



## after the rain falls

*the impact of the east african  
forestry industry on local society*

Rene Gutschalk • Jari Thiele • Erhard Schender

**AFTER THE RAIN FALLS ...**  
**THE IMPACT OF THE EAST KALIMANTAN**  
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Juni Thamrin  
Endang Suhendar**

**AKATIGA**

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**The Impact of the East Kalimantan**  
**Forestry Industry on Tribal Society**

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**RG  
JT  
ES**

## SUMMARY

The exploitation and destruction of forests have reached such a critical level that the consequences have attracted the attention of the wider community. The resounding response, however, has been to highlight the problems of the environment rather than the humanitarian aspect of the elimination of the tribal and indigenous people who live in and around the forest. For generations, tribal and indigenous people have depended for their livelihood on the generosity of the forest but now, with the arrival of large capital which exploits the forest, their sovereignty over and access to forest resources have been stolen from them.

This phenomenon is intrinsically connected to forest management policies which emphasize efforts to obtain foreign exchange by exploiting economically valuable forest products and in particular timber. The large profits which can be reaped from the forestry sector, the increase in foreign exchange and the ability to absorb labor are the aspects put forward to legitimize large capital operations. The forest is seen as a natural resource which can be exploited to obtain surplus.

In terms of foreign exchange these policies have been successful. In 1994, for example, the forestry sector contributed US\$ 7.7 billion to foreign revenue. Conversely, this success has come at a high cost with the destruction of the forest ecosystem and the way of life of local communities. Ecologically, the destruction of the forest results in interference with the global ecosystem. In socio-cultural terms, a conflict of interests occurs between local culture and the forms of modern culture associated with forest industrialization. On the one hand, modernization sees local culture as an obstruction which must be “swept aside” or “replaced” so that the development process, meaning the acquisition of surplus from forest products, is not seriously disturbed by local tribal communities. On the other hand, the tribal and indigenous people see industrialization and all its values and apparatus as a threat to their customary rights over the forest.

In practice, the meeting of these interests both directly and indirectly places tribal and indigenous people in a marginal position and demands changes in the social-cultural order of society in accordance with modern interests and values (or the values of an industrial society). This leaves tribal and indigenous people under pressure from limited choices which encourage them to move further away from access to the natural resources which have remained under their control up till now. In spite of this, the local people have adopted a number of strategies by which to maintain and revitalize the indigenous values and cultural systems which they are certain can guarantee their survival and welfare as well as ensure ecological balance. Modern developmentalists who focus on growth and surplus find this view difficult to accept. The conflict of interests which emerges eventually becomes a burden which must be borne by the local indigenous people and which has widespread impacts leading to the destruction of their social, cultural, political and economic order. The phenomena just explained can be seen in the context of industrialization of the forestry sector in East Kalimantan.

East Kalimantan is an Indonesian province rich in forest resources. In addition to mining, the forestry sector and timber industry form the backbone of East Kalimantan's economy, contributing almost Rp 1.5 trillion to Gross Domestic Product. At the end of March, 1994, there were some 110 holders of logging concessions, covering a concession area of 12 million hectares, or around 55 per cent of all of East Kalimantan. Apart from functioning as an exploitable natural resource for the sake of economic growth, the forests of East Kalimantan are also the source of life and home to the Dayaks, the indigenous people of East Kalimantan. The Dayak community, particularly those people who live in the hinterland, are dependent on the resources of the forest. As a society which has close interaction with the forest, the Dayaks have, and continue to develop, a culture which is also closely tied to the forest and is reflected in their religion, art, politics, economy, technology and social organization. These interconnected institutions form the basic foundation of all activities in the life of the Dayaks, in their relationship with each other, with nature and with the supernatural powers in which they believe. Such is the closeness of Dayak culture with the forest that

the latter is seen as not only as a means to fulfill their economic needs but also as having socio-cultural and religious functions.

The practice of distributing forest concessions in the form of logging concessions, development licenses for timber estates, plantations, and transmigration areas has brought positive effects to the development of East Kalimantan, in terms of creating opportunities for employment, spurring on the development of the timber industry, raising domestic revenue and increasing national foreign exchange. However, this exploitation has had its negative effects which, apart from causing environmental destruction, also impact adversely on the social economy and culture of the Dayak society. Research results from the two villages studied are evidence of this.

In the two research villages, Lambing and Benung, there is evidence that forest exploitation has brought negative impacts to the local people, among them: a decline in sources of income, especially from the forest products which they have controlled up till now; a reduction in average size of land controlled; and a cultural shift that takes them constantly further from their own culture. These negative impacts contribute to the on-going marginalization of tribal people, which occurs because of their weak bargaining power in facing with concession holders who get full support from the government.

The outline of the situation given above shows clearly that the capitalistic development paradigm, which places greater importance on the creation of surplus without paying attention to the interests of local communities, has caused the emergence of conflicts and other serious impacts, especially for the local people themselves. In order to reduce these impacts and prevent open conflict in the future, several matters require attention, among them: forest resource management which must actively involve local people, including their involvement in the decision-making process; the legal guarantee of tribal people's rights over forest resources; and bearing in mind the weak position of these people, empowerment of tribal groups socially, economically, and politically. In this way, forest resource management will not only bring national benefits but will at the same time strengthen the position of tribal communities themselves.



## RINGKASAN

Eksplorasi dan kerusakan hutan telah sampai pada titik kritis, sehingga menarik perhatian berbagai kalangan. Akan tetapi, respons yang kemudian bergema lebih banyak menyoroti masalah lingkungan daripada masalah kemanusiaan yaitu tersingkirnya masyarakat asli (*indigenous people*) dan masyarakat adat (*tribal people*) yang tinggal di dalam dan sekitar hutan. Mereka yang telah turun-temurun tinggal dan menggantungkan kehidupannya pada hutan, sekarang, seiring dengan masuknya modal besar yang mengeksploitasi hutan, kedaulatan dan akses mereka terhadap sumber daya tersebut terampas.

Fenomena tersebut tidak dapat dilepaskan dari kebijakan pengelolaan hutan selama ini yang lebih menitikberatkan kepada upaya perolehan devisa negara melalui eksploitasi produk-produk hutan yang bernilai ekonomis, terutama kayu. Besarnya keuntungan yang bisa diraih diikuti dengan meningkatnya perolehan devisa dan daya serap tenaga kerja pada sektor kehutanan, semakin menguatkan legitimasi beroperasinya modal besar di sektor tersebut. Hutan dipandang sebagai sumber daya alam yang dapat diekstraksi untuk mendapatkan surplus.

Dilihat dari sisi perolehan devisa, kebijakan ini dapat dikatakan berhasil. Pada tahun 1994, misalnya, sektor ini memberikan sumbangan devisa sebesar US\$7,7 milyar. Akan tetapi, di lain pihak, keberhasilan tersebut harus dibayar mahal dengan rusaknya ekosistem hutan dan tatanan kehidupan masyarakat lokal. Secara ekologis rusaknya ekosistem hutan akan berakibat pada terganggunya ekosistem global. Kemudian secara sosial budaya, terjadi konflik kepentingan antara tatanan budaya lokal dan budaya modern yang melekat di konteks industrialisasi hutan. Di satu pihak, modernisasi melihat bahwa tatanan budaya lokal merupakan hambatan yang harus “dihilangkan” atau “diganti” agar proses pembangunan dalam arti pemupukan surplus dari hasil hutan tidak mendapat gangguan serius dari komunitas masyarakat adat. Sementara itu, di pihak lain, masyarakat asli/adat memandang

industrialisasi dengan segenap nilai dan aparatusnya sebagai ancaman bagi hak-hak adat mereka terhadap hutan.

Pada praktiknya, secara langsung maupun tidak langsung, pertemuan kepentingan-kepentingan ini menempatkan masyarakat adat/asli pada posisi marginal dan terjadi arus besar untuk mengganti tatanan sosial budaya masyarakat agar sesuai dengan kepentingan dan nilai-nilai modern (atau nilai-nilai masyarakat industri). Hal ini membuat masyarakat asli/adat terdesak dengan pilihan terbatas, dan pilihan yang terbatas itu semakin mendorong mereka menjauhi akses-akses sumber daya alam yang selama ini mereka kuasai. Di lain pihak, ada beberapa upaya dari masyarakat adat/asli untuk mempertahankan dan melakukan revitalisasi atas nilai dan sistem budaya leluhur mereka yang diyakini dapat menjamin kelangsungan dan kesejahteraan hidup serta menjamin keseimbangan ekologis. Pandangan ini sulit diterima oleh kerangka pembangunan modern yang bertumpu pada pertumbuhan dan pemupukan surplus. Konflik kepentingan tersebut pada akhirnya menjadi beban yang harus dipikul oleh masyarakat asli/adat yang berdampak luas terhadap rusaknya tatanan sosial, budaya, politik, dan ekonomi mereka. Fenomena yang diuraikan di atas dapat dilihat dalam konteks industrialisasi kehutanan di Kalimantan Timur.

Kalimantan Timur merupakan salah satu provinsi di Indonesia yang kaya dengan sumber daya hutan. Selain pertambangan, sektor kehutanan dan industri kayu merupakan tulang punggung perekonomian Kalimantan Timur dengan sumbangannya terhadap PDRB hampir Rp1,5 trilyun. Sampai akhir Maret 1994, terdapat sekitar 110 pengusaha pemegang HPH dengan luas konsesi hampir 12 juta hektare atau kira-kira 55% dari luas Provinsi Kalimantan Timur. Selain berfungsi sebagai sumber daya alam yang dapat dieksploitasi demi kemajuan ekonomi, hutan di Kalimantan Timur juga merupakan sumber kehidupan dan “rumah tinggal” bagi Suku Dayak sebagai penduduk asli Kalimantan Timur. Masyarakat Dayak, khususnya yang tinggal di daerah pedalaman, menggantungkan kehidupannya pada sumber-sumber daya hutan. Sebagai masyarakat yang erat interaksinya dengan hutan, masyarakat Dayak mempunyai dan mengembangkan pranata budaya yang juga erat terkait dengan hutan seperti yang tercermin dalam pranata keagamaan, kesenian, politik, ekonomi, teknologi, dan

organisasi sosial yang saling berkaitan. Pranata-pranata ini merupakan landasan utama bagi seluruh aktivitas kehidupan masyarakat Dayak dalam berhubungan dengan sesama mereka, dengan alam, termasuk juga dengan kekuatan-kekuatan supranatural yang mereka percayai. Demikian eratnya kaitan kebudayaan masyarakat Dayak dengan hutan, sampai-sampai hutan dipandang tidak hanya semata-mata memenuhi fungsi ekonomi tetapi juga mempunyai fungsi sosial budaya dan religius.

Praktik pemberian konsesi hutan dalam bentuk hak pengusahaan hutan (HPH), izin pembangunan Hutan Tanaman Industri (HTI), pembukaan perkebunan, kawasan transmigrasi, dan lain-lain, di satu sisi telah memberikan nilai positif bagi perkembangan Kalimantan Timur seperti menciptakan lapangan kerja, memacu perkembangan industri perkayuan, meningkatkan PDRB serta devisa negara. Akan tetapi, pada sisi lain, eksploitasi tersebut selain merusak kelestarian lingkungan, menimbulkan berbagai dampak sosial-ekonomi dan budaya yang cukup serius bagi masyarakat asli/lokal yaitu masyarakat Dayak. Hasil penelitian di dua desa kasus menunjukkan hal tersebut.

Kedua desa kasus yang diteliti yaitu Desa Lambing dan Benung menunjukkan bahwa eksploitasi hutan yang selama ini dilakukan telah memberikan dampak negatif terhadap masyarakat lokal, di antaranya: menurunnya sumber pendapatan masyarakat terutama dari hasil-hasil hutan yang selama ini mereka kuasai; mengecilnya rata-rata luas penguasaan ladang; dan terjadinya pergeseran budaya yang semakin menjauhkan mereka dari budaya mereka sendiri. Dampak negatif tersebut semakin memosisikan masyarakat adat ke posisi yang marginal karena lemahnya daya tawar mereka terhadap pemegang konsesi yang mendapat dukungan sepenuhnya dari pemerintah.

Uraian di atas memberikan gambaran yang jelas bahwa ternyata paradigma pembangunan kapitalistik yang lebih menekankan pemupukan surplus tanpa memperhatikan kepentingan masyarakat lokal telah menimbulkan konflik dan dampak yang serius, terutama bagi masyarakat lokal itu sendiri. Untuk mengurangi dampak dan menghindari konflik terbuka di masa yang akan datang, beberapa hal berikut perlu mendapatkan penekanan: pengelolaan sumber daya hutan

perlu melibatkan masyarakat lokal secara aktif, termasuk dalam proses pengambilan keputusan; perlunya jaminan kepastian hukum tentang hak-hak masyarakat adat atas sumber daya hutan; mengingat lemahnya posisi masyarakat adat, upaya penguatan kelompok-kelompok masyarakat adat baik secara sosial, ekonomi, maupun politik menjadi suatu hal yang penting untuk dilakukan. Dengan demikian, pengelolaan sumber daya hutan tidak saja menguntungkan secara nasional tetapi pada saat bersamaan memperkuat posisi masyarakat adat itu sendiri.

## FOREWORD

One of the national development policies adopted by Indonesia's New Order government (1966-1998) to increase foreign exchange revenue was the sale of timber in the form of logs obtained from logging concessions (HPH) granted by the Department of Forestry. These concessions were largely concentrated in regions that were still well endowed with forested land.

The choice of East Kalimantan as the location of the present study is appropriate, for this province is among those classified as rich in primary forests. This province is also the home of the Dayak people, in particular the Benuaq Dayak, who are the focus of the study. The Benuaq Dayak have since ancient times lived from agriculture in the form of shifting cultivation and from forest products. With a wide territory at their disposal and a relatively small population, they enjoyed the opportunity to open up new land while at the same time recultivating fields that they had previously abandoned. In terms of preservation of a balance between natural resources and population density in that area, this practice, which had been passed down from generation to generation and had become an essential part of their very existence, was the most efficient form of land use.

With the arrival of local and foreign investors who had obtained forestry concessions extending over millions of hectares, the local people came under pressure, for they were forbidden even to live, let alone open new fields, within the areas known as HPH concessions. From that time onwards tensions between investors and the Dayak people could not be avoided; in fact, they have actually increased from year to year.

In looking at these facts, we can draw the conclusion that agrarian problems have arisen because the Dayak people believe that the government, in this case the Department of Forestry as the agency responsible for granting logging concessions, has grabbed the land that they have long held under customary law. Forest exploitation,

undertaken extensively and rapidly by investors using machinery, has so steadily reduced the sources of livelihood of the Dayak people that it is easy to understand why they have opposed concession holders, especially since they have never been invited to play any part at all in logging activities.

The mistake of the government at both central and provincial levels, it would seem, can be traced back to the time when it adopted the view that the forested land which was to be given as logging concessions was state land. This was the same as denying customary laws and traditions that had existed for hundreds of years. It is this that forms the essence of the agrarian issues that have arisen in the logging areas of East Kalimantan and in other Indonesian provinces that are rich in forests, like Riau, Jambi, Aceh, South Sumatra, Irian Jaya and Maluku.

Another aspect that is examined by the three researchers in this study is the entry of capitalism into traditional communities. They have considered the influence not only of capital as such but also of modern technology that is not well disposed to human labour. Through the present study, which is of an ethnological nature, they have endeavoured to answer a major question, namely, where does the potential lie for conflict between modernisation and development theories and the traditional community? More briefly, in which corner does modernisation place custom and tradition?

The present study seeks to find an alternative answer to the modernisation-tradition relationship model that involves the “dominating power” of the strong over the weak. It is this antithesis that makes the findings of the study very interesting reading not only for those who are interested in theory but also for those who are involved in practical activities in the field.

Bandung, March 1999

Prof. Dr. Sediono M. P. Tjondronegoro  
Chairman of the Management Board  
AKATIGA Social Analysis Centre

# CONTENTS

SUMMARY _____	vii
RINGKASAN _____	xi
FOREWORD _____	xv
CONTENTS _____	xvii

## INTRODUCTION

The Concept of Development _____	1
Research Aims _____	10
Methodology _____	11

## PART ONE

FOREST MANAGEMENT AND SOCIAL CONDITIONS IN EAST KALIMANTAN: CONSERVATION VERSUS EXPLOITATION _____	15
The Dynamics of Forest Control _____	17
Population Dynamics in East Kalimantan _____	22
The Main Resources of the Indigenous People _____	27
The History of Forest Control and Exploitation _____	32
Acknowledgment of Community Rights Over Forest Management _____	49

## PART TWO

THE BENUAQ PEOPLE IN THE CONTEXT OF CHANGE: CULTURE AND ENVIRONMENT _____	63
Ethnography of the Benuaq People _____	66
Identification _____	66
Religion _____	68
<i>Lai Tana</i> : An Integrated View of Space and Resources _____	72
Social Organization _____	79

The Cultivation System _____	86
<i>Umaq</i> : The Dynamics of Food Production _____	94
Preparation of Dry Fields _____	101
A General Picture of the Research Villages _____	106
Population Structure _____	108
Agrarian Structure _____	114
Outside Interventions _____	118
The Local Economy _____	119

### **PART THREE**

THE IMPACT OF THE FORESTRY INDUSTRY ON THE LOCAL COMMUNITY _____	131
Disputes over Land _____	131
Declining Access to Forest Products _____	137
The Declining Size of Controlled Land _____	143
The Work Force _____	146
Socio-cultural Change _____	151
SOME FINAL NOTES _____	157
BIBLIOGRAPHY _____	163



## INTRODUCTION

### **The Concept of Development**

The major questions that always emerge in any debate over the position of local communities and expansion in the forestry industry concern the lack of recognition of the rights of indigenous and tribal people, the overlapping of the uses to which forested land is put (the interests of capital accumulation, environmental conservation or community welfare) and the mode of production adopted in handling forest resources. The whole debate then turns to values: can the forestry industry through the mechanism by which concession rights are granted to large companies, which are regarded as the only means of development, raise the quality of life for tribal people, or is it the other way around?

These issues can be expressed more forcefully if accompanied by a statement of the level of destruction of the forest and its ecology as a result of excessive exploitation, that is, exploitation which is considered to have exceeded the limits of forest regenerative capacity to the point where signs of a critical state within the environment are increasingly obvious. World attention to the problem of forest destruction is often so excessive that much of the discussion and debate overlooks the interests and even the existence of local communities living in and around the forest as well as the need to improve their quality of life. These are tribal and/or indigenous people<sup>1</sup> who, in many cases, have become strangers in their own forests.

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<sup>1</sup> We have chosen to use the terms tribal people and/or indigenous people to refer to social groups such as the Dayak, Baduy, Toraja, Mentawai, Asmat and Sasak communities, rather than to use such terms as traditional, isolated, primitive or backward communities, all of which imply certain values and assumptions. ILO Convention 169 formulates tribal people as *those who live in free countries where*

The debate tends to concentrate on general environmental problems and is dominated by issues with a macro dimension, such as efforts to save the earth's ecosystem, the thinning of the ozone layer, the rise in world temperature, the changing global climate and loss of biodiversity. Those concerned about environmental problems very largely believe that if these problems could be overcome, the problems faced by tribal people in their relationships with those who control forested land would automatically be solved too. The enthusiasm of movements to defend the environment is greater than enthusiasm to respect and give recognition to tribal and indigenous people. This phenomenon can be clearly seen in cases experienced by Aborigines in Australia, the Amungme in Irian Jaya, the American Indians and the Dayak of Kalimantan.

In the international arena the debate over forestry problems and the existence of tribal people cannot be separated from the macro political and economic context. Wood products from tropical forests such as those in Indonesia have high economic value and demand for these products continues to increase. Timber reserves in non-tropical zones, where most of the world's developed countries are to be found, are very limited in area and are strictly protected to ensure their survival. Not infrequently community movements in these countries also exert pressure to conserve their own forest reserves. As a consequence, these countries turn to developing countries to meet their need for wood. One country to which they turn is Indonesia, which has some 60 per cent of South-east Asia's forested land. According to official records, the area covered by forest represents almost 75 per cent of Indonesia's total land area.<sup>2</sup>

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*social, cultural and economic conditions differentiate them from other parts of society in that country, and whose status is regulated in whole or in part by customary laws and traditions of the tribal society or by special laws and regulations (Article 1 paragraph 1a). Indigenous societies are described as societies in free countries that are regarded as consisting of the original people of an area by reason of their line of descent among other inhabitants, who lived in a country, or in a geographical region within which a country is situated, at the time when subjugation or colonization occurred or when national boundaries were relocated, without any consideration of their legal status, and who still possess a part or all of their social, economic, cultural and political institutions (Article 1 paragraph 1b).*

<sup>2</sup> Indonesia possesses the largest tropical forests in the world after Brazil and Zaire.

Development in developing countries like Indonesia obviously requires funding. While funding can be obtained from various sources, one source that is relatively available is foreign loans. In order to pay back their loans, developing countries must increase exports. One means of doing this quickly is through the exploitation of natural resources, among them oil and gas as well as forest products. The exploitation of natural resources thus forms a government policy whose implementation is very largely undertaken on a large scale by private organizations.<sup>3</sup> But exploitation is often carried out without any consideration of the natural regenerative capacity of the forest. Added to this is the weak, or deliberately weakened, control exerted by society.

