 9 repeated the problems resulting from logging. He said he has approached the timber company for compensation but has not obtained this. He was reported to the authority and consequently arrested. The other problem is the implementation of the development scheme and compensation has not been paid fairly and resulted in blockades. He questioned who should pay the compensation: the company, the purchaser of wood or the government. Lord Cranbrook mentioned the proposals for the levy.

Ajeng Kiew (Penan - Long Belok, Apo) said he has been actively involved in the blockades. He said he supported the Penghulu and said that the Penan are totally dependent on the forest for their existence. If said if this meeting had not been held today, there might not have been any Penan at the meeting at all. He pointed out that in 1987 it had been asked for projects for the Penan but these have not been forthcoming and it is the impetus from the blockade action which has forced the government to take action and to recognise the needs of the Penan community. He said that the promises of M\$ millions from the government is just words. He said he supported SAM and did not share the sentiments of Kelabit Penghulu because he believed that Friends of the Earth has been effective as a mouthpiece for the Penan. He said he did not know whether licences have been issued for his area, but if they have they should be withdrawn. Now and not in two years time because that will be too late. He said that the allegations that it is foreigners who have inspired their actions are not true, but these are the feelings of the Penan. He said it is a lie to say that development is benefitting the Penan and that he would not take a cent from the company. He said that the future of the Penan and all the upriver people is bleak.

He said that a dwelling of some sort has been erected for his community by the Merlin logging company at Long Belok in Apoh River. Dr Poore asked what development the Penan would wish for. He said that clearly the Penan do need money, they do not have plantations or grow tree crops and depend on forest products and selling these for money. They have not yet received the benefits of development. He agreed that the market for damar gum has collapsed and garu wood has been used up. He said even the Malays and Chinese are going and taking forest products from the forest. He said he wanted schools and health centres. He said he is not anti-development but their lifestyle will always depend on forest products and it is essential that there should be an area of pristine forest and the only way to obtain this would be to withdraw existing licences in the areas.

Edward Dungan Along (Bakong) said that timber is a very versatile commodity and can regenerate in one lifetime. Commercial logging can be sustained and the ecological balance maintained. He said that the Dayak cannot trust any action plan from the government without the democratic participation of the Dayak people who depend on the forest. He said that for the past 25 years the politicians have had no experience in sustaining forest for commercialism. Their main concern is profit and the logging companies are similar. The future for the Dayaks is clear, no logging until there is a sincere and concrete programme to sustain forest cutting. The western world and Japan must find an alternative to wood products. He asked if the policies to promote utilisation of sustainability of Sarawak will let people get involved in the conservation.

Lord Cranbrook said that the Mission is a voluntary group and does not work directly for ITTO. The report is for the organisation. Dr Freezailah said it is part

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of a long term plan to raise the value of forest products so that there shall be benefits to the communities at large.

Balang (Kelabit - Long Seridan) said his area is right in the centre of seven logging companies. He said they have roads and communications but the land is totally spoiled. There are five Penan communities in the area. He said he asked for a reserve long ago for community use but the decision has been constantly postponed. They are dependent on forest resources, particularly for house building. The Penans have come to him suggesting they blowpipe the logging operators and the Iban have suggested that he should blow-pipe the Penan. He supported the Penghulu that the logging licences should go to the communities because there then would be orderly management of extraction and the benefits would be shared amongst the people.

Lawai Usat (Long Banyok) said that he was glad to have the opportunity to speak about the problems caused by logging companies which threaten their survival. He said there are eleven timber companies operating within the boundaries of his land. His longhouse has 70 doors. Before the timber companies came in 1970 when there were plenty of fish, animals and rattans. After 1970 the timber companies invaded the area and they were told that there would be development opportunities to improve their so-called primitive living. They promised employment and a share in the profits. The NCR land was given away without our permission and sometimes the people were cheated and deprived by the timber companies. A total of 1000 acres of fertile NCR land was bulldozed and flattened to make way for the logging operation. He said they want to preserve the land for their children.

He said that the waters of the Baram river are chocolate coloured and totally unfit for human consumption and even for washing. There is no wild game in the area, either it is hunted by timber workers or chased into the interior by the noises of chainsaws. There has been no proper consultation and although they promised employment, no one works because of the low wages. Out of the total 700 people at Long Banyok only 35 are working in a timber company. Most of these are doing rough and risky jobs which are low paid. In spite of meeting the authorities to discuss problems. In early 1987 a human blockade was put up on NCR land where the logging road passes through to stop further damage to the land. Instead of solving the problems, they sent in the military and two months ago, the military went to their longhouse and they are afraid they will be hurt if they blockade. He said they are being accused of anti-development and having subversive elements, to which he strongly objected.