The present situation in Indonesia is that the forest has faced, and is still facing, destructive pressures from a number of factors. These pressures, which come from various powers at the local, national and international levels, have complex, interrelated impacts. Smith (1992) puts forward seven factors that constitute sources of forest destruction in Indonesia: (1) commercial logging, both legal and illegal; (2) mining, carried out by both small-scale miners using traditional technology and large-scale mining companies using sophisticated technology; (3) transmigration, including the resettlement of local forest dwellers and settlements based on sedentary farming methods; (4) plantations and timber estates; (5) shifting cultivation; (6) the exploitation of non-timber forest products; and (7) certain large infrastructure development projects, most of which are funded by the World Bank and include the tourism sector.

To a certain extent the political and economic policies of the developed countries have created international pressures which require a domestic response in developing nations. The former can exchange economic assistance and technology for the high-value raw materials and natural resources found in developing countries. What emerges is the phenomenon of developed countries “selling” finished goods and

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<sup>3</sup> The expansion in logging through Forestry Concession Rights can be seen from official data in the Sixth Five Year Plan (1994/95-1998/99), which reveals that in 1993 management rights over approximately 61.4 million hectares of production forest (both free and limited production forest) were given to 579 companies. These 579 logging concessions are combined in various enterprise groups, forming 25 large groups whose shares are controlled by 25 individuals (Triawan, 1995).

technology while the developing countries sell raw materials and basic commodities.<sup>4</sup> Meanwhile, the balance of power, both political and economic, between developed and developing countries is unequal; developed countries have more power and can “force” developing countries to open up and exchange their resources.<sup>5</sup> As a result of this pressure, forestry policy in developing countries tends to put aside the question of conservation because the short-term need to acquire foreign exchange (for the sake of “development”) is given top priority over long-term interests such as global environmental issues and the rights of local communities. The economic contribution made by forests thus becomes the basis for legitimizing political and economic policies relating to their exploitation.

In the above context, the problems faced by tribal communities living in and around the forest become extremely important. Indeed, they are connected with basic human rights and local wisdom in managing and preserving the forest environment. The tribal and indigenous people, who for generations have lived and depended for their whole livelihood upon the generosity of the forest, have been virtually pushed aside by the intervention of capital and in particular by industrialization of the forest. Much of their sovereignty over and access to forest resources has been seized and uprooted from its socio-cultural origins (Djuweng *et al.*, 1993a; Walhi, 1992; Hong, 1987).

The entry of large capital into the forestry industry, which sought timber as its main product and which in the beginning was invited and facilitated by the state, brought with it changes and “new” values whose features were determined more by market strengths and money than concern for tribal people. Each industrial activity brought several forms of change to local communities in its vicinity, including among other

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<sup>4</sup> This exchange concept is known as the international division of labor. Put very simply, the concept divides the world into agrarian countries and industrial countries. The former, generally developing countries which are often referred to as the South, have the “task” of providing raw materials for the industrial needs of the second group of countries, the so-called developed countries.

<sup>5</sup> The *modus operandi* commonly adopted includes bilateral cooperation, technical aid, project assistance, foreign loans and industry relocation. In exchange, the donor countries obtain various concessions for natural resource enterprises in certain areas.

things: (1) the opening up of isolated tribal villages, (2) the introduction of various new economic activities on top of a long-established subsistence system, (3) dependence on various outside products and industrial goods, (4) the creation of interaction directed at displaying the use of new instruments which were still relatively foreign to tribal people like television, the parabola, films, volley ball and billiards, (5) the establishment of certain educational facilities, (6) the introduction of new patterns of sedentary agriculture, (7) changes in the orientation and understanding of traditional values, (8) changes in social institutions, where part of the function of customary law was replaced by new institutions, (9) a breaking down of traditional ties, (10) the occurrence of various violations of customary law, (11) the emergence of localized prostitution in many places, (12) increased disputes over control of land between tribal people and the managers of companies holding forest management rights, (13) exacerbation of social differentiation and (14) the loss of useful local knowledge such as knowledge of traditional medicine, survival in the forest and traditional boat-making as well as the general erosion of traditional wisdom.<sup>6</sup> The advantages and disadvantages of the changes experienced by tribal communities are still the subject of lengthy debate, yet the irony of this debate is that only rarely are the views of the tribal communities themselves directly included.

In the national economic order the large profits which can be obtained from the forestry sector by delegating logging concessions to the owners of large capital, followed by increased contributions to foreign exchange as well as the creation of jobs, add strength to the legitimization of the existence and operation of capital in the forestry sector. Economic growth thus becomes the main argument for opening up opportunities for large capital to do business in this sector. Yet according to the Minister for Forestry, up to 1997 approximately 30 per cent of logging concession holders had not used the rights entrusted to them (*Kompas*, 12 June 1997). In general, these concession holders are persons who have a close relationship with policy-makers. One consequence is that not a few of them have made use of their logging concession only to

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<sup>6</sup> For comparison, see Marzali (1995), Abdulrahman and Wentzel (1997) and Indiwara and Kholison (1997).

obtain bank credit. Several among them have later had their concession rights withdrawn by the government.

The whole of the above strategy is carried out in the name of development and in theory is directed towards the welfare of the people. Basically, the forest is seen as a natural resource from which forest products of high economic value can be extracted to obtain an immediate surplus. The problem that emerges as a consequence of choice of this strategy is an uncontrolled forest exploitation process which threatens the whole balance of the forest ecosystem. It is difficult to supervise and monitor the exploitation of forest resources because, among other things, the scope of the related technical department is limited;<sup>7</sup> furthermore, extensive participation by the community in supervision of forest exploitation is not included in the broad framework of forest management. Tribal and indigenous people then experience exclusion from or limited access to the forest resources which have always been a part of the cosmology of their lives. The disturbance of the natural balance and destruction of the people's social and cultural institutions contributes to general ecological disruption. Destruction of the forest ecosystem will ultimately result in disruption of the global ecosystem and eventually disturb life on earth.

The conflict of interests between the local cultural order<sup>8</sup> and modernization in the form of capital penetration by the forestry industry over the last two decades is becoming more visible. In Sintang, West Kalimantan, and in Jelmusibak Bentian, East Kalimantan, for example, several logging company base camps have been burnt by local communities because the forestry companies ignored customary law regulations. Other forms of conflict in the field have likewise become more open over the past few years.

In this instance, the "actors" of modernization, who are mainly forestry concession holders and the state, work on the assumption that local

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<sup>7</sup> In many formal meetings the limitations of the Forestry Department in terms of supervision of forestry companies have been acknowledged, the causes being, among others, limited funding, facilities and human resources.

<sup>8</sup> The culture of tribal and indigenous people is sometimes viewed as "traditional"; however, this description is often felt to be inaccurate.

cultural order is an obstacle to progress and in particular a hindrance to the harvesting of a surplus from forest products. As a follow-up to this assumption, they believe that there are no longer any tribal people in existence. The debate over the existence of tribal people in the eyes of the government has been going on for a long time. In fact, the East Kalimantan provincial government once stated openly that there are no longer any tribal people in this province (Abdulrachman and Wentzel, 1997). The presence of tribal people is often seen as a “nuisance” in the context of acceleration of the development process.

Meanwhile, the tribal people regard the forestry industry with all its supposed logic and apparatus as the source of interventions that caused the loss of their traditional rights and as the reason for the social disintegration of their customary ties. A Belgian researcher, Mill Rokaerts (1985) cited in Djuweng *et al.* (1993b), states that development and industrialization of the forest in Kalimantan have threatened the survival of the Dayak people and entrapped them in modernization. The problem that has arisen is the clash with the interests and culture of tribal people who have neither instruments and mechanisms that are fair and neutral nor the authority to find a way out or to “settle” this structural conflict.

In order to gain an understanding of the conflict between tribal and indigenous people and modernization, we can look at how the assumptions of modernization regard these people. According to Fakhri (n.d.), in order to comprehend this conflict an understanding of the paradigm used by modernization is required because this paradigm has exerted great influence on the theory and analysis of policy and decision-making. Referring to Habermas (1972), Fakhri then finds that one of the dominant paradigms in social studies is that of positivism<sup>9</sup> which is expressed in various theories of modernization and development.

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<sup>9</sup> Positivism contains basic values taken from scientific traditions which place the studied phenomenon as an object which can be controlled, manipulated and generalized, so that future tendencies can be formulated. Social sciences which follow this understanding must use scientific methods that are objective and value-free. In other words, positivism requires the separation of facts and values in the attempt to aim for an objective understanding of social reality.

Modernization as the foundation of development, although giving birth to many generations of theory, in general is certain about one thing, namely, that it is the human factor which forms the main focus of attention. By analogy this view represents growth (especially social growth) as occurring linearly. Supporters of this theory regard growth as an evolutionary process from the traditional to the modern. Traditional attitudes are considered a problem which must be reduced and replaced with modern attitudes and rational actions. Traditional views, attitudes and behavior are considered to block or obstruct the modernization process. The failure of a nation to progress is seen as traceable to an internal weakness within the nation itself, which among other things is considered to lack the motivation to develop.<sup>10</sup> Since this notion of developmentalism idealizes one mode of achieving modernization via the capitalist system, development must therefore be based on continuous economic growth.

From the above discussion, the question emerges of where the potential for conflict between modernization and development theory and tribal and indigenous people really lies. In other words, how and where does modernization place customary law and tradition? Modernization assumes that society revolts from the traditional towards the modern. From this assumption it can be seen that traditionalism forms an obstacle that must be removed. So the relationship between modernization and custom or tradition basically represents a relationship which places tradition as an “object” to be subjugated and fundamentally transformed into something modern. Hence all institutions, value systems, knowledge and technology as well as the logic of local communities must conform to the logic of modernization. By using the Foucault model of power and knowledge, which states that even knowledge has a power dimension, Fakih (n.d.) then sees that even the relationship between modernization and tradition exists in the dominant power dimension. A number of conflicts with tribal and indigenous people have been resolved by domination and the above-mentioned subjugation. Every attempt made by tribal and indigenous people to defend their rights is branded as a form of opposition and

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<sup>10</sup> For more information on this matter, see the concept of *Need for Achievement* or the virus *N-Ach* put forward by David McClelland (n.d.).



rebellion against development and various terms such as forest cutters, shifting cultivators and isolated communities are applied to them, an attitude that eventually places these people in a peripheral and marginal position. These terms then become the basis for the moral legitimization of efforts to encourage them to abandon their backwardness in ways proposed by the supporters of modernization. Usually the latter point to the successes of industrial countries in the west. This places the pressure of limited choices on tribal and indigenous people, the consequence being that they are pushed further away from access to the natural resources that they have hitherto controlled.

At the same time, tribal and indigenous people endeavor to maintain and revitalize their ancestral values and cultural systems, which they are convinced can guarantee continuity and welfare in their lives. These views and convictions are extremely difficult to accept in the context of modern development thinking, which is founded on growth and the acquisition of surplus. Modernization regards customary law more as a type of art which is presented on certain ceremonial occasions. It is not seen as a total and independent social system which has its own set of paradigms, approaches and mechanisms in organizing relations among the people themselves and relations with natural resources. The conflict of interests ultimately becomes a burden which has to be borne by tribal and indigenous people and which has widespread effects of a destructive nature on their social, cultural, political and economic order.

The phenomenon described above can be observed in the context of the forestry industry in East Kalimantan, which is one of Indonesia's richest provinces as far as forest resources are concerned. The forest, apart from being a natural resource, also forms the source of livelihood and the "home" of the Dayak people, who are the original inhabitants of East Kalimantan. The Dayaks, especially those who live in the interior, depend upon forest resources for their livelihood. As a society that has close interaction with the forest, the Dayak people have developed and still possess cultural institutions which are closely related to the forest. This close relationship is reflected in their social organization and in their religious, artistic, economic, political and technological institutions, all of which are interlinked. These institutions form the main foundation for all of the activities of the Dayak people's lives in

their relations with their peers and with nature, including the supernatural forces in which they believe. So close are the ties of Dayak cultural life with the forest that the forest is seen as fulfilling not only an economic but also a socio-cultural and religious function. The complexity of this function is reflected in various legends, values and views and in the everyday way of life of the Dayak people.

In its relationship with the Dayaks and their forest culture, modernization, which is manifest in policies concerning the forestry industry, greatly influences the Dayak people's room to move. Cases of violations of customary lands and forest clearing for various purposes, such as logging concessions, plantations, mining, transmigration, resettlement and monopolies in non-timber forest products like swallow's nests, along with other limitations on the people's access to forest resources, all constitute a picture of the conflict and the transition process that is taking place in East Kalimantan.

### **Research Aims**

The purpose of the present research is to study the impacts caused by the "meeting" of two cultural systems, namely, the indigenous or local Dayak culture and the modern or industrial culture. Academically, this research endeavors to enrich the wealth of knowledge about the adaptation of indigenous culture in the midst of modernization. Empirically, it is hoped that the research will reflect the current situation and contribute to efforts to strengthen the position of indigenous culture.

It is hoped that the results of the research can be communicated through dialogue with those involved in the industrialization process in East Kalimantan. Another goal which hopefully will be achieved is an increase in understanding and knowledge of the relationship between industrialization and the socio-cultural transformation of the Dayak people and of impacts which result from this process.

This study will look at the impact of industrialization in the forestry sector on the Dayak people, in this case the Benuaq Dayaks, particularly

in relation to the dynamics of power relations, ownership and management of forest resources, the production patterns of the indigenous and local people, and the response of the latter to various employment “opportunities” which have arisen as a result of the forestry industry.

### **Methodology**

This research was carried out among the Benuaq Dayak people, hereafter referred to as the Benuaq, who form the largest Dayak subgroup in East Kalimantan. The Benuaq, who are spread over more than 60 villages in nine subdistricts in the District of Kutai and number around 26,000 people.<sup>11</sup> They still practice a dry-field agricultural system and utilize natural resources such as forests, rivers and other life-supporting resources. The Benuaq who were studied in the present research are those who live in the village of Lambing in the Muara Lawa subdistrict and those who live in the village of Benung in the Damai subdistrict.

The village of Lambing is the capital of Muara Lawa subdistrict and so is one of the busiest villages in Muara Lawa. In addition to government offices, both civil and military, it has schools from primary to senior high level, as well as shops which can be considered large for a place the size of Lambing. Lambing is located at the mouth of the Lawa River, a tributary of the Kedang Pahu<sup>12</sup>, at a distance of around 400 km from Samarinda. Lambing forms the last transit point and “harbor” for ships on the Samarinda-Damai route when water level is low.<sup>13</sup> Apart from the Benuaq people, who form the majority of the total population, other small social groups also live in Lambing such as the Tunjung Dayak,

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<sup>11</sup> In terms of population numbers and distribution, the Benuaq community holds first position and is followed by the Tonyooy or Tunjung community and the Kenyah community.

<sup>12</sup> The Kedang Pahu River is a tributary of the Mahakam. The location of villages at river mouths is the way in which the Dayak obtain maximum access to river and overland transportation (Whittier, 1994).

<sup>13</sup> According to development plans for Kutai District, Lambing is to become a future governmental and commercial center.

Bugis people, Javanese and people from Lombok. The Bugis and Javanese generally work as traders. Approximately two km along the Kedang Pahu river route from Lambing to Damai, that is, in the Benggeris area, there is a log pond which accommodates logs produced by PT Kld.

In Lambing, as in other upstream Mahakam villages, apart from formal leaders (the village heads) there are also customary law leaders who are appointed on the basis of a letter of decree from the head (*bupati*) of Kutai District. In this village the long house, which is the identifying mark of the presence of a Benuaq customary law community, is located approximately two km by road towards Lake Tolan. This traditional house, which is known as *Lamin Tolan*, is the oldest long house still inhabited, although the majority of its inhabitants now live in individual houses in Lambing. This *lamin* is still used as a ceremonial place and for customary law meetings.

The village of Lambing was chosen in the present study to illustrate the process of change that followed increased opening-up of the area stemming from the arrival of migrants and, what is more important, from the entry of various companies, especially timber and mining undertakings, which have sought to exploit the region's natural resources.

The second study area is Benung, a village approximately 25 to 35 km overland from Lambing towards Melak. Benung, which is one of 19 villages in the Damai subdistrict, is located in the Idaatn Dayaq region, that is, the region of the Idaatn River, which is one of the tributaries of the upstream part of the Kedang Pahu River. A Benuaq village also, it is one of the oldest in the Idaatn River region and has the oldest and largest long house still standing, known as *Lou Benung*. The village is located inland in an area relatively far from a navigable river; however, it is surrounded by old logging roads, some of which have been incorporated into the Trans-Kalimantan road. If a person wishes to reach the area, the Samarinda-Long Bagun shipping route is normally taken as far as Melak. From Melak the journey is continued along an overland route via a number of villages like Keay, Sekolaq, Joleq and Jengan Danum until Benung is finally reached.

The Idaatn area, which constitutes the region of the Benung customary forest, is the operational area of the PT Tr Dn logging company, which has been working here since 1989. However, because it was found that the area lacked potential for commercial timber, logging activities stopped. Nevertheless, the area is still considered an operational area for the logging activities of this company and there are plans for the area to become a timber estate.

The village of Benung was chosen for research purposes to provide a comparison with Lambing in terms of indigenous values and the “original” culture of resource management among the Benuaq people.

Data and information were obtained by using the ethnographic approach combined with Participatory Rural Appraisal methods in the field, but prior to this an examination was made of secondary sources found among NGOs, logging concessions, higher education institutions and sectoral departments and agencies. Sources of primary data, apart from information obtained directly from the Benuaq people and their leaders during in-depth interviews, were obtained by the “snowball” method and included local government circles at levels I and II and other related agencies, experts and observers of forestry problems and of the Dayak people, private and non- government institutions that are active in or have become observers of forestry matters and the Dayak people, as well as informants and Dayak people in Samarinda. Written secondary sources were used as back-up materials. These take the form of local government policies, seminar materials, the reports and findings of research carried out by various parties and researchers from government and bureaucratic institutions, higher education institutions, NGOs and other groups, both Indonesian and otherwise. In addition, a comparative study was carried out that involved visiting a number of Iban (Dayak) communities in Sarawak who work as partners with certain NGOs in the towns of Miri and Kuching in Sarawak.

The collection of primary data and information was done by interviewing persons directly in the field in conjunction with participatory observation. The information that was obtained was directed by a set of guidelines for open interviews. The field study was done entirely within one and a half months. In carrying out the field

work, researchers from AKATIGA were helped by a field assistant who happened to be a Samarinda NGO activist involved in forestry matters, the environment and the strengthening of tribal people.

The present study seeks to illustrate the forestry industry process and its impact on the Benuaq people of East Kalimantan. In structure the report is arranged in the following sequence:

The first part describes the general issues and debate surrounding the forestry question and the position of tribal people in Indonesia, the purpose being to introduce the reader to the macro situation of the phenomenon of power, management and utilization of forests in Indonesia and, more particularly, in East Kalimantan.

The second part provides a picture of the position of forestry and development in East Kalimantan and an explanation of the way of life or ethnography of the Benuaq people. This includes a description of the identification and distribution of the Benuaq people, their belief system and views of the environment (specifically forest and land), patterns of power over and ownership of resources and the local leadership system, as well as social organization. This part also provides an explanation of forest and land resource management and the dynamics of the people's relationships with resources, in particular, the dry-field cultivation system and utilization of forest products. This illustration of local production patterns is related to aspects analyzed in the first part such as the religious system, the dynamics of the man-resource relationship, spatial concepts and patterns of ownership and control over resources.

The third part describes the impact of the forestry industry, whose presence is manifest in the granting of logging concessions, on the way of life and culture of the Dayak people. This part illustrates the dynamics of relations and forms of conflicts of interests relating to resources, in particular forest and land. The conclusion offers a number of notes as an agenda of future issues.

# **PART** *One*

## **FOREST MANAGEMENT AND SOCIAL CONDITIONS IN EAST KALIMANTAN**

### **Conservation Versus Exploitation**

All attempts to understand the importance of the role of the forest ecosystem take us back to the fundamental ecological axiom which states that all the elements in the environment are interconnected.<sup>14</sup> The forest is not just a collection of flora and fauna. It is one of the basic ecosystems that play a major role in preserving the balance of the world ecosystem. It absorbs, stores and releases water and acts as the lungs of the world, drawing in carbon dioxide and exhaling oxygen. The forest guards and protects the earth from erosion by water and pounding winds. It provides food, medicine, firewood and building materials and, even more than that, it gives life to all human beings on the face of this earth. In short, the unlimited functions and uses of the forest are invaluable in the maintenance of human life.

Unfortunately, these functions and uses are now under threat. The destruction of tropical rain forest, which is often followed by the extinction of a number of species, is taking place rapidly, with the loss

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<sup>14</sup> Soemarwoto (1987) defines ecology as the study or science of the reciprocal relationship between living creatures and their environment. The term "ecology", which was first used by Haeckel, a biologist, in the mid 1860s, is derived from the Greek word *oikos*, which means house, and *logos*, which means science. Thus "ecology" is literally the science of living creatures in their homes, or the science of the households of living creatures.

of species increasing from approximately ten per cent per year in 1900 to thousands per year at the present time. One somewhat speculative projection estimates the rate of world rain forest degradation at 40 hectares per minute (Smith, 1992). It has been estimated that at this rate the forest will have disappeared by the year 2000 or soon after.<sup>15</sup> The ecological argument for preservation is based on the biological complexity of the primary rain forest, which cannot be replaced by reforestation of any kind. The rain forest constitutes a rich, unique and irreplaceable ecosystem, which plays a major role in determining the global climate and ecosystem of the future and which holds assets that we have not yet fully realized.