He said there is no regeneration or promotion of sustainable forest management in the Baram district. Money is benefitting the few and is depriving the majority. Instead of improving the lot of the people, the situation is getting worse. He requested that the Mission make the following recommendations to the State government:

- a) Stop logging immediately in the Baram;
- b) Recognition of the people's land rights in practice;
- c) Introduction of a clean water supply and proper health facilities;
- d) Withdrawal of military presence in the Baram;

He asked the Mission to pay a visit to his area in order to see the reality of the situation.

Lord Cranbrook said he regretted that the tight schedule of the Mission did not allow for further journeys and that is why such dialogues are valuable. He said he was very grateful for all the people who had attended.

Joshua Lawai Lawing (Long Palo, Tutoh) thanked the ITTO group for visiting Baram and thanked the Chief Minister for allowing them to come. He said that since independence, numerous timber licences have been issued to people in Baram. By 1978 it was found that rivers had become muddy and the land could not be planted because of landslides. Complaints were made to the Chief Minister and the state assembly man but no notice was taken of these. So with no alternative the people protested and some were arrested, including himself. He said the government promised that the wealth of the country should be shared amongst the people, but this has proved to be only words and has not been put into practice. Because of this some people were arrested and put in the lock-up for several days.

He said that these people have been on the land since the time of James Brooke and they understand that this land is government property but do not understand why the government gives it to people from outside and not to them. He said they agreed that the government should give licences but they should consider aspects such as pollution of the water. If there is no alternative, he said they would have to ask how much the company can afford to give them. He said it would be better to withdraw all these licenses because they are only trouble. He questioned what the difference was between them and people in Miri, because the local people also want the licenses. He said they also want cars and good buildings and to live well, like the town people. The Prime Minister encouraged Malaysians to work hard and use their brains and exploit the resources around them, but the people are not given a chance. He said he had written to the Chief Minister of Sarawak, and to the Prime Minister begging them to consider this matter but the letter was turned down. He said the people need money for their children to study and many people cannot continue to study because they have no money. If the people cannot be given the licenses then he said the companies should give them, through the government, not less than M\$30 per ton timber so that this money can be used for education for their children and other needs.

Enya (Bakong) said that no amount of study and policies put forward, such as TFAP and FAO reports could succeed being carried out if the following are not corrected:

1. the Japanese government must stop buying whole logs from Sarawak and there must be a balanced infrastructure of logging companies. At present all cutting is by timber tycoons;
2. Sarawak forestry includes the Dyak community and any decision-making regarding control of the forest.
3. community forest must be made available for indigenous people;
4. there must not be cutting of the forest to give a way to plantation;
5. the Mission should investigate the system of issuing of timber licences which at present is controlled by one single man;
6. the ITTO Mission must look into the irregularities of timber exports to countries like Hong Kong and Singapore where Sarawak timber tycoons sell to overseas clients and buy cheaply from Sarawak.

Speaker 16 - Berewan: said he wanted make known the difficulties encountered with timber companies in Tinjar and elsewhere. The people have been deprived of building materials. If they want to get wood from the area, they have to get a licence from the forest office. He said they are against development schemes from

the private sector and will not work for the low wages which are prevalent in schemes of this nature. He said one Berawan longhouse is near a national park (Mulu) and it is now very difficult to obtain timber for boats and coffins etc.

Monday 26 March 1990

**33. MEETING WITH SALCRA/SPU/LCDA**

Sarawak Land Consolidation and Rehabilitation Authority  
State Planning Unit  
Land Custody & Development Authority

**Dr Hatta Solhee, Deputy Director, Department of Development**

**In attendance:**

**Wan Ali, PS Ministry of Land Development**  
**Jayl Langub, Principal Assistant Secretary, SPU**  
**Ubaidillah Abd Latip, Principal Assistant Secretary, SPU**  
**Benjamin Dublin, LCDA**  
**Robert Econe, Assistant Manager (Agriculture)**  
**William Jitab, Deputy General Manager, SALCRA**  
**Cheong Ek Choon, Assistant Director, Forest Department**  
**James Dawos Mamit, Forest Department**  
**Dato' M Jabli, Co-ordinator**  
**Ose Murang, Senior Agricultural Officer, LCDA**  
**Llaw Soon Eng, Principal Assistant Secretary, Ministry of Land Development**  
**Phillip Foster, Planning Officer, SALCRA**  
**James Entika, Administration Manager, SALCRA**  
**Mawl Taip, Public Relations Officer**  
**Rabyah Mohd Mansor, Assistant Secretary, Ministry of Resource Planning**

Dr Hatta opened the meeting to discuss land policies and strategies in the State; he called for frank discussion of the problems and potentials.