In the context of development activities, the World Bank has estimated that deforestation and denudation in Indonesia took place at an increasing rate of between 700,000 and 1,200,000 hectares per year during the Sixth Five Year Plan. These estimates state that 250,000 hectares of forest are destroyed every year due to random and excessive logging, while another 750,000 hectares are destroyed as the result of fires, development projects and forest conversion for agriculture and human settlements.<sup>16</sup> Although these figures illustrate the scale of the problem, they explain only a small part of the process and consequences of various forest utilization practices. The findings of other studies indicate that the rapid changes now occurring in the Indonesian forest ecosystem are also sometimes due to progress in human activity and to

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<sup>15</sup> Tropical rain forests cover around seven per cent of the earth's surface and are generally located between the Tropics of Cancer and Capricorn. In general, a rain forest ecosystem is characterized by (1) constant greenness of at least a part of the forest; (2) limited seasons, which in terms of temperature and rainfall consist of only two, the dry and the wet; (3) biological and ecological complexity with high biodiversity; and (4) greater ability to adapt to biological competition than to large-scale environmental destruction.

<sup>16</sup> There are other sources such as Dick (1991), who quotes 623,000 hectares, and the Transmigration Advisory Group (Ministry of Transmigration, 1991), which gives a figure of 1.315 million hectares. Quite apart from the accuracy of these figures, which reflect differences in measurement methods, forest destruction in Indonesia is a serious problem faced by all, including the government, NGOs, and tribal and indigenous people. There have been as yet no systematic, overall steps to reduce the rate of forest destruction. The efforts that have been made have been *ad hoc* and sectoral in nature or else have consisted of superficial local rehabilitation activities.



natural causes. Certain human activities can impact differently on the forest: they can lead to regeneration and the continuity of forest life or they can lead to its destruction. The events and agents that cause the destruction of forested land in Indonesia are, however, often not properly understood.

### **The Dynamics of Forest Control**

In East Kalimantan, as in certain other regions, it would seem that the high rate at which logging rights have been granted to concessionaires has been followed by a relatively high level of forest destruction, which has in turn led to problems of lost or reduced access to and community control over land, especially for tribal people (Abdulrachman and Wentzel, 1997). Almost 82 per cent of East Kalimantan, which, with an area of 211,440 sq.km, is Indonesia's largest province after Irian Jaya, has been declared to be state forest; in fact, several large towns like Tenggarong, Samarinda and Balikpapan are actually included within state forests. The problem that always emerges as a consequence is the right of tribal and local communities to claim certain places as the boundaries of their customary lands. In today's context and conditions these are not given formal recognition and the point has been reached at which local people experience fairly serious pressures. Even the administrative boundaries for land control between sectors within the existing governmental system are still unclear. For example, the East Kalimantan Provincial Office for Agriculture, the East Kalimantan Agrarian Affairs Agency and the Provincial Forestry Office all have their own claims over the extent of their respective territories, and so several areas are still under "administrative dispute" between sectors.

The exploitation of East Kalimantan's forests began in 1939, when five companies felling timber on a scale large enough for export were recorded (Walhi, 1992). By 1983 there were 110 companies holding logging concessions to an area of 11,679,540 hectares of "leased" production forest, according to the calculations of the Agreed Forest Utilisation or TGHK zones. In 1996 there were 70 active holders of logging concessions on 9,683,000 hectares of production forest, according to Spatial Planning for Provincial Land (RTRWP) records.

Yet while the extent of the land acquired by concession holders posed a clear threat to the existence of tribal communities, in macro terms only 17 per cent of the profits of the concessions went into state revenue, while the remaining 83 per cent was enjoyed by the forestry entrepreneurs themselves (Mubarik, 1992).

*The following arguments can be put forward for the protection and conservation of tropical rain forests:*

- *Tropical rain forests are the earth's genetic banks and the sources of varied species and biodiversity. It has been estimated that tropical rain forests generate 50 to 90 per cent of all the earth's flora and fauna. Genetic and species conservation is required for the process of evolution and the reproduction of species. This wealth is rare both qualitatively and quantitatively in any ecological zone. Of all the resources that can be found in tropical rain forests, no more than 15 per cent have been identified and given names. According to the US National Academy of Science, every four squares miles of tropical rain forest contains up to 1500 species of flowering plants, 750 species of trees, 125 species of mammals, 400 species of birds, 100 species of reptiles, 60 species of amphibians and 150 species of butterflies. However, although there is high biodiversity, the World Bank estimates that much of the land under tropical rain forest is infertile. It has been estimated that only 10 per cent of tropical rain forest grows on fertile soils. The wealth and complexity of primary rain forests are the result of a long and relatively uninterrupted process of biodevelopment-development. The wealth is located in the biodiversity of the plants, animals and micro organisms contained within forests. If tropical rain forests are cleared for agriculture, the potential sustainability of the converted land is extremely limited as the soil is unable to support intensive farming. Once land has been cleared, the level of fertility cannot be maintained for very long. It would seem that shifting cultivation involving rotation in land use is the answer to these poor soil conditions.*
- *Tropical rain forests are food storehouses. Various kinds of food originate from these forests, such as fruits, perennials and seeds, and they are an abundant source of carbohydrate, fat, oil, protein, vitamins and minerals.*
- *Tropical rain forests are a source of medicines and other pharmaceutical products. Many of the medicines produced in the West originate from products and from extractions of flora and fauna*

*found in rain forests. There is no doubt that future research into the contents of tropical rain forests will lead to more discoveries of pharmaceutical ingredients and will at the same time preserve these resources.*

- *Tropical rain forests supply the needs of industry. Apart from wood products, they also provide many basic industrial materials such as oils, resins, sap, latex, wax, rubber and fibers.*
- *Tropical rain forests provide a dwelling place for human beings. They are home for millions of tribal and indigenous people, supplying as they do food and shelter as well as sources of culture and religion for these people. The impact of the latter on the rain forest is minimal because their unique cultures, which have developed over the centuries, have been proven to preserve the forest. These cultures are filled with knowledge of sustainable forest resource management. The destruction of the tropical rain forest threatens their continued survival and could lead to the loss of valuable knowledge.*
- *Tropical rain forests control the earth's climate and its energy and material cycles. They play an important role in protecting the regional and global climatic balance, safeguarding air quality and temperature, and maintaining the water cycle by absorbing rain and preserving humidity, collecting carbon dioxide and releasing oxygen via photosynthesis. These forests function as recyclers of minerals and litter, controllers of river erosion and sedimentation, and barricades against floods and drought.*
- *The tropical rain forest also has an aesthetic function in that it satisfies the needs of the soul. It represents a means by which stress can be relieved as well as a place for recreation and the development of tourism and various cultural activities.*

Meanwhile, in 1983 the extent of the land included in the category of protected forest in which tribal people are not permitted to carry out any activity whatsoever amounted to 5,612,460 hectares according to TGHK zones, while in 1996 the area in this category, when calculated by the Subdistrict Spatial Planning (RTRWK) system, amounted to 5,122,900 hectares (see Tables 1 and 2).

Table 1  
Number and Size of Logging Concessions in East Kalimantan,  
1968-1991

Year	Total Concessions	Concession Size (000 ha)
1968-1969	2	400
1969-1970	9	1,589
1970-1971	21	3,029
1971-1972	27	3,488
1972-1973	37	4,165
1973-1974	62	5,984
1974-1975	71	6,637
1975-1976	76	6,927
1976-1977	83	9,699
1977-1978	89	10,086
1978-1979	97	10,478
1979-1980	100	11,055
1980-1981	104	11,552
1981-1982	106	11,812
1989-1990	112	12,487.7
1990-1991	108	12,093.5

Source: Walhi, 1992.

It is easy to imagine how hemmed in and excluded the tribal and local people must feel, since for generations they have lived here and have made the forest their whole way of life. They are not permitted to take wood or other forest products from production forests which have been “leased” to logging companies. Some concessionaires do not even allow the people to travel through or carry sharp weapons in the forest. This is ironic, to say the least. How can people who live around or within a forest not carry a sharp weapon such as a machete or sword (*mandau*) to defend themselves or to use as an everyday working tool? This is one action which tribal communities find hurtful and indeed offensive. It is small matters like these that cause conflicts to arise between logging concession holders and tribal and local people.

Table 2  
Forested Land in East Kalimantan by TGHK Zones (1983)  
and RTRWK Plans (1996)

Category	TGHK area (1983) (ha)	% of forested land (1983)	RTRWK area 1996 (ha)	% of forested land (1996)
Permanent production forest	5,513,060	26.1	4,727,500	22.4
Limited production forest	4,826,100	22.8	4,955,500	23.4
Conversion forest	1,340,380	6.3	---	---
Protection forest	3,626,300	17.2	2,935,500	13.9
Nature reserves	1,968,600	9.3	2,166,200	10.2
Education & research forest	17,560	0.1	21,200	0.1
Non-forest cultivation areas	3,852,000	18.2	6,338,100	30.0

Source: Provincial Forestry Office, East Kalimantan, 1996.

### **Population Dynamics in East Kalimantan**

In 1990 the total population of East Kalimantan was only 1,876,663 people (*Kaltim Dalam Angka 1995*). The population is very unevenly

dispersed, with most of the people located around Samarinda and Balikpapan (see Table 3). The population of these two towns is dominated by migrants, who are attracted to forest product industries (timber, plywood and rattan), mining (oil, coal and gold) and the service sector.

Table 3  
Population Distribution and Density in East Kalimantan

District	Area (sq.km)	Total Subdistricts	Total Villages	Total Population	Density per sq.km
Balikpapan	749	3	20	334,405	555.5
Samarinda	783	4	37	407,339	639.5
Bulungan	75.724	15	430	232,494	3.2
Berau	24.201	7	78	62,345	2.4
Kutai	95.046	34	420	61,059	6.3
Pasir	14.937	10	130	211,021	1.9

Source: *Kalimantan Dalam Angka 1995*.

The population of East Kalimantan consists of a variety of ethnic peoples, whom Fulcher in Abdurrahman and Wentzel (1997) categorizes into five groups: the Kutai, the Dayak, migrant Bugis and Banjar who have already lived in East Kalimantan for more than 200 years, migrants from Java who moved individually and transmigrants brought under government programs (mostly from Java). The tribal people and indigenous population of East Kalimantan are the Dayak and Kutai, who generally live along rivers.

The Kutai ethnic group, according to Soetoen (1979), consists of five tribes (*puak*), their division being based on the history of the Kutai sultanate, and each having its own dialect of the same language. The five are (1) the Pantun tribe, who live in the area around Muara Ancalong and Muara Kaman; (2) the Punang tribe, who live around Muara Muntai and Kota Bangun; (3) the Pahu tribe, who live around Muara Pahu; (4) the Tulus Dijangkat tribe, who live around Barong

Tongkok and Melak, and (5) the Melani tribe, who live around Tenggarong and Kutai Lama.

The Dayak people are regarded as the indigenous people<sup>17</sup> of the island of Kalimantan, which in much of the literature is called Borneo. The term “Dayak” is a collective name, given by outsiders to the approximately 540 indigenous, non-Muslim groups who, with their various cultures, live on this island. The term Dayak, which is sometimes written as *Daya* or *Dyak*, became known to the Dutch in 1757. It first appeared in J.A. van Hohendorff’s description of Banjarmasin (Ave and King 1986). The word Dayak has been given many meanings. There are those who interpret it as meaning “person from the mountains” or “inlander”. However, in the Ngaju language *daya* is an attitude showing strength, while in the Sungen language the word Dayak means beautiful or handsome (Riwut 1993).

At least five scholars have tried to categorize and group the Dayak people (Widjono, 1993), namely, (1) Mallinckrodt (1928), who divided them into six sub-groups of common origin (*stammenras*), based upon similarities in the customary law that they practiced; (2) Stohr (1959), who grouped the Dayaks by similarities in customary law and death rites, with the same results as those of Mallinckrodt; (3) Kennedy (1974), who used similarities in physical appearance to distinguish different Dayak groupings, (4) Sellato (1989), who placed the Dayaks in categories according to the river routes which they use as the main links to their settlements, and (5) Riwut (1993), who classified them into seven large ethnic divisions, 18 small ethnic groups and 405 familial ethnic sub-groups. These approaches to classification of the Dayak ethnic group are summarized below.

Meanwhile, according to the East Kalimantan Dayak Alliance, 12 ethnic groups have been recorded in East Kalimantan: the Benuaq, Aoheng, Bahau, Bentian, Busang, Kenyah, Kayan Long Kuling, Modang, Punan,

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<sup>17</sup> According to information from Plasma (an NGO based in Samarinda), there is also another indigenous group in Kalimantan, the Pasir people of the Pasir District in East Kalimantan. The Pasir people themselves say that they are neither Dayak nor Malay, although the majority of them are Muslim.

Tonyooi, Kayan Miau Baru and Lundayeh (Abdurrahman and Wentzel, 1977).

In view of the many variations within the group known as the Dayak of Kalimantan, it is difficult to define what is meant by an ethnic group in the Dayak context (Singarimbun, 1991). Given demographic and geographic conditions that are difficult to overcome, one group tends to be separated from the others, while some among them are truly isolated. The result is that, although in the beginning it was hypothesized that the Dayak are of one ethnic family, a theory has emerged that, after the process of dispersion and development of a way of life which has persisted over thousands of years, one group had no contact with another. Although extremely diverse and spread over a wide area, the Dayak ethnic groups have several general characteristics which are relatively similar; for example, they generally live close to or along rivers, they practice shifting cultivation and they have a relatively similar world view and indigenous religion.<sup>18</sup>

Many indigenous Dayak intellectual leaders criticize models and criteria such as those above, because their use leaves many sub-groups still unidentified, although their numbers and presence are fairly significant. Criteria in the form of customary law, language, death rites and the rivers where they live, which are generally used as a classification base, must be added to and expanded by noting similarities in music, residential factors, cultural similarities of a non-physical nature and the physical products of their culture.

<b>Mallinckrodt</b>	<b>Stohr</b>	<b>Riwut</b>	<b>Kennedy</b>	<b>Sellato</b>
>Kenyah- Kayan- Bahau	>Kenyah- Kayan-Bahau	>Ngaju: *Ngaju 53 grps *Maanyan 8 grps	>Kenyah- Kayan-Bahau	>Melayu people

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<sup>18</sup> However, with the passing of time, many Dayaks have embraced one of the “big” religions, generally Christianity or in the case of some groups Islam.



		*Lawangan 21 grps *Dusun 8 grps		
> <b>Ot Danum:</b> Ot Danum, Ngaju, Maanyan, Dusun, and Luangan	> <b>Ot Danum:</b> Ot Damun, Ngaju, Maanyan and Lawangan	> <b>Apau Kayan:</b> *Kenyah 24 grps *Kayan 10 grps *Bahau 26 grps	> <b>Ngaju</b>	> <b>Iban people</b>
> <b>I b a n</b>	> <b>I b a n</b>	> <b>Iban</b> consists of 11 grps	> <b>Land Dayak</b>	> <b>Barito:</b> Ngaju, Ot Danum, Siang, Murung, Luangan, Benuaq, Bentian and Tunjung
> <b>M u r u t</b>	> <b>Murut:</b> Dusun, Murut and Kelabit	> <b>Murut:</b> *Idaan 6 grps *Tidung 10 grps *Murut 20 grps	> <b>I b a n</b>	> <b>West:</b> Bidayuh both in W. Sarawak and W. Kalimantan
> <b>Klemantan</b>	> <b>Klemantan:</b> Klemantan and Land Dayak	> <b>Klemantan:</b> *Klemantan 47 grps *Katingau 40 grps	> <b>P u n a n</b>	> <b>North-east:</b> Dusun, Kadasan, Murut Daratan, and groups around Brunei and East Kalimantan coast
> <b>Punan:</b> Basap, Punan, Ot and Bukat	> <b>P u n a n</b>	> <b>Punan:</b> *Basap 20 grps *Punan 24 grps *O t 5 grps > <b>Ot Danum</b> consists of 61 groups		> <b>Kayan-Kenyah</b>  > <b>Punan:</b> Bokotan, Punan and Bukat  > <b>Central north:</b> Kelabit, Lun Dayeh, Lun Bawang, Murut Bukit, Kajang, Derawan and Melanau
Criteria based on <b>similar customary law</b>	Criteria based on <b>similar customary law and death rites</b>	Criteria <b>unclear</b>	Criteria based on <b>physical appearance (physical anthropology)</b>	Criteria based on <b>main river passages in Kalimantan</b>

Source: Modified from Widjono, 1993.

It is almost impossible to refer to the Bugis ethnic group in East Kalimantan as newcomers. These people have lived there since the 17th

century and have adapted considerably. Their settlement is in accordance with the general nature of the Bugis people, who enjoy wandering and sailing the seas in search of new land. Their activities began as those of fishermen who routinely crossed the Makassar Strait. For this reason it is no longer relevant to call them migrants.

The Banjar ethnic group began migrating to East Kalimantan in the 18th century. These people are involved in various economic activities, particularly trade and sedentary agriculture. There are those among them, in fact, who have assimilated and interacted very completely. The Bakumpai, for example, who are actually descendants of the Ngaju Dayaks, prefer to identify themselves as Islamic Banjar people. The journey of the Banjar people to East Kalimantan was made by traveling upstream along the Barito River in South Kalimantan to the upper reaches of the Mahakam in East Kalimantan and then following the tributaries of the Mahakam.

People of Javanese origin, particularly those who moved under the transmigration program, have also been in East Kalimantan since the beginning of the colonial period and the early years of independence. The proportion of the population brought from Java through transmigration was only 5 per cent in the 1980s but by the end of 1996 the figure had reached 15 per cent (Abdurrahman and Wentzel, 1997). This percentage does not include people who moved from Java of their own accord due to the attraction of economic activities in East Kalimantan. One prominent aspect of the arrival of transmigrants from Java is the speed with which they obtain secure rights over land by comparison with the local population. Conflicts over boundaries and control of land in transmigration areas between the transmigrant newcomers and the local population have often occurred as a result.

### **The Main Resources of the Indigenous People**

East Kalimantan's forest has great biodiversity in plants, which form the main basis of the economy and a major resource for indigenous people. Products include the wood of the *meranti*, *ulin*, *tengkawang*, *bakau* (mangrove), *rawa*, *keruing*, *lempung* and *kapur* trees, as well as other non-wood plants such as bamboo, the forest areca nut, rattan, several types of palm, and tubers from the forest. The same is true of the biodiversity of fauna which form sources of animal protein for the indigenous people. At least 162 types of fauna have been protected under law, including mammals, birds, reptiles, amphibians and insects. The wealth of flora, fauna and their products has motivated economic exploitation by people from outside indigenous communities.<sup>19</sup>

The utilization of forest resources by indigenous peoples living in and around the forests of Kalimantan (Hoffman 1985) and South-east Asia (de Beer and McDermott 1989) has been going on for thousands of years. According to Wolters (1967) cited in de Beer and McDermott (1989), there is evidence that at the beginning of the 5th century a number of Indonesian forest products went as far as the mainland of China. Heine-Geldern (1945) cited in Hoffman (1985) states that the indigenous people of East Kalimantan have used forest resources for trade with foreigners from, among other places, China, Arabia, Persia and the Malay peninsula. Trade relationships have existed for a long

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<sup>19</sup> Examples of the flora and fauna of East Kalimantan can be found in the Kutai National Park in the Bontang area. This Park has a variety of unique forest ecosystems, such as *Dipterocarpacea* forest, lowland forest, fresh-water swamp forest and mangrove forest as well as forest on limestone soils. It has the greatest biodiversity of any recorded Indomalayan rain forest in Kalimantan. Here can be found 83 per cent of Kalimantan's 300 bird species as well as 54 mammal species, including the proboscis monkey, orangutan, *kukang* (a large frog) and wild ox. A wide assortment of flora can also be found in the Kersik Nature Reserve, which covers 5,000 ha and contains hundreds of varieties of forest orchid, the most famous among them the black orchid. It is extremely regrettable that the Kutai National Park has been reduced from 306,000 ha to around 200,000 ha because of mining, excavations, timber estates, industry, settlements and a main highway that cuts through the forest. This is also the case with the Mahakam porpoise, which is Indonesia's only species of fresh-water mammal and which is now under threat of extinction as a result of the destruction of its ecosystem and declining water quality in the Mahakam River and the Jempang, Semayang and Melintang Lakes. The decline in water quality is a result of sedimentation traceable to logging activities and forest clearing (*FORUM* No. 14/V/1996).

time; it is estimated that they had already begun by the third century BC, perhaps even earlier. This proves wrong the assumption that tribal and traditional people cannot create value added from the forestry sector. However, it is hardly appropriate to place their efforts in this respect in the context of modernization and to compare them with the undertakings of capital-based development in the forestry sector.