After introductions all round, Dr Hatta reminded the Mission that of the 12M+ ha land area of Sarawak, < 3% at present is used for permanent crops. The State government therefore believes there is good potential for commercial agriculture and consequently the Sixth Malaysia Plan gives high priority to land development. The government role is to provide infrastructure for private development.

The state at present is very reliant on petroleum and timber, exported in raw form. Agriculture consists mainly of small-holders, with low productivity and poor financial returns. The State hopes that land development will (a) increase employment and (b) raise productivity of under-utilised NCR land.

Sarawak Areas of Commercial Crops - 1990 (end of 5th Malaysia Plan)

1.	Cocoa	50,000 ha (mostly small-holders)
2.	Oil Palm	35,000 ha
3.	Rubber	from 1970-90 planted 45,000 ha plus est. 200,000 old small-holdings (many abandoned or in poor condition)
4.	Coconut	18,000 ha (small holders)
5.	Pepper	18,000 ha (small-holders)
6.	Tea	200 ha (SALCRA)

+ Shifting cultivation 23-25% land area available @ 60-70,000 ha/yr planted

In answer to Dr Wadsworth, Dr Hatta confirmed that subsidies exist for sago, cocoa, rubber, pepper, and wet padi: mostly in kind, e.g. pesticides and seeds but some cash incentives, e.g. for surface drains.

Points raised by the Mission:

The Mission is interested in agricultural plans in relation to forest and is looking for points where the report can be supportive. It was explained that it is hoped that the report will avoid conflicting with longterm plans for agriculture.

Mr Wan Ali said that the Ministry takes a realistic view of the future of commercial crops, in view of the limited areas of suitable land (mostly Miri-Bintulu belt), and the low labour resource. The Ministry of Agriculture handles small holdings. The Ministry of Land Development was established in 1985 to encourage development of the commercial sector.

There are doubts about large-scale cocoa crops: the emphasis is on palm oil. There are problems of NCR claims on areas earmarked for plantation: this cultivation is regarded as illegal but still encumbers land with claims. Sarawak sees a future, since the Peninsula and Sabah are saturated. In Sarawak there is some 250,000 ha earmarked: and this is land mostly alienated, none in "virgin forest". Most licenses have already been issued: there is a prospective 10 year plan to 2000AD for development for the commercial sector (non-small holder). 171,000 ha remain undeveloped as of now. No further alienated land planted, but coastal shallow peat areas are being looked at; e.g. 16,000 ha for sago; tapioca may also be suitable on peat.

Dr Wadsworth asked where in Sarawak there would be minimal conflict between forests and land development. Wan Ali replied that afforestation with fast growing tree crops may be valuable for illegally occupied NCR land.

Dr Wadsworth raised the issue of alleged NCR as a frustration. Wan Ali said he saw a form of contract farming with plantation crops as a way forward for legitimate NCR through assistance with estate management. Non-legitimate claimants are offered estate labouring jobs but they are unwilling to take these because of low wages. State government takes a liberal stance but takes a case by case approach. Investors find encumbrances and claims an inhibition. In clear cut cases of illegal occupation, alternative land is supplied: some plantations compensate for squatters if crops, e.g. pepper. Plantations are encouraged to give employment priority and shares of facilities, e.g. clinic, electricity to longhouses concerned, i.e. mutual goodwill. The problem is constant, with no immediate solution. There is a stock of 1958 air photos to substantiate the legal position.

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Benjamin Dublin said that LCDA is the youngest government agency, incorporated in 1981, to enable the government to develop both urban and agricultural land. The main present thrust is urban, e.g. in any declared development area, etc. per ordinance.

LCDA act as intermediary between land owners and companies developing land. They give loans to developers and also act in Native Areas Lands. LCDA development strategy is as a facilitator between land owners and private/commercial developers.

4 ways to deal with State land:

1. estimate potential and identify private Companies(?)
2. Joint venture, e.g. CDC
3. directly involved to overcome socio-economic problems, e.g. sago (long gestation period 10-15 years);
4. provide lands for other authorities e.g. FELDA which provide finance.

NCR land is considered a priority because shifting cultivation is the worst possible use of land. But they seek consensus with land occupiers and will not enter into agreement without consent. [It is intended that the scheme should provide employment. Most squatters have land elsewhere: in some cases, incursions have occurred in immediate anticipation of a scheme. Alternative areas are provided from State Land for resettlement]. From 1985-95 60,000 ha is projected for agriculture = c. M\$200M, cf. budget M\$600M for urban renewal (about 30,000 ha has been given out and the balance is identified in logged state land. NB this figure is within 250,000 ha cited above).

Dr Wadsworth asked if salvage cutting was accelerated if land is allocated. In answer, Mr Benjamin said that forest plans were not accelerated. Mr Wadsworth said that it appeared that stateland forest was being felled long before planned conversion. Mr B replied that, in general, development land was only taken from logged forest; Wan Ali added that, in cases, e.g. Sampadi, Lundu, (with FELDA) the felling programme was integrated with plantation. If the Forest Department have strong grounds e.g. PF communal forest, water catchment area, mangrove swamps, then the forestry interest will prevail.

Ose Murang explained that sago plantation near Mukah on 10-12ft peat is now under peat swamp forest. The area was selected because Melanau population nearby have skills and needs for sago. About 20% Sarawak is under peat forest, mostly in Sibu division; the shallow peat is less suited to sago (needs >5ft peat). Sago expected to succeed throughout deep peat swamp forest. The development cost is very high and for the time being sago is unacceptable for the private investor. Therefore, as an experiment, LCDA has about 1000 ha in which sago is successfully established and expected to be self-perpetuating after c. 12 years. Small holders also given subsidy to plant sago.

William Jitab said that SALCRA was formed in 1976 (2nd oldest state land development agency) (1) because of problems faced by Sarawak Land Development Authority in Mukah area, where there was conflict with land owners; (2) because of the >2M ha NCR land in rural areas where about 60% population depends on agriculture. SALCRA concentrates on NCR land (see ordinance): consolidation, rehabilitation, and development of land for agricultural objectives (1) to bring about

improvement in socio-economic conditions, and (2) to build up a self-reliant and progressive rural community.

In answer to Dr Wadsworth, William Jitab emphasised that the role is to develop land that has been under shifting cultivation. There are no agroforestry schemes under SALCRA at present, but potential investors exist and proposals are being evaluated. Land claims (legitimate) are preserved: land owners provide labour; benefits are returned to land owners; full consent of owners is a prerequisite.

Land classification: 1. mixed zone; 2. native area; 3. reserved land; 4. NCL (rights established prior to 1 January 1958); balance is 5. interior area land. SALCRA only selects areas of degraded shifted cultivation (e.g. NCR - NCC "Native Customary Claim" land).

From May 1976 - February 1990 15 schemes were established, including 1 resettlement (Batang Ai):

Oil palm	8502 ha)	
Cocoa	4433 ha)	benefitted 5055 families
Rubber	927 ha)	
Tea	190 ha)	

+ 1 palm oil mill and 4 cocoa processing facilities. These were financed by grants and loans, e.g. state and federal governments, and the Asia Development Bank.

**Problems:**

1. scarcity of local labour and skills;
2. untimely release of funds;
3. conflicting objectives, e.g. Lubuk Hantu scheme was intended to be a socio-economic benefit, but was criticised for lack of profit.
4. NCR (a) unreserved; (b) ill-defined boundaries; (c) marginal soils/terrains; (d) inaccessible; (e) takes 1-2 years to sort out (a) & (b).

Wan Ali said that loans to SALCRA, (currently at 4%) should be waived by the Federal Government. Even if loans are interest free, repayment is not possible.

Dr Wadsworth asked about the extent of montane habitat which is non-forest; and the extent of land suitable for agriculture, at present 28% and what is the limit to planned settled agricultural use (forestry time scale). Dr Hatta agreed 28% land is suitable for settled agriculture, and said much of it is probably under shifting cultivation. He agreed that there is other land (outside suitable class) also under shifting cultivation.

In answer to Dr Wadsworth's question why there are delays in conversion of stateland forest to PFE, Cheong said that this is mainly attributable to public hearings on claims and objections by DO/Resident; ground boundary cutting.

Dr Wadsworth asked about the strength of agricultural extension programmes, especially in marginal areas and whether ITTO could make useful recommendations towards agriculture intensification and reduction of shifting cultivation.