Under customary law primary forest that has been cleared by tribal people automatically belongs to them. The clearing of land and forest is not done arbitrarily. Tribal people take into account the rhythm and dynamics of nature which they have been familiar with for generations. This is acknowledged by each member of the Dayak society. Before primary forest is opened up, not just for the purpose of changing its function but also when the intention is only to take products that are needed, there is usually a ceremony for the clearing of the land. In this ceremony the community gives thanks to and asks for the blessing of the Creator and at the same time promises always to protect the forest as the main resource for their grandchildren. The ceremony is witnessed and approved by all members of the community. To strengthen their claim over the land, several varieties of perennials are planted on the newly cleared land, such as *durian* and *tengkawang*. The fruit of these trees, when ripe, may be eaten by the surrounding community. In recent times this ceremony has been misused as a ceremony for the surrendering of land rights to giant projects.

For tribal people, the management and handling of these resources is carried out with a wisdom which ensures their sustainability and preservation. Indeed, since early times the forest has been seen as a producer not just of wood but also of other commodities like rattan, *gaharu* wood, resins, wild rubber, swallow's nests and bezoar stones. Many non-wood forest products are sought by the indigenous inhabitants and tribal people living in and around the forest because (1) non-wood forest products are easy to obtain and their collection does not require complex technology, (2) they can be obtained at no cost, providing there is a will, and (3) they have an important economic value for bartering purposes or for commodity trade. At the local level, therefore, non-wood forest products can guarantee food security,

sources of income and opportunities for employment, and they generally provide a guarantee of “welfare” for the local society.<sup>20</sup>

A study by Hoffman (1985) of Punan Dayak society in connection with the exploitation of non-wood forest products in East Kalimantan concludes that fundamentally the Punan economy is not just oriented to subsistence but is also market-oriented through trade in non-wood forest products. The general characteristics of the way of life of the Punan people as they roam through the forest are qualities that make it easier for them to collect and trade non-wood forest products rather than to be exclusively involved in agriculture. In other words, the Punan people, in their collection and trade of non-wood forest products like rattan, resins, *gaharu* wood and swallow’s nests, have for a long time made a significant contribution to the international market.

Proof of the Dayak people’s past involvement in the trade of non-wood forest products on an international scale can be seen in the variety of objects that they possess but have not made themselves, such as gongs, large water jars and porcelain jugs. These things are the products of trade with Chinese and Malay peoples and are now regarded as heirlooms. This point is further strengthened by the statements of Dayak elders who say that since the time of their ancestors they have been trading with foreigners from such places as China and the Malay peninsula.

According to de Beer and McDermott (1989), trade in non-wood forest products by South-east Asians has been going on for two thousand years. Other evidence indicates that the export of non-wood products to China from places in western Indonesia such as East Kalimantan began in the 5th century. At that time the main trade commodities were resins, benzoin and camphor.

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<sup>20</sup> De Beer and McDermott (1989) categorize non-wood forest products in general terms as:

- |                              |                      |
|------------------------------|----------------------|
| 1 Edible plant products      | 5 Medicinal products |
| 2 Edible animal products     | * plant products     |
| 3 Non-edible plant products  | * animal products    |
| 4 Non-edible animal products |                      |

Foreigners, especially Chinese, are attracted to forest products, in this case, non-wood products from Kalimantan's primary forest. Among these products is *gaharu* wood, which is the basic material for incense and fragrance, and swallow's nests, which, if eaten, are believed to have special qualities as a Chinese traditional medicine. Bezoar stones (*guliga*), which are obtained from the sediment found inside a certain species of monkey and porcupine<sup>21</sup>, are used as a medication for all types of disease ranging from an upset stomach to asthma. The horn of the Kalimantan rhinoceros is trusted as a cure for male impotency. Resin is the basic material for glue and putty, while rattan is used as a material for making various types of household furniture. Gutta-percha is used to coat boats to make them water resistant and camphor is used by the Chinese as an ingredient in medicine, incense and the embalming of corpses. Beeswax is used to make various balms and other external medicines, while various fruits are eaten or made into other products.<sup>22</sup>

The above products have made Kalimantan (Borneo) famous, and have become sought after as many people require them. They are products from the forests of Kalimantan, and are harvested and utilized by the indigenous people of Kalimantan, that is, the Dayak and more specifically, the Punan people (Hoffman, 1985). It is clear from the above explanation that exploitation of and trade in non-wood forest products have long been a part of the lives of local people. This activity has a vital place in the people's economy, particularly that of the Dayaks. It is no exaggeration to state that the trade in non-wood forest

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<sup>21</sup> Gunawan (1992) states that for the kasepuhan community in the South Banten area of West Java, the insides of porcupines is one of the ingredients of a type of medicine called *dodol jahe* to strengthen the body, especially for women who have just given birth.

<sup>22</sup> In the era of globalization and world trade, there is an obligation to patent work results under intellectual property rights, including traditional wealth and wisdom. If this is not done by the tribal/indigenous people themselves, there is a great possibility of exploitation, with patents being sought by others. If this occurs, the people who have used and developed this wisdom and wealth but have not had the opportunity to patent it, will become the potential consumers of their own assets and knowledge. They will have to purchase the biological resources, which they have always owned, used and developed, at a high price.

products forms one of the most important activities of the East Kalimantan people's economy.<sup>23</sup>

Widjono (1993:38) divides non-wood forest products by their source, thus providing a wider definition of this terminology based on the argument that the agricultural and smallholder cash-crop sectors also originate in the forest. If the structure and function of the gardens and farms of the people of Kalimantan are examined, the close relationship with the forest becomes readily apparent. At a glance, particularly for people unfamiliar with the nature of agriculture among Kalimantan communities, it can be seen that these gardens and farms have a structure similar to that of the forest in terms of both density and type of plants. By widening the scope of our understanding of non-wood forest product sources, we find that in Kutai there are at least 18 types of commodities which can be classified into three groups and have the potential to support the people's economy. The first group takes in eight different forest products, namely, swallow's nests, rattan, *gaharu* wood, honey, sap from the *jelutung* tree, wood for roof shingles, and the *tengkawang* tree. In the second group there are the five commodities found in gardens, namely, rubber, coffee, pepper, coconut and candlenut. The third group takes in products from farming, including *durian*, jackfruit, *rambutan*, *langsat* and pineapple. Potter (1991) states that in the Dutch colonial period rattan was a commodity valued more highly than wood. At that time several Japanese concession enterprises were already taking wood from East Kalimantan. Walhi (1993) shows that five large logging companies were operating in East Kalimantan in 1939.<sup>24</sup>

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<sup>23</sup> Widjono (1993) states that the cost of children's education is mostly paid for by collecting non-wood forest products, resulting in the saying: "We paid for our schooling with rattan".

<sup>24</sup> Two of the five companies, namely, the Nangyo Ringyo Kabushiki Kaisa in Sangkulirang and H. Yamaka in the Mahakam area, were Japanese and extracted wood for export. A third company, Houtaankap Maatschappij, also logged wood for export, while the two others were a large Dutch oil company, the Bataafsche Petroleum Maatschappij, in Balikpapan, and a sandstone mining company called Steenkolen Maatschappij Parapattan in Berau; both felled the timber that they required for internal use.

After independence, the Indonesian government's Forestry Department took over forest control and management through the state forestry enterprise known as *Perhutani*. However, the management model, particularly the cooperative type with certain Japanese companies, proved unsuccessful. Finally, with the establishment of the New Order in the second half of the 1960s, the government invited private enterprise, both domestic and foreign, to invest capital in the forestry sector through the concession system. Since the opening of opportunities to invest capital in the forestry sector, requests for concession licenses in East Kalimantan have flowed in continuously.

### **The History of Forest Control and Exploitation**

In the period preceding the First Five Year Plan of 1968-9, approval was given to two foreign investment forestry projects, which became the forerunners of private investment, both domestic and foreign, in the exploitation of forest resources in East Kalimantan. The first logging rights in East Kalimantan were given to PT Yasa Maha Kerta in 1967 in the form of a concession area in the Bulungan District. Then in 1968 a second license was given to PT Porodisa Trading Industrial, which obtained concession rights in the Sangkulirang area. The giving of concessions continued to expand until by 1981-2 there were some 106 concession holders operating over a total concession area of 11.8 million hectares. Ten years later, only two new companies had been added to the total number of concessions, but the concession area had increased to around 12 million hectares. The most rapid expansion of foreign and domestic capital investment in forestry in East Kalimantan occurred between the First and Third Five Year Plan periods, reaching 33.9 per cent by value of total investment for the whole of East Kalimantan. Investment in this sector decreased during the Fourth and Fifth Five Year Plans to just 3 per cent and 1 per cent by value. During the Fifth Five Year Plan there were no additional projects but existing projects were extended in area.

At the end of the 1960s the provincial government granted concessions wherein the greater part of extraction work was to be carried out using traditional technology and involving local people and immigrants. When



this system was first introduced, local communities had the opportunity to fell timber freely both inside and outside concession areas and to sell it to middlemen who had already paid money in advance. The logging of timber increased together with the demand for this product. The timber was felled and then floated downstream on a river. If the river was low, the floating of the logs was postponed until the water rose or there was a flood. Timber that had been felled was collected in one place to await the arrival of a flood. After this place had filled with water, the logs would be pushed to the river and tied together with other logs in the form of a raft, to be then taken to the site of timber storage or processing. Because the mode of transport utilized flood water (*banjir*), it became known as *banjir kap*, a term that became well known during the second half of the 1960s. The technique had a significant impact on the economy, not just for the local population but also for immigrants from outside the area (Manning, 1971).

Timber exploitation during the *banjir kap* era increased the cash income of the population and of traders in this commodity, although it also had the negative effect of allowing unrestrained denudation of the forest. *Banjir kap* came as a shock to all, including the local tribal people. Mubyarto *et al.* (1991a) assert that the *banjir kap* period was the “first stage of forest destruction”, during which there were no replanting efforts and no recording of the extent of logged forest land.<sup>25</sup> Aware of the destructive effects of this system, the East Kalimantan provincial government ultimately abolished it through Decree No. 144 of 1971. Following this, logging was carried out by investors holding concessions who used mechanized timber extraction technology involving tractors, cranes, logging trucks and chainsaws. According to Potter (1991:182), mechanized technology was introduced to extract timber at the “suggestion” of Japanese buyers who felt that timber from Indonesia always arrived late. They therefore provided credit for mechanized technology and rejected timber logged and processed manually. Mechanization began in the 1970-3 period. Its positive effects on productivity can be seen in the extent of logging and the volume of

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<sup>25</sup> Unfortunately, there are as yet no comprehensive studies that compare the level of environmental damage and ensuing benefits felt by the local people during the *banjir kap* period with the level of destruction and profit experienced by these communities as a consequence of the logging concession system of exploitation.

output of timber and other products (Tables 4 and 5), the development of supporting infrastructure and the economic growth of East Kalimantan, while the negative impact is apparent in the environmental destruction that it caused.

Table 4  
Log Production in East Kalimantan, 1969-1994

Five Year Plan period	Extent of logging (ha)	Production (m <sup>3</sup> )	Average output per year (m <sup>3</sup> )
I 1969-74	744,373	27,804,366.54	5,560,873.3
II 1974-79	1,236,854	43,628,866.46	8,725,773.3
III 1979-84	434,199	24,308,823.24	4,861,765.0
IV 1984-89	434,398	25,999,061.12	5,199,812.2
V 1989-94	651,966	28,996,781.44	5,799,3356.3

Source: *Kaltim Dalam Angka 1993-1994*.

In the 1980s the Minister for Agriculture, the Minister for Trade and Cooperatives and the Minister for Industry announced a Joint Decree concerning the obligation to provide timber for domestic needs, a policy that was related to the export of logs. In 1985 the policy was gradually replaced by a direct ban on log exports, which then stimulated growth in the domestic timber processing industry, particularly in East Kalimantan. This in turn encouraged many concession holders to extend their work units to include timber processing, especially the production of plywood.

The banning of log exports had a direct impact on timber processing industries outside Indonesia, for up until then they had relied on Indonesia for their raw material. At the same time it led to the emergence of conglomerates in the forestry sector, that is, it encouraged business groups with logging concession rights not only to set up their own timber processing factories but also to take control of the downstream marketing of processed timber. The era of mechanization in

forest logging in East Kalimantan became increasingly intensive. Table 5 shows production of processed timber by volume between 1979 and 1994.

Table 5  
Processed Timber Production in East Kalimantan, 1979-1994

Product	Third Five Year Plan (1979-84)	Fourth Five Year Plan (1984-89)	Fifth Five Year Plan (1989-94)
Sawn timber *	1,282,532.1	2,103,485.0	5,888,429.7
Plywood*	1,112,491.2	5,424,215.6	9,442,192.3
Veneer *	223,653.5	936,315.1	27,359.3
Chipwood**	676,676.0	503,709.0	1,509,541.0
Particle board*	--	17,349.5	121,728.7
Others*)	--	149,699.6	784,211.3

Source: *Kaltim Dalam Angka 1993-1994*.

\* cubic meters    \*\* tons

There has been serious destruction of the forest in East Kalimantan. Since the second half of the 1960s the economy of the province has experienced an oil and timber boom, concentrated in the two main towns of East Kalimantan, that is, in Samarinda, which forms the center of the timber industry, and in Balikpapan, which is the center of the oil and gas industry.<sup>26</sup> In 1978 this province had less than 1 per cent of Indonesia's population but produced approximately 25 per cent of the country's total export income, a figure that far surpassed the total exports of the three other provinces in Kalimantan. This income was produced by the two main commodities of oil and gas and forest produce, particularly timber. Oil and gas produced in East Kalimantan

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<sup>26</sup> Almost half of East Kalimantan's population live in these two cities. The dynamics of their way of life are different from those of the indigenous population who live on the periphery of the cities and in the hinterlands and who are still oriented towards the local economy, which is characterized by shifting cultivation and the utilization of forest products.

during the decade from 1968 to 1978 had an export value of almost 25 per cent of the nation's total oil and gas exports, while the export value of timber was approximately one half of the total value and volume of national exports. If, for example, one third of this value had been returned to develop the local economy and to conserve natural resources, the surplus value produced could be maintained. Unfortunately, the majority of the tribal people living in and around these sources of surplus have not been able to enjoy the boom that was created.

Records show that as a result of forest exploitation during the last decade plywood from Indonesia has reigned over the world export market. It is this that has made processed timber the major non-oil/gas export and the largest contributor of foreign exchange. In the decade from 1983 to 1993 exports of Indonesian plywood reached a volume of 71.162 million m<sup>3</sup>. The contribution made to foreign exchange by plywood exports amounted to US \$ 4.53 billion in 1993 or around 16.68 per cent of all non-oil/gas exports, which totaled US \$ 27.15 billion in that year. Apart from the acquisition of foreign exchange, the contribution of the forestry sector to domestic value added and the central budget has been extremely small. During the 1983-89 period the forestry sector's contribution to Gross Domestic Product was just 1 per cent, while levies and dues from this sector constituted no more than 0.2 per cent of the government's domestic income. This indicates that only a small proportion of the considerable foreign exchange earned by the forestry sector has ended up in the state treasury. The greater part of the profits obtained from denudation of the forest has been enjoyed by private logging concession holders. The small contribution of the forestry sector to the national budget can be explained by the small amount of economic rent that has been collected. The greater part of the economic rent gained from exploitation of the forest, that is, approximately 83 per cent, has been enjoyed by entrepreneurs and only 17 per cent has become government revenue (Ramli and Ahmad, 1993); Triawan, 1995).

Zerner (1990) states that the economic profit gained from the collection of forest timber through logging concessions has been exaggerated as the economic costs of the environmental destruction resulting from this

exploitation have not been taken into account. In socio-cultural terms, Zerner argues, this government policy has tended to reduce and even eliminate the capacities of the tribal and indigenous people who have lived in the forest for generations and who depend on it for their livelihood. Forestry policy in Indonesia has tended to be based on the assumption that the traditional ways of life and the patterns of forest resource management of tribal and indigenous people are primitive, inefficient and destructive. The result is that norms, sanctions, ways of life, technology and traditional environmental management practices have been ignored and even considered a threat in the making of policies concerning management and utilization of forest resources.

The East Kalimantan experience provides a valuable lesson on the exploitation of forests. East Kalimantan is currently an industrial center for forest products and as such contributes around 25 per cent of national output (equivalent to 6.5 million cubic meters of timber per year). This timber is produced by more than one hundred concession holders who operate in the province, more than 50 per cent of which has been leased to concession holders since the 1970s. This does not mean, however, that regional welfare itself has risen. Of all forestry taxes and levies collected in East Kalimantan from 1975 to 1989, only approximately 28.08 per cent were returned to the region. In terms of growth, the forestry sector has expanded by only 1.4 per cent, which is far lower than figures for growth in the agricultural sector (3.8 per cent) and in total gross domestic product (5.5 per cent) (Walhi, 1993; Ramli and Ahmad, 1993). In terms of the people's economy, forest utilization in the form of logging concessions and timber estates (established with and without transmigrants) has played a negative role, or at least methods of forest exploitation using these approaches have not yielded any value added in the economic sense. Instead, these methods have created a burden and placed serious pressure on the environment. Eventually this has had an impact on the three-dimensional process of impoverishment, that is, on the social-cultural, the economic and the political dimensions.

In 1994, 111 companies holding logging concession rights were recorded in East Kalimantan; among these there were only two state-owned companies, Inhutani I and Inhutani II. Table 6 shows the ten

major forestry groups. These companies control a concession area of more than 12.1 million hectares, which is divided into ten forest sections. Mahakam Ulu, where Lambing and Benung are located, is the most intensively worked of these sections, with some 27 companies operating in an area of around 2.15 million hectares.

As noted above, rapid industrial growth, especially in processing industries related to forestry, was encouraged by the availability of mechanical extraction technology in the form of tractors, cranes, logging trucks and chainsaws.<sup>27</sup> For this kind of machinery to work optimally, suitable infrastructure in the form of networks of logging roads and sites for log piles is required. A logging road consists of a main road, branch roads and skidding roads as well as corridors. Skidding roads are roads for tractors collecting timber and transporting it from the logging site to the log pile. The width of these roads is about the same as that of a tractor. The main road is approximately three times wider than a logging truck or approximately 20 meters, while side roads are about twice the width of a logging truck. The length of the road influences the width of the daylighting area, that is, the area cleared to the left and right of the logging road so that it always remains dry or at least dries quickly. The longer the logging road network, the wider the area needed for daylighting.<sup>28</sup> By 1994 the length of logging road networks in East Kalimantan was 13,025 km, which meant that an ever-increasing area was needed for daylighting.

Table 6

Major logging groups by concession area and associated timber companies

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<sup>27</sup> However, it is apparent that mechanization is not always accompanied by a high level of efficiency in the utilization of timber. According to information obtained at a one-day Walhi seminar on the 11-4-1995, the level of efficiency of forest products, especially timber, in Indonesia, is still very low at around 60 per cent; the remaining 40 per cent consists of waste and flawed wood. The level of efficiency with which one tree is used is also extremely low, for the finished product represents only 20 per cent by comparison with an efficiency rate of 70 per cent per log in America.

<sup>28</sup> Hamzah (1978) states that in the ITCI logging concession area the logging road network was 500 km long (at that time, longer than the whole main road network in East Kalimantan), which required a daylighting area of 40,000 hectares. This means that for every kilometer, 800 m<sup>2</sup> of daylighting land is needed. Field observations show that this daylighting area extends approximately 20 meters to the left and right of the main road, which means that the area cleared is 2 x 20m x 1,000 m per kilometer of road.

Name of logging concession group	Area of logging concession (ha)	Associated timber processing companies
Inhutani 1	2,422,000	Idec Wood Abadi Inhutani Samarinda Inhutani Juata Inhutani Nunukan Inhutani Sesayap Kenahutani
Kiani Lestari	814,000	Kalimanis Plywood Kalhold Utama Plywood Santi Murni Plywood Kiani Lestari
Sumalindo Lestari Jaya	687,000	Sumalindo Lestari Jaya Dharma Satya Nusantara
Roda Mas Timber Kal. Coy	637,000	Tirta Mahakam Plywood
Sumber Mas Timber	590,000	Meranti Sakti Indah Ply Kayan River Indah Ply Sumbermas Sawmill
Harjohn	577,000	Kayu Alam Perkasa Raya
Kayu Lapis Indonesia	483,000	Kayu Lapis Indonesia
Barito Pacific Timber	481,000	Tunggal Yudi Plywood Hutrindo Palaran Ply Bina Segah Utama Ply Sangkulirang Bhakti
Dayak Besar Timber	462,000	Daya Besar Agung Ply Daya Agung Wood
Inne Donghwa	356,000	Inne Donghwa Balikpapan Forest Industry

Source : Walhi, 1992.

The daylighting areas, the skidding roads and the places where logs are piled or accumulated all have high levels of soil erosion and destruction

because they are constantly disturbed by mechanized equipment. The effects of the operation of this equipment and the intensive felling system can be seen immediately in the high rate of forest destruction. This continuous disturbance has caused very serious damage to the physical structure and hydrology of the soil in concession areas and clearings used for roads. The erosion rate is extremely high because the surface of the land cannot retain running water when rain falls. This destruction causes difficulties in plant regeneration and succession in the area. Even worse is the accumulation of logging debris and other organic material, which, when it dries out, becomes highly flammable.