Dr Hatta said that all crops including hill padi and aqua cult. and livestock, rotan planting etc. are all subsidised including small-holdings for oil palm near estates.

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Dr Wadsworth said that the subsidies for hill padi abets shifting cultivation. Re terracing and drainage: Wan Ali said irrigation schemes meet initial enthusiasm, but when the infrastructure is provided, land tends to be under-utilised. If irrigation is needed urgently, then drainage will cooperate with Agriculture infrastructure c. extension(?). Examples of manipulation to increase land value.

Dr Wadsworth asked whether timber related activities could not provide rural employment and Wan Ali said that plywood/furniture factories are encouraged but he said that local labour is not forthcoming. The service sector and oil industry are highly competitive. The Ministry therefore plans to take jobs to rural areas and in the long run this will service communities near longhouses. About 7043 (inc. 3496 Sarawak) employees are now in plantation industry, and this is projected to need extra 8000 in the next phase.

In the last 3 years \$126M was invested in FELDA, SLDB, SALCRA, FELCRA, which includes forest royalty.

Dr Wadsworth asked if there is a map showing slope.

Mr Seip asked if there is any projection for settled agriculture beyond 2000AD.

Dr Hatta said that Canada is to be engaged in helping to make a master plan.

It was questioned whether the 3.3M ha shifting cultivation is still expanding or whether urbanisation is reducing pressure or the population growth increasing it. Dr Hatta said that the population is increasing in rural areas; SALCRA, LCDA hopes to reduce the pressure. Debatable views. Mr Benjamin justified the use of foreign labour to give modernisation of agriculture and increase productivity of land. LCDA plans to create subcentres of economic development, but finds difficulty in competing with Peninsular Malaysia. Wan Ali said this comparative disadvantage needs to be recognised: downstream refining should help; port changes; tpt (?) changes need to be reviewed.

John Francois asked if a reserve settlement commission could speed up the stateland to PFE transfer and Cheong answered that a change in ordinance would be needed. Mr Francois said that the point is that the DO is busy.

Mr Munoz-Reyes said that the session had been very interesting and had assisted the understanding of problems, many of which are similar to Bolivia (1.2M Km<sup>2</sup> area - 48M ha forestry).

Lord Cranbrook asked about rivers /stateland and whether navigation is a responsibility of the Marine department. Land and Survey are responsible, but in forest concessions a 6 chain reserve is enforced by Forest Department.

William Jitab replied that the DO is responsible for e.g. sand and gravel extraction which has to be licensed. D & D department (?) clears rivers and rapids.

Jayl said that the District Administrator accepts responsibility to enforce riparian reserve from river bank in areas of shifting cultivation.

Wan Ali asked whether the Mission favoured reforestation by plantation and Dr Wadsworth said that though his experience in Sarawak is limited, there is potential although further research is needed and slope is a limiting factor. Wan Ali asked if



the Mission could provide the expertise. Mr Francois said that the Mission will make recommendations and encourage cooperation via ITTO to improve management.

Dr Hatta said he was prepared to give a briefing on the Penan but was uncertain whether this would be included in the report.

Jayl said that there were new initiatives after the blockades: 3 service centres had been established; volunteer corps sent out for the benefit of settled and semi-settled groups and a proposal for biosphere reserve, which has now changed to national park.

There are two service centres in Baram and one in Belaga. These provide basic amenities (education, medical and agricultural extension). These pilot projects are intended to be within a day's journey of Penan settlements. Ownership of land is critical. Although all have settled after 1958, their clearances are recognised as NCR: the state government is sympathetic and has powers to give stateland to the community. The Penan concept of ownership = "stewardship" - right over land where they live and work. Wan Ali emphasised that this domain cannot be recognised as a claim by state government.

Jayl said that the number of nomads is not changing; but the Magoh people now more often emerge to visit settled people. There are six nomadic groups in Magoh area and 2 groups in Adang river areas; these two areas are proposed as biosphere reserves/ NP to accommodate their immediate needs. The Forest Department is aware of this proposal.

Benjamin asked why a communal forest is not preferable to a national park and Cheong replied that clarifies that communal forests are usually rather small and used as a timber source. These areas are appropriate for national parks also on other grounds. Penan privileges would be registered.

Jayl clarified the term "biosphere reserve" which does not exist in Forest Legislation.

The Penan volunteers are all Penan with 1 Ukit girl and 1 Kajang girl. All are educated to assist a simple community in development/medicine/hygiene in the villages where they are accepted. e.g. one youth in Long Kebok whose parents are nomads in Magoh. Many Form 3 (educated) Penan are now in Miri in various employments.

Tuesday 27 March 1990 - Kuching

#### 34. WORLD WIDE FUND FOR NATURE MALAYSIA

Dr Mike Kavanagh

The WWFM document "Rainforest Conservation in Sarawak: an international policy for WWF" was discussed.

Dr Kavanagh said that it is an internal document for policy formulation within WWF. He said that the authors are not foresters. He noted the main issues: 1. the long-term

future of viable representatives of natural forest habitats; 2. uses of forests and forest products in the Sarwak economy. He said that the orientation of the report is based on the knowledge that the ITTO Mission had been constituted.

Ref p.6 - 2.2

**AREA & FOREST TYPE** - figures have subsequently been modified: an area map of remaining primary forest was promised for the end of 1989. Without a map of advance logging concessions, WWF finds it difficult to make recommendations. Dr Wadsworth said that Austin Dimin has given the Mission a tabulation.

Ref p.8 - 2.4

**PROTECTION FOREST** - there has been no gazettelement in the normal sense. Terrain class basis is only used to set aside the forest for a protective role. Other Malaysian States have all now incorporated the National Forestry Act. The functional categorisations in this act are easily comprehended by non-forest civil servants. Formal gazettelement gives more stability to areas concerned.

Ref p.11 - 3.2

**NATURAL HABITATS** - the categorisation in 3.2 is somewhat arbitrary. The projected Pulong Tau National Park and existing Mulu national park protect the most important montane forests in Sarawak. WWF's concern is concentrated on lowland habitat, especially peat swamp forest, where little primary forest now remains, and mangrove, as identified by Dr E Bennett. Dr Kavanagh said there are floristic differences between north and south of the country. Sarawak limestone flora in Sarawak's southern limestone forests need preservation and there are no plans at present drawn up to protect any representative examples of such areas.

Lord Cranbrook said that the Forest Department had raised concern about the relict forest areas of southern Sarawak. Part of the problem is that they are very small and not easy to categorize as TPA. Dr Kavanagh said it would be easier if they followed the forest legislation of the National Forestry Act and had a category "Amenity Forest" as in the Peninsula. He said that in general Sarawak has good plans for natural habitat protection, but the slowness of legal procedures to gazettelement are a serious problem. Since the initial batch of gazette orders in 1970s there has been a subsequent serious lag. "Nature reserves" would be a partial solution.

The DUN enquiry was a unique event. Dr Kavanagh said he did not consider that separation of the NPWO from the Forest Department should be pressed, although the status of NPWO needs enhancing: the head must equate with other department leaders and must have freedom to employ staff with special qualifications.

A further important change will be to remove Wildlife Sanctuaries from "forest" category so that they cannot be licensed out for logging. A number of ordinances in both NP and WS are to be put up for amendment at the state assembly in May. [Mission has not seen these drafts].

Dr Kavanagh said that anything the Mission can do to support the proposal for Batang Ai National Park would be helpful. There are important trans-frontier implications with Indonesia. He said there are three such areas for cross-border reserves: Kayan Meterang is an actual reserve in north with a population c. 12,000; a second adjoins Lanjak Entimau (proposed Gunong Betung dan Karimon) and the third is an area in the extreme west, adjoining Samunsam Wildlife Sanctuary.

Ref. p.23 - 5.2

**TIMBER CONCESSIONS:** Dr Kavanagh suggested consideration of the example of the Sabah Foundation which owns a large concession which is run for the people, and a similar idea might be included in Sarawak.

Ref p.25 - 5.8

**INVENTORIES:** Dr Kavanagh said that there are conflicting reports about inventories but WWF did not feel qualified to make a recommendation. Dr Wadsworth said that if a plan of management is started, there must be an inventory of the entire area. He said it would be helpful to know how many species may be carried by the sanctuaries. Dr Kavanagh said that limited work on birds and mammals has been done in the Peninsula and Sabah but more should be encouraged on microclimates, which may be the most delicate.

Ref p.26 - 5.9

**MARKING OF FELLINGS, RESIDUALS AND DAMAGE CONTROL** - it was noted that the Forest Department withdrew in 1982 the law of fines for companies not cutting all marketable trees, as this inefficiency allows for regeneration. If re-entry can be stopped the Forest Department feel this regeneration can help.