In 1982-83 a terrible forest fire, recorded as one of the worst natural disasters experienced in a tropical forest this century, occurred in East Kalimantan. According to Ave and King (1986), the raging flames reached a height of 60 meters and caused thick clouds of smoke which disrupted air traffic. The fire destroyed around 3.5 million hectares of forest, which consisted of 800,000 hectares of mixed forest vegetation, 550,000 hectares of swamp forest, 750,000 hectares of secondary forest and agricultural land and 1.4 million hectares of forest logging areas. The extent of forest destroyed by the fire was almost 20 per cent of the total area under forest in Kalimantan. The fire also caused the destruction of genetic resources and plasma as well as biologically diverse tropical forest flora and fauna. The main cause of the fire itself was uncontrolled logging activities and a very long dry season, but other factors also contributed to the disaster.<sup>29</sup>

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<sup>29</sup> Many people, including workers in the Forestry Department, blame the long dry season and the "primitive" farming practices of shifting cultivators for the fire. However, it is obvious that shifting cultivation practices alone could not possibly have caused such a fire. These practices have been used for thousands of years but there has never been a fire as terrible as that of 1982-83. Many experts are of the opinion that the logging of tropical rain forests has left land highly susceptible to fire. Extensive logging causes drought and raises the temperature of the earth. Drought and higher temperatures occur as forest cover decreases. In fact, tropical forests control global temperatures and climate. The relative safety of primary forests during these fires, compared to forest areas that have undergone logging, is proof that cleared forests are highly flammable due to the presence of dry, dead plants left after trees are felled. Others, the Ministry of the Environment among them, believe that the cause of these huge fires was the presence in the soil of highly flammable organic materials like resin and sap, which tend to predominate in areas with high levels of forest clearance, that is, in old logging concession areas.



The logging of forests within concession areas is difficult to control, even though there are a number of regulations in existence for this purpose. Several interrelated factors contribute to the difficulty in controlling logging activities. There is a significant gap between concession periods (20 years) and the planting-felling cycle (35 years), which tends to encourage concession holders to clear-fell without paying attention to the various regulations or to the consequences that follow. Indeed, many concessionaires have adopted the principle that as long as they have control over a forested area, logging should be carried out exhaustively, after which a proposal can be made for a new concession area.

Illegal logging, which is even harder to control, exacerbates the situation. In addition, farming practices which are not well controlled and which are often adopted by migrants from outside Kalimantan who are unfamiliar with local soil characteristics, contribute to the emergence of critical land that is fire-prone. The abuse of logging rights by concession holders, along with illegal logging and the irresponsible dry-farming techniques used by non-indigenous farmers and described by Ave and King (1986) as “predatory cultivation practices”, make the future of the tropical rain forest look extremely gloomy.

The reforestation movement has not succeeded to the extent previously expected, as concession holders are not yet serious about implementing and supporting reforestation. Indeed, their actions are planned on paper without concrete implementation in the field. Implementation, as described in a number of reports, tends to be done for show purposes rather than through any real commitment to reforestation in areas that have been cleared of forest cover. In fact, each concession holder has been taxed for the Reforestation Fund, allocation of which comes under the authority of the President and the Minister for Forestry. In 1996 money from the Reforestation Fund was used to support expansion of the Nusantara Aircraft Industry (IPTN) and to provide an interest-free loan to one of Indonesia’s biggest forest tycoons for construction in East Kalimantan of South-east Asia’s largest pulp factory. Theoretically, these funds should be returned for the implementation of reforestation in accordance with “methods already agreed upon”. Due to vagueness about the nature of the “agreed-upon” reforestation methods, the lack of

transparency in policies and processes of accountability, and the great number of concession holders completely exploiting the forest, any attempt at proportional allocation of funds becomes difficult. As a result, the reforestation program has not functioned as it should have.<sup>30</sup> As an example, PT ITCI, one of the companies holding logging rights, has a concession area of 695,000 km<sup>2</sup> and clears 30,000 hectares of forest each year, yet in 1979 it planned the reforestation of only 1,000 hectares. In the years since then, PT ITCI has not increased its reforestation area. Furthermore, the replanting that has been carried out within the reforestation area has not been based on the principle of biodiversification; instead, the principle of monoculture has been adopted in the hope of making more timber available in future years, especially if concession licenses are no longer valid.

Information available on greening in East Kalimantan is extremely limited. According to the records of the Provincial Forestry Office of East Kalimantan, reforestation during the period of the Third Five Year Plan covered only 5,628 ha; the species planted were pine trees, *Dipterocarpus*, *Agathis*, *senon* and mahogany. Most of the trees that were planted were later destroyed by fire, however, resulting in the failure of the project. The same was the case with the rehabilitation of critical land and soil conservation, which up until the Third Five Year Plan had been attempted on only 3,048 ha and was also considered to

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<sup>30</sup> It has been stated that around Rp 400 billion of the interest on the Reforestation Fund was lent to IPTN, Rp 100 billion was borrowed by the People's Welfare Savings (the *Takesra* program pioneered by the State Ministry for Population and Family Planning), Rp 500 billion was lent or used to make rice fields on 1.4 million hectares of peat land in Central Kalimantan, and Rp 34.73 billion was used by State Enterprises in the Forestry Department (Perum Perhutani and Inhutani I-V) to purchase 15,100 shares in the N2130 aircraft manufacturing project at US\$1000 a share (*Kompas* 25-4-1996). One major use of the Reforestation Fund has been for timber estates. In 1995 Rp 600 billion from the Fund was used for this purpose, and it is estimated that the same amount has been spent in following years. The Reforestation Fund is collected from State Enterprises and logging concessionaires based on the volume of timber (m<sup>3</sup>) exported; for example, for one cubic meter of *meranti* timber a levy of US\$16 is imposed, with US\$18 for *ramin* timber. What also makes the Fund difficult to control is the fact that its management has been entrusted to the Minister for Forestry, while disbursement requires Presidential permission. Since the Fund is not included in the National Budget, social control by the public is difficult.

have failed. During the Fourth Five Year Plan, greening, reforestation and beautification activities were likewise very limited in scope. Reforestation and TPTI planting covered just 58,160.74 ha or 0.15 per cent of the area logged by concession holders during the same period. It is therefore unrealistic to expect regrowth to occur from activities on this scale. The focus for hope appeared to lie with the timber estates, establishment of which had already begun in 1984. The success of these undertakings, however, has not yet been subject to examination. The cost of the timber estate program has turned out to be high in terms of the closing of local people's access to the forest and elimination of the gardens and fields that form a major source of livelihood for the community.

Apart from yielding a high level of productivity, the effects of mechanized forest extraction technology have been felt deeply by the local population. They have been unable to become involved in the production process not only because they lack the necessary skills to operate heavy machinery but also because the logging companies do not provide the opportunity for them to learn to do so.<sup>31</sup> This has directly excluded them from business opportunities and involvement in concession areas. Mechanization proved to be a serious blow after the old forest production and extraction technique of the *banjir kap* system was prohibited. Communities living around the forest are forbidden to fell trees within the concession areas; people require prior permission from the concession holder even to cut wood and collect forest products for their own needs. This situation has greatly encouraged conflict between the local community and concession-holding companies.

The productivity and efficiency of the logging companies in timber extraction has in turn accelerated the opening up and exploitation of

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<sup>31</sup> Another reason that has been put forward is the persistent view that local norms and values are potential sources of conflict with logging concession management; for example, when communities organize ritual ceremonies which take up a lot of time and money, the workers involved may abandon their jobs, even though they have a formal contract. A further reason is the belief that employees' loyalty to company management and management's control over employees would be extremely limited if the logging companies accepted local people as the major component in their workforce.

new operational areas, as a consequence of which there has been steady narrowing of the space left within which local communities can move as they strive to collect and utilize other forest products. In view of the fact that logging activities prioritize timber exploitation and neglect other resources which have traditionally been used by local people, the availability of these other resources has also been affected by expansion in logging operations. This shift in systems has led to the loss of much of the biodiversity that once existed in concession areas.

Logging concession activities have also impacted on the traditional timber-cutting activities carried out by local communities, which now have difficulty in obtaining raw material. This has resulted in many small sawmills becoming bankrupt. The increased theft of wood and greater illegal logging that have occurred can be seen as a form of despair and even opposition on the part of local people to the unfair competition that they face in the utilization of forest resources which these communities regard as “common property”.

Even the Timber Estate Program (HTI), which has been widely proclaimed by the government as involving both transmigrants and the local population as workers, has given rise to problems. Ecologically, timber estates threaten biodiversity and cause erosion due to the complete clearing of the forest and its replacement with the monoculture of a specific industrial tree. Besides this, the timber estates place local communities at a great disadvantage because they ignore customary-law lands. Even now, the establishment of timber estates is continuing without any attention to the objections of local communities, as has happened in the elimination of the *simpukng*, *rondong* and *lembo* gardens belonging to Dayak communities.

There is a bias in favor of timber in the assessment of forest products in the sense that logging concession holders and timber estates regard wood as the only forest product worth processing, even though there are many non-timber resources which are of use and bring significant welfare to the communities living around the forest. According to information obtained from an environmental activist in Samarinda, the utilization of non-wood forest resources by the local people absorbs four times as much labor as logging concessions and timber estates, and at

the same time these people obtain additional income of widely varied kinds. More than that, the local communities that utilize non-wood forest products still firmly observe customary-law agreements, which pay strict attention to preservation of the forest. These days, however, the economic activities of local people are being threatened by, and not infrequently clash with, those of the logging concessions, timber estates and large commercial plantations which are being established within the customary-law forest lands of local communities.

The rattan that can be directly harvested by local people is currently declining in amount because it is located within logging concessions and timber estates. The destruction of rattan, which grows tightly coiled around the forest trees felled by logging companies, indirectly removes a source of livelihood for local people for rattan is one of the major commodities that local communities rely heavily upon.

The collection of birds' nests and *gaharu* wood encounters the same problem, that is, local people no longer have access to these commodities and can therefore no longer collect them. The situation has been made worse by the *pachtar* system under which the local government gives a monopoly on their exploitation to certain financiers (*cukong*), whose position is strengthened by the support of certain persons from both civil and military circles. Because authority for business management is transferred to these financiers, the local community is not as free as it used to be to collect these two commodities and sell them in the market. The monopoly over trade in birds' nests is one of the reasons why profits tend to fall to the financiers rather than being distributed equitably with the local community. Monopolies are established through the supply of the everyday needs of the community in exchange for the collection of birds' nests; in evaluation of output, the people are treated as nothing more than contractual workers. If the products of the local people's work are compared to the support they receive in meeting a few daily needs, the results in terms of value are unequal.

A similar experience in West Kalimantan is noted in the findings of Alqadrie (1992), who states that a decline in the incomes of the local people of West Kalimantan is apparent if a comparison is made of

average monthly earnings before and after logging companies commenced operations in their region. During the 1963-65 period average income was Rp 42,655 (US\$102.79); of this, Rp 11,375 (26.7 per cent) originated from the food-crop subsector, Rp 17,062 (40 per cent) was derived from forestry and Rp 14,218 (33.3 per cent) came from the cultivation of smallholder perennial crops. But in 1990-92, by which time logging companies had exploited the forest quite intensively, average income was only Rp 88,750 (US\$46.71). The proportion from food-crop cultivation had decreased by 40 per cent, while in forestry the decline was 20 per cent and in perennials 10 per cent. The fall in real income between 1963-65 and 1990-92 cannot be explained only by inflation. Rather, it is very largely traceable to the decrease in earnings from the forestry subsector as a consequence of the reduction in forested area and restrictions on the collection of forest products by local people.

Although tribal people's rights are acknowledged and protected under Article 6 (paragraph 1) of Government Regulation No. 21 of 1970, these rights have never been accommodated to the maximum extent. Tribal and indigenous people must still request permission from concession holders to take forest products from their own regions, a process that requires discussions between the two parties. In reality, this stipulation often means nothing more than political jargon on paper. Indeed, another paragraph in the same article (Article 6 paragraph 3) states that for the sake of public security implementation of the community's rights to collect forest produce has been suspended. This paradoxical situation actually occurs within the framework of the law and of national policy regulating the allocation of forest resources and products in Indonesia.

The transmigration program sponsored by the government has indirectly contributed to the burden on Kalimantan's forests and to limitations on the local community's agricultural areas. The burden lies not just in the provision of land for transmigration settlements but also in the social problems that ensue. It would seem that there is a difference in orientation between the Dayak people and the transmigrants when it comes to farming. Farming as carried out by the Dayaks tends to be subsistence-oriented, whereas in their agricultural practices transmigrants are market-oriented. Because there are no markets, many transmigrants eventually become wage laborers for both the local people

and timber companies. These failures in agriculture widen the areas of critical land, as can be seen from the number of abandoned fields covered in *Imperata* grass (*alang-alang*).

The transmigration program often goes hand in hand with other projects such as the Smallholder-Nucleus Estate or *PIR-Trans* program. Conceptually, it was hoped that this program would act as a bridge for interaction between transmigrants and local communities. In practice, it has turned out that the local communities, particularly the Dayaks, are not very enthusiastic about the program, because they feel that their forest lands have been taken and that there are restrictions related to the new regulations in the *PIR-Trans* system. In fact, long before the formal, national transmigration program was introduced, spontaneous migration to Kalimantan from various places such as Java, Madura and South Sulawesi was common. Spontaneous migration has been encouraged by pull-factors such as the oil and timber boom in East Kalimantan. As is the case with transmigration, there were those among these spontaneous settlers who became successful and others who failed. Spontaneous migration of this kind is much more flexible than transmigration.<sup>32</sup>

Another program that also has implications for the forest is the resettlement of isolated ethnic subgroups that still roam through the forest and are regarded as having no permanent dwelling-place. The justifications behind the implementation of this program are that (1) the farming methods used by forest wanderers destroy the ecosystem and forest resources; (2) those who roam through the forest have difficulty in obtaining government services and it is hard for the government to control them and (3) they must be “civilized” in the sense that they must be provided with modern education and health services and enabled to become “religious” and settle down in sedentary farming communities.

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<sup>32</sup> Efforts to encourage people to leave densely populated islands like Java, Madura and Bali are more successful if economic growth centers are established in the destination areas which are perceived as “empty” such as Kalimantan, Sulawesi, Irian and Sumatra.

This particular program is viewed by the majority of local community members as a process of “emasulation” of their basic rights.<sup>33</sup>

For the Dayak people the forest is the place where they are born, live, raise children, develop their culture and die. The logical consequence of this is that all their beliefs, their cultural traditions and their behavior (in the relative sense) are always in harmony with conservation of the forest. Behavior of a destructive nature goes against customary law and therefore also destroys their very way of life. The same is true of efforts to “civilize” (which should be interpreted as modernize) the way of life of the Dayak people by, among other things, distancing them from the forest or at least minimizing the intensity of their relationship with the forest, for these efforts are the first steps towards the “annihilation” of the existence and way of life of the Dayaks themselves.

The forest has provided everything for the Dayak people; from it they obtain food (carbohydrate, fat, oil, protein, vitamins and minerals) as well as medicines, materials for shelter, clothing, energy and rituals, and much more. Everything that they take through the exploitation of forest resources is used to ensure the survival of their bio-social and cultural way of life and to meet the needs and maintenance of their economy. In view of the very close relationship between the Dayak people and the forest, it is natural that many of their cultural traditions should be related to the forest and to the utilization of both wood and non-wood forest products, especially in the way they regulate exploitation of those resources. The irony is that public policy concerning forest management, particularly in East Kalimantan, is quite unresponsive and unoriented towards any empowerment of the economy of the local

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<sup>33</sup> It would seem that behind these reasons there is another agenda, namely, to prevent these “isolated ethnic groups” from roaming around and clearing the forest so that the government can allow entrepreneurs to enter and to exploit it. This indicates that the argument that shifting cultivation destroys the forest ecosystem and its resources is not relevant, because logging has proved to be far more destructive. In the past flooding never occurred in the upstream reaches of the Barito and Kahayan Rivers. It is only since the resettlement of the Dayaks and the commencement of logging operations that large floods have inundated the area.



people, in particular that of the Dayaks, who depend upon non-timber forest products.<sup>34</sup>

In general, there is a tendency to neglect both the potential and the current contribution made to the national economy by the local economy, which, as noted, relies heavily on non-wood forest products. More attention is focused on the forestry industry, which is oriented towards only timber and timber products. This neglect is manifest in the various sets of forestry laws and regulations which obstruct the local people's access to forest resources,<sup>35</sup> despite the fact that non-wood forest products make a large economic contribution to the nation, as Zakaria (1994), Muhshi (1994) and Widjono (1993) have shown.<sup>36</sup>

### **Acknowledgment of Community Rights Over Forest Management**

Indonesian forest management policies have been a hotly debated topic over the last three decades. The discussion revolves around the question of who has the greater right to manage the forest and in whose interests forest management should be undertaken. Development planners and decision-makers, who formally place the legality of their authority over forest management in the context of national development, regard the forest as a means to increase economic growth, a producer of foreign exchange and a "land reserve" to accommodate Java's population growth through development programs like transmigration.

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<sup>34</sup> Certain commodities such as swallows' nests and *gaharu* wood have been seized from local communities by the provincial government while monopolistic or *pachtar* commercial rights have been given to large local companies. For greater detail, see clippings collected by Muksin *et al.* (1994).

<sup>35</sup> The Government once initiated a policy concerning the Right to Collect Forest Products, which gave local people the opportunity to utilize the forest products contained within an area of 100 hectares. However, because violations often occurred due to inadequate technical instructions for implementation, the policy was withdrawn as of 1 January 1989. Since then, the question of local people's rights to production forest resources has not been raised again (Suporaharjo, 1994).

<sup>36</sup> The Directorate General of Forest Utilization has stated that until at least 1990 there was a lack of information about non-wood forest products and hence nothing was known of their importance to either the people's or the national economy.

Since the beginning of the development strategies announced by the New Order government in the 1970s, the forestry sector, which controls an area of 144 million hectares, has made a meaningful contribution to the national economy.<sup>37</sup> This sector developed rapidly within approximately two decades, as shown by growth in timber production from only 1.4 million cubic meters in 1960 to around 55 million cubic meters in 1992 and an income of US \$ 7.7 billion in 1994 (*Indonesia Review* No. 154, 1995).

Exploitation of Indonesia's natural forests, which are rich in biodiversity, was originally based upon positive laws valid in Indonesia. The starting point is Article 33 (paragraphs 1, 2 and 3) of the 1945 Constitution, which proclaims that the forest, as a natural asset relevant to the needs of the people, is controlled by the state and is used for the maximum prosperity of the people. In practice, the state grants concession rights to private enterprise using the logging concession system.

The operational foundation for commercial forest management has its source in a number of laws as a basic right, and for that reason difficulties arise whenever criticisms are made of actual forest management. However, the massive forest fires that occurred in September 1997, causing a catastrophe in the form of smoke for neighboring countries, proved clearly that forest management has hitherto functioned in an irresponsible fashion and has always sheltered behind the legality of existing regulations. The legislation which is commonly referred to by forest entrepreneurs and officials from the Department of Forestry and which is directly and indirectly relevant to their interests consists of the following:

1. Statute No. 1 of 1967 concerning Foreign Capital Investment

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<sup>37</sup> These are the official government figures for forest land included in the TGHK zones. It would seem that they have been invented to indicate that forested areas in Indonesia are still so abundant that it is quite "safe" to exploit them. In reality, the data do not truly reflect forest conditions on the ground. Landsat imagery done in 1993 showed that the area then covered by forest was only 92.4 million hectares (Sixth Five Year Plan 1994-5/1998-9; Attachment to Presidential Decree No. 17 of 1994 concerning the Sixth Five Year Development Plan, Book III).

2. Statute No. 6 of 1968 concerning Domestic Capital Investment
3. Statute No. 5 of 1967 concerning the Basic Forestry Law
4. Statute No. 5 of 1960 concerning the Basic Agrarian Law
5. Statute No. 11 of 1967 concerning Mining
6. Statute No. 5 of 1974 concerning Local Government
7. Statute No. 11 of 1974 concerning Irrigation
8. Statute No. 4 of 1982 concerning Basic Provisions for Management of the Environment
9. Statute No. 5 of 1984 concerning Industry
10. Statute No. 5 of 1990 concerning the Conservation of Natural Resources and their Ecosystems
11. Statute No. 5 of 1992 concerning Spatial Planning
12. MPR Decree No. 2 of 1993 for forestry in connection with the Second Twenty-Five Year Development Plan
13. Presidential Decree No. 17 of 1994 concerning development in the field of forestry, as stated more specifically in Chapter 26 of Book 2 in the Attachment to the Presidential Decree
14. Government Regulation No. 33 of 1970 concerning control of the forest by private bodies
15. Government Regulation No. 21 of 1970 concerning Logging Concessions and the Right to Collect Forest Products.

As far as interpretation and implementation of the above legal sources and legislation are concerned, the most dominant participants are logging concession holders and Forestry Department officials. By contrast, the tribal people, who are the ones actually living in the forest, feel unprotected by these laws. At the very least, they feel that they have been marginalized in the interpretation and implementation of the stipulations in the above legislation.

Control and management of Indonesia's forests has always been completely under the authority of the Forestry Department. This authority is based upon the principle of the state's right to control as expressed in Article 33, paragraph 3 of the 1945 Constitution. This formed the foundation of two later pieces of legislation concerning resources, namely, the Basic Agrarian Law (Statute No. 5 of 1960) Article 2 paragraph 1, and the Basic Forestry Law (Statute No. 5 of 1967) Article 5 paragraph 1. The primary objective of the state's right to

control is to achieve the greatest possible prosperity for the people in terms of nationalism, welfare and freedom in society and in the constitutional state.