Dr Kavanagh said that it is important to get enforcement of re-entry logging. Also WWF are aware that they have not tackled the issue of the method of logging, e.g. high-lead or tractor.

Ref p.28 - 5.10

**ROADS** - Dr Kavanagh asked whether more forest is cleared for roads than necessary and also noted the crucial issue of road opening up areas for shifting cultivation. It was noted that the management plans, with regard to the prohibition of logging in terrain class 4, should be examined.

Ref. p.32

It was noted that Environmental Impact Assessments are not carried out despite the fact the Ministry of Tourism and Environment have told Dr Kavanagh that they do apply to Sarawak. The Director-General of the D of E is supposed to decide before a concession goes ahead. Dr Kavanagh said that the implementation could be made practicable if there was a standard for similar areas.

Ref p.37 - 6.2

**NATIVE LAND RIGHTS** - Dr Kavanagh suggested that it might be fairer to communities if the amount of profits coming out of an area is measured and a proportion channelled back through the DO in the form of local projects.

Ref p. 41 - 6.5.3

**COMMUNAL FORESTS** - Dr Kavanagh drew attention to the reluctance of the forest department to permit any new communal forests as they lose control over the forestry and it is open to abuse.

Ref p.46 - 7.2.3

**STANDARDS OF ANNUAL ALLOWABLE CUT** - For some of the standards set there is little enforcement except minimum size limits. Others are set by the practical requirements of operators.

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**Ref p.49 - 7.5**

**REPRESENTATIVE HABITATS** - Dr Kavanagh noted the length of time required for the implementation of TPA. However much protection through law there is, there must also be adequate manpower.

Lord Cranbrook thanked Dr Kavanagh for coming to discuss the WWF paper which he said was an extremely important document for the Mission to look at.

Mr Bjorner added that a WWF/UCBT meeting held in Denmark 15 months ago led to an agreement to set up a workshop to meet on a regular basis. Mr Bjorner said that so far WWF have made a good partner in working towards preservation of the rainforests.

Dr Kavanagh said that if a project is established it is hoped they will be able to employ a Forest Conservation Officer. He said WWFM had been given a major donation (M\$ 0.5M) from the state government and intend to spend it specifically on projects with the Forest Department which they will develop when they have seen the report.

**APPENDIX III**

**Background Documents and Written Submissions**

**ABIN, Raymond**

Invitation to visit Belaga and Ulu Rejang with regard to Problems of Logging  
Letter to Mission leader from R Abin, 6 February 1990

**ABIN, Raymond**

Letter to Mission leader  
Letter from R Abin re Mission visit to Belaga District, 13 February 1990

**ABIN, Raymond,**

Invitation to Conducting Case Study on Forestry Situation in Logging Areas in Belaga District  
Letter to Mission Leader, 9 January 1990

**ADLIN, T D Z**

The Role of Non-Government Organisations in Environmental Conservation in Sabah  
The Sabah Society, November 1988

**AHMAD, Ibrahim,**

Destruction of Forests in Sabah, Malaysia  
Letter to Mission Leader from Ibrahim Ahmad, 2 June 1989

**ANDERSON, J A R**

Observations on the ecology of the Peatswamp forests of Sarawak and Brunei  
Proceedings of the Symposium on Humid Tropics Vegetation

**ANDERSON, J A R, JERMY A C, & CRANBROOK, Earl of,**  
Gunung Mulu National Park: A Management and Development Plan  
Royal Geographical Society, London

**ANON**

LCDA and Native Land Rights: The Present Contraversy in Bakong/Tinjar Area, Miri

**ANON**

Report on the Effects of Logging Activities on the Penans in the Baram & Limbang Districts: A Short Term Development Programme

**ANON**

Development Plan for the Penan of Sungai Layun Area, Baram  
Ministry of Resource Planning, Sarawak

**ANON**

Sukarelawan Desa  
Ministry of Resource Planning, Sarawak

**ANON**

Extract from SARAWAK LAND CODE & accompanying papers re native customary rights (some in Malaysian)  
Sarawak Government