This understanding of the principle of the state's right to control differs in two respects from the *domein verklaring* principle, which formed the basis of the colonial government's legislation.<sup>38</sup> First, the state's right to control places the state not as owner but rather as the Indonesian people's highest organization, which is given the authority and power to regulate matters as stated in Article 2 paragraph 2 of the 1960 Basic Agrarian Law. This Article gives authority to the state to regulate and organize the allocation, utilization and supply of land as well as relevant legal relations. In connection with control over forests, the state's right to control is referred to in Article 5 paragraph 2 of the 1967 Basic Forestry Law, which says that the state is given the authority to determine and regulate the planning, allocation, supply and utilization of forests in accordance with their function in the provision of benefits to the people, to regulate forest management in its wider sense, to determine and regulate legal relations between individuals or corporate bodies and forests, and also to regulate legal acts concerning forests. In reality, this right was not meant to give monopolistic control of the forest to the government (in this instance the Forestry Department) but was intended only to provide the government with the authority to regulate and harmonize forest management. In this case, therefore, tribal people should also be one of the stake-holders who deserve to be taken into account in management of the forest and allocation of its benefits.

Secondly, the position of the state in civil law is not the same as that of other persons and bodies. The state is the controlling body (see Article 2 paragraph 1 of the Basic Agrarian Law) and as such has the authority to regulate but not to own natural resources (earth, water and air). In

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<sup>38</sup> The principle of *domein*, originally introduced by the Netherlands East Indies government, was expressed in Article 51 I.S. of the 1870 Agrarian Law. This Law was implemented in the *Agrarische Besluit* of 1870, which became well-known for its *domein verklaring* (domein theory), which states: "Without reducing the validity of the second and third stipulations of this law (Clauses 5 and 6 of Article 51 I.S.), the legal basis, which states that all land for which there is no proof of ownership (*eigendom*) rights belongs to the state, is firmly adhered to". For a detailed explanation, see Fauzi (1995).

practice, this authority is often interpreted more narrowly as giving the government the right to grant management rights to any person in return for results which can very rarely be accounted for. In this context, it is actually the government that is charged with direct management of the forest, income from which is to be used for the benefit of the wider community, including tribal people.

As the controlling body with this authority, the state is placed in a position above that of the people as subjects in ordinary civil law. Thus in this context all legal relations or rights held by local communities are often seen as subordinate in position to the rights of the state. From the legal point of view, this should not mean that the rights of local communities can be abolished by the existence of the state's rights. Indeed, local people's rights must be seen in terms of "implementation of the rights of the state". The existence and perpetuity of local people's rights are regarded as being under the protection of the state's right to control. This means that as long as the state's right to control is transferred to local people in the form of a certain right, and as long as that right is not withdrawn, there will be a strong legal relationship between the local people and forest resources. In this case the tribal communities, with their sets of customary laws, have the same rights as other stake-holders in controlling the forest.

The problem which then emerges is the existence of differences and differentiation in position between tribal people and the owners of capital when it comes to interpreting acquisition of rights to control the forest. In implementation and personification the state, which is an abstract concept, is materialized in the form of government bodies and the activities that they carry out. The highest government agency is located in the presidency, which is handled by a president as the person entrusted with a mandate; the president is then assisted in the field of forestry by the Minister for Forestry as the head of the Department of Forestry. Therefore, in the context of regulation of forest resources, personification of the state takes the form of the Department of Forestry. In connection with the legal relationship between the Department of Forestry and forest resources, the question then becomes the form in which the state's right to control is entrusted to the Department of Forestry. In other words, which law forms the foundation of the

Department of Forestry's rights over the forest? An official Department of Forestry publication (Dep. Forestry, 1986) states that:

In the case of forests, this Government Regulation is only a strengthening of authority in the control over land that has been declared to be forest. Prior to this Government Regulation (No. 8 of 1953), the Ministry for Agriculture, in this instance the Forestry Division, had received control over forest land based on Government Regulation No. 20 of 1952.

Meanwhile, Article 2 of Government Regulation No. 8 of 1953 concerning the Control of State Land states that:

The control of state land rests with the Minister for Home Affairs, except where control of such land has already been transferred to a Ministry, Division or Autonomous Area under another law or regulation, at the time when this Government Regulation comes into effect.

The right to manage the forest, which lies within the jurisdiction of the Department of Forestry, has undergone a difference in interpretation concerning the legitimacy that forms its foundation. This is based more on a decision by the Minister for Forestry. The difference in interpretation has caused a difference in choices of mode of production.

A tracing of the history of colonial legislation reveals as relevant Statute No. 110 in the State Gazette (*Staatblad*) of 1911, which was later replaced by Statute No. 430 in the 1940 State Gazette. This regulation takes the form of a decree by the Governor General concerning the Control of Non-movable Objects, Buildings, and other State-owned Structures. In Chapter III of the Gazette it is stipulated that:

Non-movable state-owned objects are considered to be under the control of the Department which, in accordance with its budget, pays for their upkeep.

In view of the fact that during the colonial era, forestry, particularly in Java and Madura, was under the control of a forestry division, it can be

argued that in this Gazette regulation the Department of Forestry has a legal basis on which to assert control of all forested land (as a non-movable object) within state forest zones, for Statutes No. 110 (1911) and No. 430 (1940) are still valid today due to Clause 2 of the Transitional Provisions in the 1945 Constitution.

There are at least three consequences of this right to control. First, the Department of Forestry is free to decide legal relationships and legal acts on forest land, evidence of which lies in the existence of regulations concerning loans of forest land (Decree No. 55/Kpts-II/1994 of the Minister for Forestry) and exchanges of forest land (Letter No.1676/DJ/I/76 of the Director General of Forestry). Secondly, forest land is under the absolute authority of the Department of Forestry, which means that there is no possibility of any other institution, such as the National Land Agency (*Badan Pertanahan Nasional*) regulating it. Thirdly, any form of utilization of forest land without permission from the Department of Forestry can be considered to be a violation of the use of land without permission and hence a criminal action (Law No 51/Prp 1960 concerning Prohibition of the Use of Land Without Permission from the Party Holding Rights or His Representative). The result is that the activities of people who are considered to be forest-clearers (*perambah hutan*) frequently become entrapped in this regulation.<sup>39</sup>

In relation to customary law and the rights of tribal people, forestry legislation (the Basic Forestry Law and government regulations concerning logging concessions and rights to collect forest products) clearly obstructs or at the very least halts the functioning of customary law mechanisms and local people's rights. It can be said that forestry legislation does not reflect the interests of the people. Pragmatic, short-term economic interests have been dominant in the process of compiling this legislation, to the point where forest enterprise has become the key word and main goal, as can be seen in Article 17 of the 1967 Forestry Law and in its clarification which states:

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<sup>39</sup> This explanation is taken from P3AE (1995), except where other sources are given.

Implementation of the rights of a customary law community and its members as well as individual rights to obtain direct or indirect benefits from the forest, which are based on a legal regulation only as long as facts show them to be still in existence, may not interfere with attainment of the objectives of this Law.

The clarification of Article 17 states that, in addition to legislative law, customary law is still practiced in many parts of Indonesia in matters concerning, among other things, forest clearing, the grazing of livestock, the hunting of wild animals and the collection of forest produce. Thus traditional rights are recognized as long as actual facts indicate that they still exist, but implementation of these rights must be in accordance with national interests and may not be in conflict with higher laws and legislation. Because of this, the traditional laws of a local customary-law community may not be invoked to obstruct the implementation of general government plans, for example, by refusing to allow a wide tract of forest to be cleared for a large project or for transmigration purposes. In the same way, it is also not permitted for traditional rights to be used as an excuse by customary-law communities to clear the forest arbitrarily, in the sense of forest communities managing the forest with a special form of management that does not contribute to local regional revenue. One of the arguments used by the government to justify the granting of logging rights to private companies is that the latter can be relatively easily controlled to ensure that they make financial contributions in return for their right to manage and control the forest. As already noted, In 1993, however, the state revenue accruing from the forestry sector, particularly from timber, has in actual fact not been very great (Walhi, 1993).

The terms “tribal community” and “customary law” are often used in forestry legislation, yet there is no regulation which provides a definition of these terms. The existence of traditional communities and customary law, according to Article 3 paragraph 2 of Decision No. 251/Kpts-II/93 of the Minister for Forestry, is determined by the Level II District Head. In relation to forest management rights, however, several local governments have stated more than once that tribal communities no longer exist as they have been integrated into general



society. This vagueness about who and what are meant by tribal people and customary law has been “strengthened” by the existence of a new institution of a centralist nature, namely, the local government institution at village level. This new institution appeared as a consequence of Statute No. 5 of 1979 concerning Local Government, which standardizes the forms of village government institutions as consisting of a village head and a Village Social Organization (LMD). What is more important is that the latter was not established or formed on the foundation of old institutions legitimized by customary law. Hence it is not strange to find that in many regions a degradation has occurred in the roles of customary-law institutions in the social life of the village. In reality, it is these traditional institutions which provide the supports for the smooth implementation of the rights of customary-law communities over forest resources.

If any accusation of arbitrariness is directed at the forest management methods of tribal and indigenous people and more specifically at the methods employed by shifting cultivators, then that accusation is totally without foundation. Research by such anthropologists as Dove (1985), Ngo (1991 and 1992) and Rambo (1979) emphasizes that the management methods employed by tribal and indigenous people show profound awareness of the environment and are ecologically sustainable. The rotating cultivation system is the most effective agricultural method in forested areas and it is used by shifting cultivators with great care and with great attention to all aspects, both technical and non-technical, that this type of agriculture encompasses. Furthermore, shifting cultivation has been going on for centuries and has been shown to cause relatively no destruction of the forest. This system is very different from the methods employed by forestry companies which have exploited the forest on a large scale in the short period of less than half a century, causing very serious damage to the forest. So, who is it really that clears the forest in an arbitrary manner?

Meanwhile, in Government Regulation 21 of 1970 there is an article which very explicitly fails to respect the existence and rights of tribal and indigenous people in connection with access to the forest. Article 6 paragraph 3 of this regulation states that:

In the interests of public safety, the implementation of the people's right to collect forest products is suspended in forest regions which are being worked by logging companies,

This regulation clearly reflects the partiality of those who make regulations (the government) and who in so doing place more importance on the economic dimension than on the dimensions of equitability, democracy and ecology. The rights, needs and abilities of the tribal and indigenous people are neglected in the exploitation and utilization of forest products. This results in an implementation process which does not involve any form of popular participation whatsoever. In its concept of logging concessions the government has always assumed that the forests to which logging rights have been granted are empty of people. Tribal people are not taken into account in any way and so there is no other concept that would be more advantageous to both parties when it comes to forest concessions.

Regulations concerning the spatial layout, method of utilization and allocation of forest land, which have been formulated in the TGHK system, were drawn up without involving all of the interested parties, particularly local communities. The TGHK zones were announced in 1983 based upon Presidential Decree No. 33 of 1970. The president designated the Minister for Agriculture and the Minister for Forestry as the persons with the authority to prepare plans for the utilization of Indonesia's forests. In actual implementation, designation of the TGHK zones is done by the provincial-level Forestry offices, which undertake coordination with other related departments and agencies in the region. The TGHK zones and proposed plans are then presented to the Minister for Forestry for his approval. The hierarchy involved in preparation of the TGHK zones always clashes vertically with the interests of tribal people and horizontally with those of other sectors under the state's administration. For example, the TGHK agreements often conflict with the policies and plans of the National Land Agency or of the mining sector.

The criteria that are used in determining allocations in the TGHK system place more emphasis on the technical considerations of forestry activities such as the slope of the land, the extent of soil erosion and

rainfall intensity. Social considerations, especially for those living in or around the forest, are not included as a criterion. Each criterion, when applied to a certain location, produces a technical value. Based upon these values, an area is classified as (1) free production forest or conversion forest if the total value obtained is  $< 125$ ; (2) limited production forest if total value is 125-174; and (3) protection forest if the value is  $> 175$ .

The main weakness of the TGHK criteria is that this system is very much oriented towards preventing erosion of the land surface but does not take into account the vegetation which covers the soil. The consequence is that there are often anomalies in the field.<sup>40</sup> Another weakness is related to the way in which the areas themselves are determined without any inclusion of the local population. The presence of tribal and indigenous people and their system of land use is totally ignored. The forest is always thought of as an area without human inhabitants. In this case it can be asked what the term "agreed" means in Agreed Forest Utilization (TGHK) zones. For whom and in whose interests are the agreements made? The tribal people begin to be taken into account only when once-forested lands, having been cleared of their timber, start to show signs of serious environmental damage. Tribal communities are then asked to restore the forest to its former state.

In the determination of land for logging concessions, for example, documents concerning customary land rights and local communities are virtually non-existent, while relevant information has never been taken into account. Similarly, there is a complete absence of any mapping of the rights of local communities to use the forest as a area in which to hunt, to gather tree products and to practice swidden agriculture. As a result, in the process of determining TGHK boundaries, there is no inclusion of stipulations about traditional-law borders or the rights of the people to live in and around the forest. In the same way the interests and needs of migrants concerning land are not represented, with the exception of government-sponsored transmigrants. This kind of

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<sup>40</sup> For example, the area around the Riam Kanan reservoir in South Kalimantan is classified as protection forest, yet in fact it is almost 100 per cent *alang-alang* grassland (Potter, 1991:194).

situation is often a cause of conflict between entrepreneurs and government projects on the one hand and the local people on the other. The consequence is that negative impacts on the socio-economic life of the local population are felt more strongly than any positive impacts.

Holders of logging concessions are permitted to work stretches of forest land from 20,000 to one million hectares in area. They must follow the Indonesian Selective Logging (TPI) system, under which trees that are 50 cm in diameter can be felled in every block. Every concession-holder has to divide the area under his control into 35 blocks. In each block at least 25 trees of 35 cm diameter at breast height must be left for regeneration.

The exploitation of East Kalimantan's forest resources, which has been followed by the growth of forest-related industries, has attracted many people to try their luck in this region. The arrival of these migrants through both spontaneous migration and transmigration has placed additional pressure on the forest. Even the needs and interests of the local people are taken into account, the pressures on Kalimantan's forests continue to grow. It is these factors, namely, forest industrialization and all its multiplier effects, which are considered to be the cause of the deterioration that occurred in East Kalimantan's forests during the 1980s. Industrialization, with all its techno-economic-political instruments plus damage to the forest, has constituted a series of "disturbances" to the existence of the region's tribal and indigenous Dayak people. The most serious "disturbance" for these people is the loss of access to forest resources and exclusion from their own living environment.

From the picture presented above, it can be seen that public policy concerning forestry sector management treats the forest as a source of foreign exchange, the aim being national economic development and the prosperity of the people. In actual practice this policy is often in conflict with the interests of forest conservation. On the one hand forest exploitation, which has been expanded through the granting of logging concessions, has succeeded in raising national foreign revenue, in expanding the timber industry, in absorbing labor and in helping regional development. On the other hand, however, the practices

associated with forest exploitation, apart from causing losses in terms of forest conservation, natural assets and income from non-wood forest products, have had a number of serious social and cultural impacts on the communities living in and around the forest.

# **PART** *two*

## **THE BENUAQ PEOPLE IN THE CONTEXT OF CHANGE**

### **Culture and Environment**

The understanding of culture (*kebudayaan*) refers to a process in the life of human beings which is always present physically and socially and is formed through the interaction between people and their natural environment, and with other people. Culture is a human creation and reflects accumulated experiences in facing the physical and social environment.

In terms of possibilistic culture, the environment provides both possibilities and limits in the formation of a certain culture as a result of the process of human adaptation to the natural and social environments. This possibilistic view is a reaction to the deterministic view which states that the environment is the determinate of human culture. However, the possibilistic and deterministic views are both static and do not reveal the interaction and dynamics between human beings and their natural environment. Because of this, a concept has emerged which sees the relationship between humans and their environment as circular in nature; human behavior (culture) can change an environment, while this changed environment requires a process of adaptation which can be constantly renewed so that human beings can continue to survive and go on with their lives in the environment where they live.

The process whereby humans learn to adjust to their environment is called adaptation. Adaptation can be interpreted in various ways. In a bio-socio-cultural context adaptation can be understood as having the characteristics of the anatomical, psychological and behavior patterns which an organism has and which support that organism's survival in a specific environmental condition where the organism in question is generally found (Havilland, 1988:5). If defined in physical terms, adaptation also refers to a process of two-way interaction between changes in the environment and organisms. Therefore, in the understanding of adaptation, at least two elements are involved: (1) the organism and (2) the environment of that organism. The organism exists or is expressed as a member of a population and, like the population itself, also needs to be flexible in order to adapt to the variables and changes in its environment (ibid: 6-7). On a cultural level, there is a system of interaction between the organism and the environment; in this system variations can be found in skills, knowledge and personality in response to the changes taking place in the environment.

In a more operational sense adaptation can be seen as a form of responsive behavior by human beings towards changes in their environment, which enables them to design certain systems for their actions or behavior in order to adapt themselves to existing situations and conditions. This behavior is directed at prosperity after passing through a certain situation and then establishing a strategy and certain decisions to take action in the face of the situations which they will encounter.

The unit of analysis in the understanding of this adaptation strategy can take the form of the individual, the social group or the community itself. In this context the role of culture is to provide a facility for the emergence of various strategies which can be developed further. Basically, the strategy of adaptation is a process of interaction between people and the ecosystem or nature. As a process adaptation implies a continuous system of interaction between people and other people and also between people and their ecosystem. Thus, in seeking to understand this system of interaction, it is essential to know the cultural patterns which are formed by the system, which is often called cultural ecology. In Julian Steward's theoretical formulation, cited in (Havilland,

1988:11), there are three procedures for the understanding of cultural ecology: (1) the relationship between the technology of a culture and the environment, (2) the patterns of behavior which relate to technology in culture and (3) the relationship of these behavior patterns to other elements in the relevant cultural system.

In reality, adaptation strategies are very close to certain cultural characteristics that relate to the ways in which a society seeks its livelihood. These include a knowledge of resources and of the production techniques of resources, including reproduction. Adaptation strategies would appear to have a central position in the study of interactions between people and their ecosystem. Using this concept, the methods that human beings employ to survive, to continue living and to develop themselves and their groups in a certain environment, can be studied. The focus of attention in this connection is the dynamics of the relationship between the population, the social organization and the culture of the community in question within the environment in which it lives. Hence the present study focuses primarily on demographic aspects and on the physical and social environments.<sup>41</sup>

Any discussion of the question of the community's interaction with the forest is related to that of the interaction between the social system and the ecosystem, because the forest forms a particular ecosystem with its own specific micro climate, soil, flora and fauna. Communities living around the forest also have certain systems of behavior relating to management of the forest resources surrounding them.

The most frequently studied problem concerning South-east Asia's forests is that of the rain forest and its relationship with shifting cultivation. A number of classic works concerning this type of

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<sup>41</sup> Demographic aspects take in birth rates, mortality and migration, both internal and external, as well as the institutions, norms and communication patterns established to ensure the wholeness of a community or to maintain the relations of community production and reproduction. The physical environment embraces soil, water, climate, flora and fauna, and other elements of the ecosystem. The social environment covers the various systems of interaction and cultural institutions such as ideology, religion, economy, technology and socio-political organization in a community.



cultivation endeavor to explain how “the culture of shifting cultivators” relates to available resources. In the case of Indonesia, this problem has become an important development issue because of the friction between the timber industry and the rights of the communities of shifting cultivators who live in and around the forest. From the study by Dove (1988), Zakaria (1994) concludes that the shifting cultivation system is a form of community wisdom in utilization of the ecological limitations of the forest and should be given the same rights as other farming systems in Indonesia.

In the study of this cultivation system a basic understanding of the local cultivator’s knowledge of his natural environment is needed (ethno-ecology). An understanding of local ecology is then brought together with economic interests, in order to find a way to solve problems concerning the forest.

### **The Ethnography of the Benuaq People**

This section describes the way of life or ethnography of the Benuaq people, including their identity and distribution, their belief system and views of their environment, in particular forest and land, their patterns of control over and ownership of resources and their system of social organization.

#### **Identification**

The Benuaq Dayak people are one of the sub-groups of the Luangan Dayak, while the Luangan Dayak people themselves constitute one of the groups that have in common Ot Danum, that is, the Barito language family which originates inland and upstream of the Barito River in Central Kalimantan. The Luangan Dayak group itself consists of 14 sub-groups which are spread over East Kalimantan (six sub-groups including the Benuaq), Central Kalimantan (seven sub-groups), and South Kalimantan (one sub group) (Widjono, 1995).

More specifically, the Benuaq people are divided into eight groups, all located in the interior of the Mahakam River area. The eight groups include the Ohong Benuaq in the subdistrict of Jempang, the Bongan Benuaq in the subdistrict of Bongan and the Kenohan Benuaq in the subdistrict of Kenohan. Those living around the subdistricts of Barong Tongkok, Damai, Muara Lawa and Muara Pahu are known as the Idaatn Benuaq, the Daya Benuaq, the Pahu Benuaq, the Tengah Benuaq and the Lawa Benuaq. The naming of the groups is based on their location, that is, the names of the rivers, mountains or lakes where they live. Even though they live in different places, the thing that links them as Benuaq is the use of the same language as well as the same beliefs and mythology and the feeling that they share the same ancestry.