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**ANON**

**Annual Report of the Department of Agriculture Sarawak for the year 1986  
Department of Agriculture, Sarawak**

**ANON**

**1986 Annual Statistical Bulletin, Sarawak  
Department of Statistics, Sarawak Branch**

**ANON**

**Laws of Malaysia, Act 127, Environmental Quality Act, 1974  
Cetakan Semula 1987**

**ANON**

**Sarawak Log Grading Rules 1987 Edition  
STIDC, June 1987**

**ANON**

**Guidelines for Safety Policy, Rules & Regulations  
STIDC**

**ANON**

**Details of Public Environment Bill, Sixth Malaysia Plan  
1991-1995 UPE (S) 11/133/100/5**

**ANON**

**March 1989 Monthly Statistical Bulletin, Sarawak  
Department of Statistics, Sarawak Branch**

**ANON**

**Malaysia: 1989 Yearbook  
Kuala Lumpur**

**ANON**

**Brief Information on Development Programme for the Penan of Sarawak  
Department of Development, State Planning Unit, Kuching,  
November 1989**

**ANON**

**Deep Rooted Problem  
Borneo Bulletin, 25 November 1989 ('Your Letters')**

**ANON**

**Penan Struggle Continues  
Utusan Konsumer, January 1990**

**ANON**

**Campaign for a boycott of tropical timber deplored  
Jakarta newspaper, 1990 (?)**

**ANON**

**Sarawak to Export Less Logs from July  
New Straits Times, 21 January 1990,**

**ASHTON, P S & BRUNIG, E F**

The variation of tropical moist forest in relation to environmental factors and its relevance to land-use planning  
Welforstwirtschaft, Nr. 109, November 1975

**ASIAN WALL STREET JOURNAL**

Uprooted Trees and Natives Snag Sarawak PR Fete  
Asian Wall Street Journal, 23-24 February 1990

**ASPINALL, R**

Medical Consequences of Logging on the Indigenous Peoples of Sarawak, Malaysia  
WILD, News Release, 26 January 1990

**BARU BIAN**

Letter to Mission Leader, 5 January 1990

**BARUDI Ak LINGGONG, Sylvester,**

S. Barudi Linggong - Appeal for Financial Assistance to Run for a Malaysian Member of Parliament

Letter from S Barudi Linggong to Mission Leader, 5 December 1989

**BENGAU Ak ALONG, Edward**

Honourable Sir Cranbrook and his ITTO Mission from Chairman, Bakong Tinjar Dayak Association

Submission at Marudi dialogue, 22 March 1990

**BENNETT, Elizabeth L**

The Value of Mangroves in Sarawak  
Sarawak Gazette, Vol 63, No.1502, 1987

**BERNAMA**

Logging Not a Threat to Penans, Says Govt Team  
The Star, Friday 24 February 1989

**BERNAMA**

Setting the Record Straight on Timber - Asean D-G: Sarawak chosen for 'right backdrop'

**BORNEO BULLETIN**

Jungle Aid for Protest Natives

Borneo Bulletin, 31 December 1988

**BORNEO BULLETIN**

Corps to Steer Penan Progress

Borneo Bulletin, Saturday 5 August 1989

**BORNEO BULLETIN**

Prince's 'Penan Genocide' attack is rebuffed

Borneo Bulletin, 17 February 1990

**BORNEO POST**

ITTO Mission Pays Courtesy call on Taib

The Borneo Post, 29 November 1989

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**BORNEO POST**

**Pertemuan Charles-Umno sedang diatur**  
Borneo Post, Saturday 24 February 1990, p.12

**BORNEO POST**

**CM: Price for Manser's head reports not true**  
Borneo Post, Monday 19 February 1990

**BORNEO POST**

**EC reaffirms interest to the rest of the world**  
The Borneo Post, Saturday 17 February 1990

**BORNEO POST**

**Suit to Stop logging: Verdict deferred**  
The Borneo Post, 30 March 1990

**BORNEO POST**

**Prince Charles influenced by past events**  
Borneo Post, 25 February 1990

**BORNEO POST**

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The Borneo Post, 25 March 1990

**BROSIUS, J P**

**The Penan of the Belaga District: Considerations for Development**  
J P Brosius

**BROWN, Paul**

**Greenhouse Gas Freeze Blocked**  
The Guardian, 8 November 1989

**BRUENIG, E F**

**Use and Misuse of Tropical Rain Forests?**

**BRUENIG, E F**

**The History of Forest Inventories in Sarawak**  
Reprinted from *The Malayan Forester*, Vol. XXVI No. 3, July 1963

**BRUENIG, E F**

**The Management of Forest Estates Through Working Plans**  
Yau Seng Press, Kuala Lumpur (reprinted from *Malayan Forester*, Vol. XXVIII No.1

**BRUENIG, E F**

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