In the view of the Benuaq themselves, the area in which they live is relatively wide, even stretching as far as Central Kalimantan. The borders of this area are always marked by permanent natural landmarks which anyone can easily remember. Through the socialization process the locations of the borders are passed on to the descendants of the Benuaq in the form of the following verse.<sup>42</sup>

*Ow ah, Enceeq kedok bara kedok; Enceeq kedow bara kedow,  
Kengolaq siraaq empat, Oit tapak biayaq, Oit engkokng baluwatn,  
Maka eso olaaq Lelotukng, Depaq juju la Bumut Batu,  
Manan ete Apar Kalaakng, Ngolakng ete Salewakng,  
Jumlah ete Nabah Kikngkooq,  
Lalo jaras pasoaq ngejuekng Saikng Padakng,  
Ngeluoh Burungayaq ngejunjukng Alur Malukng,  
Tepakng lalo Bilas, Engkolakng lalu Buukng Mantalimo,  
Oraay ewah Bateekng Kesau, Pelit wakai Belayatn,  
Patekng kayo Belanutn palot Saikng Kirau Langit,  
Poong morikng Tunau Karekng mapakng la Apar Kalaakng*

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<sup>42</sup> This verse was always recited as if by rote by a woman named Tempaju Jietn when any of her possessions fell to the floor. This was done each time something fell. Her purpose was that all her grandchildren would know and understand the boundaries of the land owned by the Benuaq people who were descended from Ningkaholo. The verse was always recited because in the past the Benuaq were not familiar with writing. One of the available means of socialization was oral tradition.

The meaning of the verse goes something like this:

*“Hey children, remember the land bequeathed to you by your ancestors. That land begins to the east of the village of Dasak and the capital Muara Pahu, or to be precise, in the area known as Apar Kalaakng. Then, to the north-east is Oni Le Pok, which forms a border with the Muara Pahu people. To the north, the border is marked by the Nabah River which forms the border with the Tunjung Dayak people in the Melak district. Then the boundary shifts to the north-west and lies adjacent to the Bahau Dayak people in Long Iram sub-district at Mount Burungayaq, which is the source of the Nyuatn River. There you will find two rivers, the Nyuatan, which flows to the east, and the Laheu, which flows towards Central Kalimantan. From that direction, continue to follow the Alur Malukng to the south, keeping to the mountain ridges.*

*The western border is at the head of the Danum or Ut Danum River, which is the border with the Ut Murukng Dayak people of the Pat Muikng area in Central Kalimantan. In the south-west the Ningkaholo Benuaq area borders the land of the Bekumpay, the Akey and the Dusun groups at the head of the Pari River. From there, continue to follow the Buukng Mantalimo Ewas Batakng Kesau area. On the south the border is located at the Saikng (Mountain) Kirau Langit and the Karekng rapids upstream in the Lawa River, which forms a border with the Bentian people. From the Karekng rapids the border meets again at Apar Kalaakng to the east.”*

Today the Benuaq people are the biggest Dayak group in East Kalimantan. They inhabit several inland areas which in administrative terms take in nine sub-districts and 60 villages and have a population of around 26,000 people.

## **Religion**

At a quick glance it would seem that the religious practices of the Dayak people are many and varied. However, if we delve more deeply, we find a similarity in the basic ideas of their religion. The differences that exist lie only in detail and emphasis. For example, there are groups which place more emphasis on burial ceremonies, while others place emphasis

on *hudoq* (mask rites). Other groups stress agricultural rites, while there are some that in the past used to focus on headhunting rites. These basic religious similarities, it would seem, are strongly influenced by a way of life that relies on shifting cultivation in an ecological environment that is the same, namely, the tropical rain forest.

In principle, the whole Dayak community believes in the existence of a “single and supreme power (god)” who created nature and all that is in it. However, this in itself must not be seen as implying a monotheistic religion. The position, role and naming of this “supreme power” differs with the interests and character of each Dayak group. There is often also a concept of duality in the supernatural power. The single power is sometimes manifest in two aspects that have different names and appear in different qualities, for example, masculine and feminine, the world above and the world below, and so on. All of this is reflected in the various myths and legends of the whole Dayak community.

Belief in myths has an important place in the world of the Benuaq and forms an integral part of their lives. Their attitudes to and views of life are based upon these beliefs. They believe that apart from human beings and other visible creatures, there are supernatural creatures that cannot be seen. These invisible creatures live in the universe, but in a different environment from that of humans and other visible creatures. Humans and visible creatures live in a transitory physical environment, while invisible creatures live in an eternal supernatural place. In this connection the Benuaq believe in the existence of three worlds other than the transient world of human beings: (1) the Land Above the Sky, (2) the Land Below the Earth and (3) the Land of Spirits.

The Land Above the Sky is where the gods, ancestors and other high-ranking supernatural creatures reside. This land is believed to consist of seven levels, each ruled by a certain god. The highest god resides at the highest level of the sky and is known as *Perejadiq Bantikng Langit Senjietn Perintah Lahtala Juus Tuhaq*. It is this god who created the whole universe and its creatures. The first sky is inhabited by gods and certain birds concerned with prophecies or signs of things to come for humans. The second sky is controlled by the wind and moon god, while the third sky is controlled by gods who organize the tides, boats, fibres

and leaves, and animals. The fourth and fifth skies are filled with intermediary gods, while the sixth sky is inhabited by the gods of fruits, caterpillars, mountains and hills, as well as the god who created water jars and earthenware jugs.

The Land Below the Earth is inhabited by invisible creatures with the same status as gods. One of the best-known gods in this land is *Juwata*, who controls water. The respect accorded to this god can be seen in the *Malabuh Balai* ceremony. The Land of Spirits, which is called *Lewu Liau* by the Benuaq, is a place full of grandeur and luxury as well as joy (heaven). This place is believed to lie between the sixth and seventh skies, close to where the highest god resides. The series of traditional ceremonies that must be performed to accompany the soul to this place illustrates the concept of “the hereafter” as the final resting place for the souls of the departed in the journey of human life. This indicates that the Benuaq believe in two spiritual elements found in human beings, that is, the element linked to the physical aspect which experiences death, and the element linked to eternity even though the body has died. The soul, which lives forever, must return to the hereafter after certain rites have been performed. The hereafter itself is different for every Dayak group. Usually places considered to be the hereafter are closely connected to myths regarding the origin of life.

The Benuaq also believe in a certain relationship between the living and those who have already died. Through certain ceremonies they can communicate with, summon or invite their ancestors to be present or “help” in certain activities. Oral traditions are used as media to convey various views on life, relations between the living and dead and life after death. These oral traditions are also used to relate the story of the origin of mankind and of spirits which live in certain places like forests, mountains, rivers, the world above and the world below.

To maintain a good relationship with this supernatural world, all sorts of offerings are given. Various kinds of amulets and magical spells are used for the same purpose. Even so, the Dayak do not fully rely on the “generosity” of supernatural forces. They also believe in their own strengths and abilities and use all the capacities that they possess to help them through life. They try to pit their own strength, both physical and

psychological, against these invisible forces. For example, they will not clear agricultural land just based on “supernatural” instruction. They study all the physical and microclimatic aspects of the proposed land till they feel sure that the soil is fertile and able to produce a plentiful crop of rice. Similarly, when they go hunting and enter the forest, everything is calculated rationally and empirically. For this reason it would seem that the religion of the Dayaks is not just a collection of superstitions but is rather integrated with empirical abilities. Therefore it is in no way a fatalistic religion; on the contrary, it is extremely optimistic in nature.<sup>43</sup>

For the Benuaq people, the meaning of life is not exclusively located in reality or material objectivity as understood by “modern” people but lies in a cosmological balance. This balance will always be maintained if the relationship of humans with the macrocosm remains harmonious and compatible. Each part of the cosmos, including human beings and other creatures, has a responsibility in looking after the balance. The Benuaq believe that there are extremely close relationships between the environment, human beings and the “supreme power”. The reciprocal relationships between these three elements, which can be illustrated in a triangle, are synergised by traditional ancestral inheritances.

This relationship also explains why the Dayak people have never had the courage to exploit the forest and its contents by means of timber extraction. Rotational or shifting cultivation<sup>44</sup> is also influenced by this

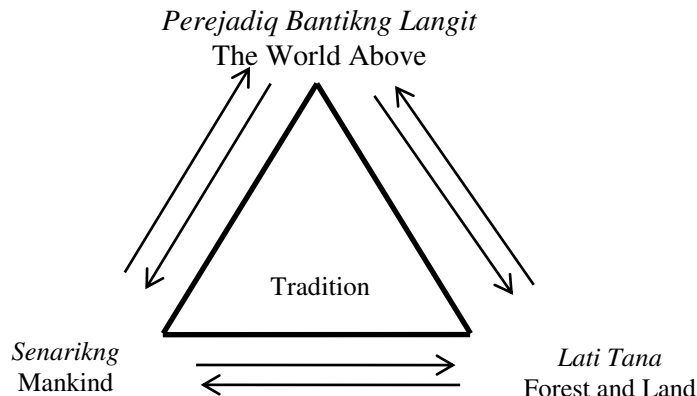
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<sup>43</sup> Ultimately the destruction of the traditional habitat, especially of tropical forest, harms the Dayak not only materially but also spiritually and psychologically. It is not just a material way of life that disappears; all aspects related to culture, including religion which gives identity and self-confidence, disappear too. A certain process has occurred and is occurring with the arrival of major religions, particularly Islam and Christianity, which forbid certain rites and beliefs that are not in accordance with the new teachings. However, an even bigger process is that of the forestry industry, which leads to closure of the people’s access to the forest and a decline in forest quality and quantity.

<sup>44</sup> Rotational cultivation is still called shifting cultivation. This term is painful for the Dayak, because it gives the impression that they are “wild” and “nomadic” people. “If we were nomadic, we would certainly have cultivated as far as West Kalimantan or Sarawak,” say Dayak leaders from East Kalimantan.

belief system. The Dayak do not take more forest products than they need.

Diagram 1  
The relationships between mankind, *Lati-Tana* and The World Above



Source: Modified from Nuripto and Ginting (1996).

### ***Lati Tana: An integrated view of space and resources***

For the Dayak community, forest land is a part of their environment and as such cannot be separated from their way of life. It has been a part of their life history for generations and thus forms a part in the totality of their lives. Because of this, their traditional knowledge teaches a concept concerning the wise and perpetual management of the forest so that utilization and maintenance are sustainable.

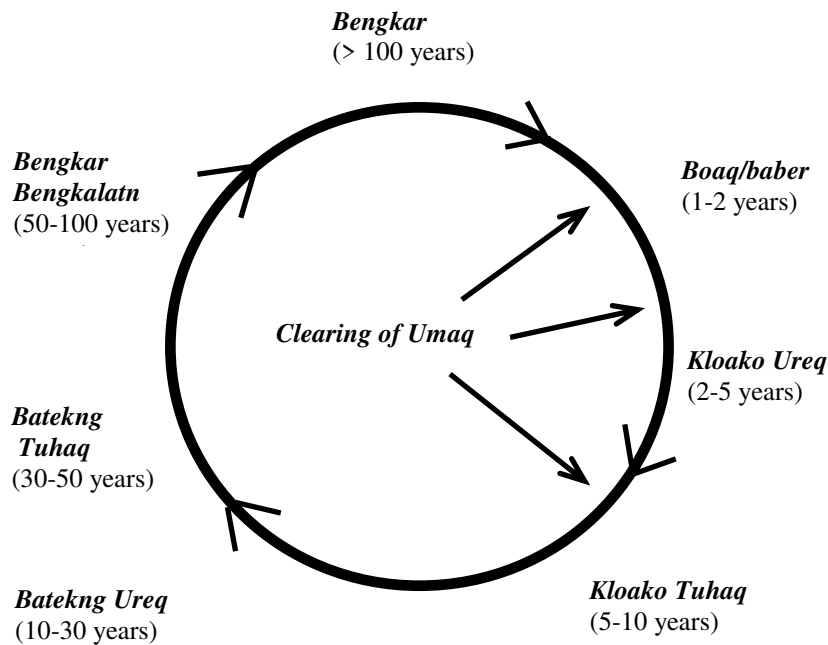
Natural resources and the environment surrounding the forest are not seen by the Dayaks as objects for exploitation but rather as subjects for human adaptation, a view that is deeply rooted in the traditions of their lives in accordance with the cosmos. With this kind of wise understanding, the utilization of natural resources is always accompanied by an awareness of conservation, for destruction of the

environment, particularly of the forest, will be fatal for the survival of their way of life.

The monumental manifestation of the views of the Dayak people in terms of forest organization, maintenance and utilization is most visible in the traditions of the Benuaq, Bentian and Tunjung Dayak in classifying the forest. A knowledge of classification of forest areas is found not only among the Benuaq and Bentian but also among the Dayak ethnic group as a whole though there are various versions of references to it. This classification directly reveals the stages of forest succession known to the Benuaq and Bentian. Knowledge of forest classification helps the Benuaq and Bentian in making decisions about forest management and it also determines the stages of management to be undertaken. This proves that the Benuaq have applied the principles of permanent forest management for the future, because they have already calculated the spatial lay-out for long-term allocation of land. It shows that Benuaq and Bentian people cannot just clear land as they please, even for cultivation purposes. The classification points to a long cycle of tropical forest succession. Based upon the wisdom of their ancestors, the Benuaq and Bentian people classify the forest into the following eight stages based upon the extent of forest succession.



Diagram 2  
Forest classification and cycle according to the Benuaq



Source: Modified from Nuripto and Ginting (1996).

*Bengkar* or the great forest is forest land which has never been touched or cleared by humans. This region is full of trees which are two to three meters in diameter and hundreds of years old. The huge trees grow so evenly that the vegetation is very thick; indeed, the rays of the sun find it hard to penetrate the forest cover. This region is guarded as customary-law forest which is conserved as a source of food and medicine, animals for hunting, palm-cabbages, fruits and honey. Because this forest is considered collective property, individuals cannot clear it without the knowledge and permission of customary-law institutions and members of other communities.

*Bengkar bengkalatn* has the same kind of vegetation as *bengkar*. The difference is that forest at the *bengkar bengkalatn* stage of succession

has been cleared at some time and used as *simpukng bua* (fruit gardens) or *kebotn uwe* (rattan gardens). Giant stands of trees are also found in this type of forest, though it is not as dense as *bengkar*. The vegetation which dominates this kind of forest is of the commercial type like *meranti* (*Shorea* sp.), *tengkawang* (*Shorea* sp.) and *benggeris* (*Koompassia* sp.) trees. *Bengkar* and *bengkar bengkalatn* constitute a traditional-law region that is protected as a reserve economic area.

*Batekng tuhaq*, as a succession type, is characterized by the presence of trees with a diameter of between 30 and 50 cm. The age of this type of forest is estimated at around 30 to 50 years, while *batekng uraq* is the stage of forest succession with trees aged between 10 and 30 years.

*Kloako tuhaq* is characterized by pioneer plant types such as the *Makaranga* (*Macaranga* sp.), *palawan* (*Lophopetalum pollidium*) and other species with diameters of 20 to 30 cm. *Kloako ureq* is almost the same type of forest as *kelewako tuhaq*, but can be differentiated by its large stands of trees and the presence of several species of the *melastomataceae* family. At this stage it is possible to see whether the land should be left fallow temporarily or should be allocated as *simpukng*.

*Boak* or *babar* is the first succession stage after cultivation. The dominant vegetation type is of the *melastomataceae* family and is aged between one and three years. Several studies report that at this stage, at least 200 plant species can be found. Areas of land at the *kloako* and *batekng* stages of succession are those frequently cleared for agricultural purposes because fertility has returned to the original level. The relatively low vegetation also makes these areas easy to clear using traditional instruments like short swords or machetes and axes.

According to the Benuaq people, all sets of human behavior are related to the land and forest, that is, the *lati tana*, which is their most valuable asset. The saying that there is no Benuaq without forest is not just hollow talk. The consequence is that all beliefs, culture and behavior are in accordance with and aimed at preserving the *lati tana*. Anything that interferes with forest conservation is seen as a violation of customary law. All rules and regulations refer to traditional customary law, which

is formally enforced by the village headman because he is the person who knows the “limits” in his community. The term “limits” has a very wide meaning, including as it does the limits of what is good behavior and what is bad, what is right and what is wrong, and what violates and what does not. The term can also refer to the limits of the area controlled by and under the authority of an individual. The members of the community must know their ancestral family tree, as it is from this that everything is measured, including control over customary land. It is through family trees that they know and arrange the limits and structure of their environment.

Each group in the Benuaq community controls an area which is bordered by rivers and mountains. The river forms borders to the upstream area and the mouth. According to law, the area around the river mouth may be cleared for such purposes as cultivation or preparation of a garden, whereas the upstream area may not be cleared at all but can be used for hunting and seeking other various needs.<sup>45</sup> While the customary land itself is not cared for specifically, in the sense that people come and collect its products for daily needs, the Benuaq can be said to have tended the area. Although not cared for specifically, each area which is really an area of customary-law land always has signs of alliances and authority, such as a spear, sword, white plate or even a human head referred to as *batakng ulutn*.<sup>46</sup> According to customary law, the legality of authority over an area must be backed up by the acknowledgment and testimony of persons who know about the matter, together with proof of ownership and control. In function, these objects, explanations and witnesses are similar to today’s certificates.

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<sup>45</sup> Ecologically, forests located in the upper reaches of rivers form an area where water is captured and absorbed. The destruction of forests in upstream areas interferes with water absorption. Hence, according to customary law, these areas may not be disturbed or cleared. Various myths and beliefs emphasize upstream forests and this stipulation is recognized by each member of society. However, these days it no longer has any meaning because upstream and downstream areas alike have been cleared by logging companies.

<sup>46</sup> *Batakng ulutn* is the head of a person who has been decapitated because of depraved behavior, not respecting customary law or doing whatever he liked. There are no demands whatsoever over the death of this kind of person.

In the eyes of the Benuaq, an area of *lati tana*, which forms the area of community activities, includes the following:

A *lou* or long house, which is the center of social activity and is usually inhabited by a family group which still acknowledges a certain ancestral line. The *lou* consists of rooms which are inhabited by one or two families, that is, the parents and the family of a recently married child.

*Belay* or individual houses which are located around the *lou*. Another term for these individual houses, which function as kitchens and/or places for storing food, is *jayukng*.

The *lubakng*, which is the cemetery both for ancestors and for the whole community. It is usually located in the vicinity of the *lou*. Several types of graves can be found in the cemetery, such as the *lubakng* or graves dug in the ground for people who have died recently. There is also the *tempelaq*, which is a carved wooden box supported by two beams of wood and intended to hold a skeleton, and the *lungun*, which is a coffin for corpses not yet interred or covered with earth.

*Umaq*, or fields for cultivation purposes, which include areas around the *lou* and those farther afield. In the *umaq*, *belay* can also be found, that is, small huts in which people live for as long as they are working in the fields and which are used as places to rest and guard the crop from birds and animals. There is also the *belay serek* or temporary barn in which rice is stored before it is transported back to the village.

*Simpukng*, which is the name for areas or enclaves reserved for special purposes, such as hunting and gathering and the safeguarding of sacred areas. For example, the *simpukng munan* is a former cultivated area which has been planted with fruit trees and other perennials. *Simpukng ramuuq* is a stretch of forest from which housing materials and other building materials may be taken. *Simpukng umaq tautn* is the area of forest set aside for agriculture, while *simpukng rahatn* is forest reserved only for the hunting of animals or the gathering of plants.<sup>47</sup> *Tempelaq*

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<sup>47</sup> This area is often known as *ewai tuelatn*, which is an area of forest not specifically cared for but reserved as a place for collecting forest products, hunting and gathering

areas, water sources and even other places can become *simpukng* if they are considered sacred or serving a specific purpose.<sup>48</sup>

The *kebotn dukuh*, which is an area which has been made into a garden for rattan, rubber, vegetables or other plants. Various types of plants are grown in these gardens from which the Benuaq people can obtain certain things needed for survival, as well as from the forest and rivers. The Benuaq understanding of gardens is different from the definition of gardens used by logging companies, which usually regard a garden as consisting of only one type of tree.

*Kampukng*, is a group of houses in the *umaq* area, situated far from the village or *lou*. It is a temporary living place for the duration of cultivation activities in the area.

*Sophan* or sacred areas, which are places believed to be inhabited by a tutelary spirit and so are rarely visited. These areas may be stretches of untouched forest marked by huge trees, water sources, the headwaters of a river, old cemeteries or places with a disused *lou*.

All *lati tana* areas, which consist of the elements described above, are part of a circular arena known as *benua*, that is, the region under customary law in which a Benuaq community has lived for generations. Each resident of a *benua* always knows its borders, which are usually clearly marked. Violations of borders are considered to be violations against customary law and therefore punishable under that law.

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medicinal plants. *Ewai* means to go back and forth, while *tuelatn* is something obtained from *ngewai* produce for various needs. *Rahatn* means to stay over because one day is not enough for *ngewai*, especially if the place is far away and there is much to be collected.

<sup>48</sup> Old *simpukng* areas often form a forest structure, a fact that is often not understood by logging companies and hence they often become a source of conflict.

## **Social Organization**

### *Local leadership*

The Benuaq people are widely distributed in more than sixty villages and hundreds of communities in the Mahakam. Identification of a Benuaq group begins with the name 'Benuaq' which is followed in their own language by the name of the location where they live. For example, the Benuaq who live along the Kedang Pahu River are known as the Pahu Benuaq, and the Benuaq who live upstream along the Idaatn River are known as the Idaatn Benuaq.

Long ago, the positions of highest power were held by the reigning persons or elders in a certain river system or segment. Their positions of power were based on physical and mental strength as well as on genealogy, which was supported by alliances with influential families in other river valleys. The highest elder was known as the primary chief or *mantiiq*. Usually, all *mantiiq* or primary chiefs knew each other and formed alliances through marriage. In carrying out his tasks, the *mantiiq* is assisted by *penggapit penggawa*, *manookng*, *pengeraq* or *penggadikng*, who are "officials" who can be ordered to carry messages to other *mantiiq* or to the community. In the making of big decisions, the primary chief of customary law can summon the customary leaders of villages within his area of influence.

A primary chief rules over a number of villages, which usually have a large long house and which are headed by a village headman. These village leaders are the highest decision-makers in the problems that arise. On the whole, they are generally strong, authoritative figures, but not one of them rules based upon his own wishes. Each decision concerning the various problems that they face in common, related both to social tasks and to sanctions against violators of customary law, if made in the name of the village, is based on discussions among all adult males (if necessary, with adult females too). Even so, in principle every resident, without exception, may attend these meetings. If there is a major decision to be made, usually involving problems or disputes between villages, the village headman can consult or bring the problem

to the primary chief. Together they will come to a decision or solve the problem at hand.

Traditionally village headmen, including both the primary chief and the village leaders, are expected to keep their positions for as long as they live. For this reason, they have the right to obtain voluntary labor for their fields from villagers under their rule. In principle, the position of headman is inherited by a son or another male relative. This does not mean that the position of village headman must unconditionally be held by a male. In Benuaq folklore there is a female *mantiiq* who was so wise and powerful in magic that she was respected by the whole community.

Nowadays, customary-law leaders and chiefs are often the subject, and object too, of the power of formal officials; indeed, there is a tendency for them to be co-opted by the state bureaucracy. They can even be described as unpaid “public servants”. These days inauguration of a primary headman or a village headman is done through a Decree from the District Head of Kutai. Indeed, there are several customary-law chiefs who have not been chosen directly by the community but have been proposed by the subdistrict head and then appointed by the district head. These chiefs are often faced with various problematic and controversial demands from their “superiors”, that is, the subdistrict and district heads. Meanwhile, bureaucratic tasks tend to increase at the same time as many of their special rights, in the context of tribal society, begin to decline. Because the village headman is too busy attending to bureaucratic affairs, for example, problems of customary law and society may be so neglected that he might find it difficult to get people willing to work his fields. Often the village headman takes notice only if there are violations of customary law which result in the imposition of fines; meanwhile his obligation to protect the community is neglected.

#### *Organization within the village*

Traditionally, the Benuaq people live in villages which have long houses. Villages can consist of a number of long houses. In this respect they differ from Iban villages, for example, which have only one long house in each village. If there is more than one group of Benuaq in a village, each group will have several long houses of its own. Despite

this, there is a main long house which is the center of orientation for the whole community because it is the residence of the village headman, who is usually older and more important. This can be seen, for example, in the Lambing long house structure, which consists of five long houses, that is, *lamin* or *lou* Tolan, Berunuk, Nunuk, Raru and Muara Mating. Of the five *lamin*, *lamin* Tolan is the main long house because the primary chief lives there and because it is physically the largest and oldest. Meanwhile, the *lou Benung*, which is the center of orientation for the Benuaq of the Idaatn region, can be found in Benung.

The village functions as a meeting place where people determine tasks in organization of the agricultural cycle in the context of ritual ceremonies and other traditional celebrations. Each stage of the agricultural cycle is always marked by a ritual ceremony which is led by a person chosen by the primary chief. During times of ritual ceremonies no housework may be done until the whole community has decided that the ceremony has finished.

#### *The long house (lou)*

As noted above, Benuaq villages can have more than one long house. These long houses consist of at least ten sections or *lamin*, each of which constitutes an individual unit of production and consumption. Physically, they belong to one long house but are separated and have their own doors which open on to a collectively owned verandah. This verandah connects one *lamin* to another and is also a place for formal and informal meetings among those living in the long house. The space within a *lamin* is divided further into a number of rooms. Each *lamin* in a long house consists of one large room in which can be found a fireplace, a place to keep firewood and a place to store and prepare food. Other rooms in the *lamin* are left open for use in various family activities and to receive guests.

Each household (*lamin*) may remove itself from the long house with the agreement of all members or the elder of the long house. Such is also the case for those wishing to join a long house; agreement is required from the elder of the long house after a discussion is held involving all members of the relevant long house. If a household is going to leave a



long house, although this has never been recommended, they may take with them all building materials from their *lamin*, including the roof, with the exception of the main supporting beams. Other materials which may not be removed are the floor and the ceiling over the verandah in front of the room which they are leaving. If the household then merges with another long house, they construct a hut close by the long house or else attached to a corner of the existing long house. They will then build their own access to the main room in the long house and construct a connecting verandah to the existing one.

A person's membership as a resident of a long house is maintained even without his physical presence and irrespective of wherever he may go. Although separated, each household sees itself and is regarded by others as a member of a certain long house. This membership can be based on genealogy or marriage. Membership based on ancestry is stronger than membership through marriage.<sup>49</sup>

#### *The household (lamin)*

The core unit in Benuaq social organization is a household or room, which in their language is called *lamin*. The *lamin* is both a physical building and the people living in it. A *lamin* has a varied number of members. The *lamin* of a village headman and other esteemed members tends to have more members than that of ordinary people. In the case of highly regarded families and ordinary persons alike, a *lamin* can be inhabited by a nuclear family,<sup>50</sup> a stem family<sup>51</sup> or a joint family.<sup>52</sup>

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<sup>49</sup> Recently there have been many conflicts in control of productive assets (land) relating to membership of an individual in a long house because of marriage. Due to multiple membership, even though membership through marriage is not very strong, an individual will often transfer or sell his rights to another person, especially when certain companies appear. They believe that because they still have rights in their own family, the rights that they obtain through marriage are better transferred or sold.

<sup>50</sup> A nuclear family is a family consisting of a husband and wife and their children, both biological or adopted, who have not yet married.

<sup>51</sup> A stem or ancestral family is a family unit which consists of one couple or one person from a husband-wife couple in each of at least two successive generations, with the addition of the unmarried children of each couple.

Almost everyone dreams of having a large *lamin* with many members, since this in itself brings prestige to the head of the household. Big families are very much hoped for, because they mean more labor for the fields and other community work.

The *lamin* forms its own production and consumption unit. Each married couple is expected to make its own rice field (*umaq*) in accordance with its needs and the needs of its children. Besides this, each adult household member is expected to clear his own field or at least a cassava garden. Thus, each *lamin* will have or control a number of fields every year. The produce of these fields is put aside in collective storage and then eaten collectively.

The *lamin* is also the place for protection of land ownership (and control) rights within the village borders. The principle observed in affirmation of rights over land is based upon the concept that whoever first cleared the primary forest has the right to that land. If the person who first cleared the land has left his original *lamin*, then the household (*lamin*) can take over or keep control of the land. The person who has left still has rights over the land but he must report back to the head of the *lamin* if he wishes to work the land again. A split in a *lamin* does not result in the emergence of two households with equal rights over land. The original *lamin* or the birthplace *lamin* has main control over the cleared land. The offspring of the original *lamin*, provided that they can use land rights based upon secondary rights, can acquire primary rights by clearing primary forest.

#### *Cooperative work groups*

Responsibility for the cultivation of rice fields lies fully with each nuclear family, with both men and women contributing their labor. At certain stages an individual can lend his own labor to another group with more members than the nuclear family, or else several nuclear families can work together in the field. At this point they form a cooperative labor group. The stages in agriculture that often require

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<sup>52</sup> A joint family is a family unit consisting of more than one husband-wife couple in one generation. Usually they have sibling ties, or sometimes they can be cousins.

cooperative activity are the felling and clearing of forest, planting and harvesting. This form of cooperation, which is called *royong*, is really is a form of reciprocal labor exchange. The groups are formed specifically at the time of felling or planting and are not used in the subsequent stages of cultivation. Membership is usually based on familial relations, friendship and/or proximity to fields. The groups are usually small, consisting generally of some six to eight people. The “host” or person whose land is being worked is responsible for providing food for his friends, at least while they are working. If possible, he also provides the evening meal, which is usually followed by palm wine.<sup>53</sup> These days, however, the drinking of palm wine is rare.

Other cooperative groups are formed at harvest time, when people cut the rice together. Workers receive a wage in the form of rice in the ratio of 7:3, which means that if there are ten shares, three are given to the workers while seven belong to the owner. Other cooperative groups are based on family ties. Usually workers in these groups do not receive a direct payment but work together in the common interest. Another form of cooperation involves work done for widows or widowers with small children. The latter are not asked to make any payment at all and the work that is done is given more in the form of help.

#### *Social stratification*

It would seem that nowadays social class is not an issue in the life of the Benuaq. In the past there were indeed groups that were considered aristocrats and had the title of *awang* or *mantiq*. The lowest group in society was known as *ripatn* or slaves. People who were disliked because of immoral behavior to the point where they became the dregs of society were known as *batakng ulutn*. The *ripatn* group emerged as a result of headhunting practices and the subjugation of other groups. People known as *batakng ulutn* were allowed to be killed and their heads could be used to indicate control of an area. Those responsible for these murders would not be prosecuted by anyone, including the

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<sup>53</sup> In Kasepuhan and certain farming communities in Sukabumi and South Banten, there is a similar institution called *rereongan*, which is usually found in heavy jobs like land clearing (*nyacar*).

victim's family. Under today's conditions, however, the *ripatn* and *batakng ulutn* groups no longer exist. Today's social stratification is based more on material possessions and level of education, which are now the means for upward social mobility. There is also another possibility for social mobility within Benuaq society, the means generally being through interclass marriage. However, the concept of the ideal marriage is one in which every person marries within his class so that there is no mixing. This social mobility is not done in the interests of the individual but for their descendants in days to come.

#### *Kinship and marriage*

The Benuaq take into account bilateral kinship relations. In spite of this, however, the naming of children and everyday activities indicate that the patrilineal role is the more important. As already noted, the ideal marriage is one between two people of the same class, at least in the case of a first marriage. Marriage between cousins other than first cousins is allowed for all social classes. Children who grow up and live in the same *lamin* should not marry, even if they have no blood ties, as they are already considered to be siblings. The ideal place of residence after marriage is based on a utrolocal pattern, which means that the couple is free to decide to live with the relatives of the husband or with those of the wife. Usually the place of residence is decided before marriage.

Divorce is allowed, but it is something which should be avoided, especially nowadays, since many groups of Benuaq have embraced Catholicism. If divorce occurs in a couple who already have children, there are two possible outcomes as far as possessions are concerned: if the children stay with their mother, then all gifts given by the husband at the time of marriage must be returned, while if the children go with their father, the wife is not obliged to return those gifts.

Land and inheritance rights are organized according to the *lamin* of birth. The inheritance is placed in the main *lamin* under the supervision of the head of the *lamin* or his replacement, usually the eldest son if he has died. Relatives who live in other places or other *lamin* due to marriage still have rights to the inheritance that has been thus put away;

however, distribution and use of the inheritance must be based on discussions between the relatives.

### **The Cultivation System**

The development of dry-field cultivation in East Kalimantan, specifically among the Benuaq Dayak people, reflects their culture and civilization. It has been encouraged by a need to maintain themselves and as a means to express various patterns of their cultural way of life. One of the efforts they make in maintenance of survival includes the production (and also reproduction) of foodstuffs.<sup>54</sup> Food production and reproduction is varied; indeed, even in the same community methods can vary. This activity has constantly changed and developed from time to time. Thus before farming began to be practised in various places in South-east Asia, a system of hunting and gathering, followed by the domestication of flora and fauna, already existed.

Usually the gathering and collection of food is initially done in coastal areas, particularly in river estuaries. People obtain sago from the palms which grow profusely in these areas. This can be seen among the Melanau Dayak community at the mouth of the Rajang River in Sarawak. With growth in population, their economic activities (in terms of production and reproduction of foodstuffs) continued to expand. They began by catching fish and animals from other rivers. Domestication of plants was then undertaken by planting taro and rice as substitute foods; however, sago still remained their staple food.

As the cultivation of taro and rice began to develop, the clearing of land continued upstream and along river courses. However, because these areas were prone to flooding, taro and rice fields were often destroyed. To make up for this, the Melanau Dayak began to look inland for sago. But the further inland they went, the scarcer sago palms became.

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<sup>54</sup> According to Dansereau quoted in Sukadana (1983:47), there are six ecological stages: (1) gathering, (2) hunting and fishing, (3) herding, (4) agriculture, (5) industry and (6) urbanization. Shifting cultivation is a part of the agricultural stage in which there are already elements of the domestication of certain animals as well as plant management.

Needing a replacement, they tried planting rice and taro in dry fields in the forest in gaps between large trees. They also began to collect other forest products to support themselves. The focus of their lives now began to change from sago to taro, rice and forest products. This cycle formed a new stage in the cultivation system as they cleared land and made fields. This method continued to develop, even more so with the discovery of iron ore and iron processing technology, which brought a fundamental change to the culture of East Kalimantan.<sup>55</sup> They began to make tools such as machetes and pick axes to help in the clearing of fields and the utilization of forest resources, as well as other tools for hunting and warfare, such as blow pipes with spears.<sup>56</sup>

The system of dry-field cultivation is known by various terms such as slash and burn agriculture, which reflects the aspect of land processing by felling trees and then burning the remains, and shifting cultivation, which describes the pattern of rotational moves.<sup>57</sup> This rotational system of cultivation has numerous variations. Basically, it consists of clearing forest land and cultivating it for one or two planting seasons. Then the land is left and another area is cleared, comprising either primary forest or old fields which have become fertile again. According to other views, shifting cultivation is a farming system which is characterized by the rotational use of land. This system of cultivation can be found in almost all agrarian cultures throughout the world, with various names and

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<sup>55</sup> Carbon testing shows that an iron-working site in Kuching goes back to the year 1000. Some experts believe that iron technology became known in Kalimantan between the 5th and 10th centuries. Apo Kayan (Poh Kejin) was an area of iron ore deposits, as were the Mantalat River (a tributary of the Barito), the Mantikai estuary in Sambas and the Tayan River (a tributary of the Kapuas Bohang) in West Kalimantan. These places are known to have been centers of iron tools making.

<sup>56</sup> Iron technology continued to develop and products, including weapons such as swords of high quality and durability, became quite varied. The Dutch ethnologist G.A. Wilken states that the sword is one of the masterpieces of the Dayaks and surpasses in technology those of the Javanese and Malayans, whose civilizations were considered to be more advanced.

<sup>57</sup> The term "rotational" is preferable to "shifting" because the move is made to an area specifically selected for agricultural purposes and the cultivators return to the original clearing after a certain period of fallow has elapsed.

variations in management.<sup>58</sup> It has been estimated that around one third of farm land in South-east Asia is used by these types of cultivators. In terms of land use, approximately 55.6 per cent of all potential forest in South-east Asia constituted shifting cultivation ecosystems in 1980.

In Indonesia, according to Spencer (1966) quoted in Dove (1988), almost six million families are involved in dry-field cultivation over an area totaling 85 million hectares. Dove (1988) states that in Indonesia it is estimated that almost 20 million individuals are involved in these activities. This indicates that the welfare of a certain proportion of the population depends upon this form of agriculture and that the efficient utilization and preservation of forest resources is connected to these activities. If we fail to understand this system of cultivation, we will find it difficult to know and understand a part of the people and resources of Indonesia.

Where the question of shifting cultivation is concerned, there are today two differing opinions, each with different political implications and program interventions, especially where treatment of and actions against indigenous and tribal people are concerned. The first view sees shifting cultivation as a serious land use problem in tropical areas. It is considered to be destructive of the environment and related to primitive ways of life. Carelessness in cutting and burning can destroy forest and land resources, which in turn increases the danger of erosion. The second view is that, in reality, shifting cultivation is an ideal farming system in a wet tropical region where population density is low enough to allow sufficiently long fallow periods for the restoration of soil fertility.

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<sup>58</sup> Technical terms for this form of cultivation are, among others, shifting cultivation, swidden cultivation and slash *and* burn cultivation, or *essartage* in French. Meanwhile other terms are used in various places to refer to the system, for example, *milpa* in Central America, *coamile* in Mexico, *conuco* in Venezuela, *roca* in Brazil, *masole* in the Congo, *chitemane* in certain parts of Central Africa, *tary* in Madagascar; *jum*, *bewar*, *dippa*, *erka*, *jarra*, *kumari*, *podu*, *prenda*, *dahi* or *parka* in India, *chena* in Srilangka, *taungya* in Burma, *tamrai* in Thailand, *ray* in Indochina, *karen* in Japan and *kaingin* in the Philippines (Conklin, 1957). In Indonesia there are many terms for shifting cultivation such as *djuma* in Sumatra and *huma* in West Java (Soemarwoto, 1987), while observations in Kalimantan indicate that *umaq* is used for this same system.

The government regards shifting cultivation communities as nomadic and dispersed in location and as isolated and backward in their farming systems, which involve simple technology and rely on limited knowledge of farming methods. It claims that these systems are the causes of forest destruction. Damage is done as fallow periods become steadily shorter because of the growing numbers of cultivators and agricultural activities in and around the forest. As a result, nature is unable to restore soil fertility. Similarly, the use of fire to clear the land is considered to be a potential threat to the preservation of forest, land and water resources, and this in turn threatens sustainable development and destroys the achievements of development (Department of Forestry, 1992).

A number of studies concerning shifting cultivation in Indonesia over a relatively long and intensive period have endeavored to prove the above assumptions wrong by describing the cultivation system in detail and presenting the various indigenous knowledge systems of farming communities (in this case Dayak) in managing their natural environment. The cultivation systems developed by indigenous people are shown to be efficient modes of production, after various aspects relating to the physical qualities of the land, the natural environment, and the availability of labor are taken into account. Thus the systems integrate techno-ecological considerations with socio-economic aspects. Indigenous people have practiced these systems for thousands of years, and evidence shows that they are indeed wise stake-holders in matters concerning the environment.

The main livelihood of the Dayak people is characterized and supported by dry-field farming, which is one of the main economic activities in Kalimantan and is spread over virtually the whole island. The Dayak also carry out other economic activities like hunting, collecting forest products and catching fish and have now begun to be involved in monetary economic activities via trade in commodities like rubber, pepper, cacao and forest products. There are even many involved in the timber, plantation and mining industries as workers.

In the context of agriculture in tropical regions, it must be understood that the wealth of tropical rain forests lies in the existence of varied



vegetation, not in the quality of the land. Dead flora and fauna become piled up on the surface of the land and, as this material rots and is decomposed by microorganisms, a fertile layer of humus is formed. This process plays the most important role in the fertilization of the soil, for the land itself is low in mineral content and hence in fertility. In general, forested land in Kalimantan consists of red soils, which are easily eroded by water and wind if the protective vegetation is removed. Furthermore, this top layer of humus is needed for the growth of various kinds of vegetation. Indigenous cultivators like the Dayak of East Kalimantan are aware of this and know precisely how to avoid it by leaving the land fallow for a long period. Many agronomists and anthropologists view this system as the most fitting method for conditions where the land is lacking in fertility. They call the system “conservation farming” (see Ave and King, 1986; Dove, 1988; Ngo, 1991; Mubyarto *et al.*, 1991b; Zakaria, 1994).

Indigenous cultivators have developed a careful cultivation mechanism. When they clear forest, not all trees are cut down. They leave large trees to act as border markers, to manage the growth of weeds, and to control the process of burning. With caution they calculate the proper moment for burning. Since the ashes resulting from the fires are spread over the land as fertilizer, bad timing of the burning will result in a small amount of ash and therefore a shortage of fertilizer. Burning is therefore an important stage in the dry cultivation farming cycle.

The Benuaq cultivators in East Kalimantan apply cultivation phases guided by the positions of the sun and stars. The stars normally used are the Pleiades and Orion. The position of these star clusters is important in determining when to sow rice.<sup>59</sup> The tools used include the machete, sword and axe to clear the forest and fields and the dibble stick to make holes in the ground for the seeds. The *ani-ani* (a small knife held in the palm) is used to harvest rice. Clearing of the field is done in groups. The work can be done by men and women, including teenagers as well as adults; even children can help. However, the felling of large trees is

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<sup>59</sup> The use of the same stars to determine planting times for dry-rice cultivation is common among people in southern West Java, especially in the Kasepuhan and Baduy communities in South Banten. These clusters of stars are called *Kidang* and *Kereti*.

generally done by adult men, and occasionally teenaged boys. Women, meanwhile, prepare the various seeds for planting. The remains of felled trees are set aside for some time before being burnt, so that the dry wood will produce enough ash to fertilize the soil. In general, burning is done by men. Once a field is ready, planting begins. Holes are first made with a dibble stick and then rice seeds are placed in each hole and covered with soil.

Because of the varying conditions of the soil, farmers have to be familiar with various types of rice. There are seeds which are suitable for planting along river banks, in mountainous areas, in coastal regions and so on. The length of the growing time varies from a relatively short three months to a longer period of six months. The Dayak know of and use no less than fifty varieties of rice. The availability of many varieties has helped the process of biodiversification, which is currently receiving world attention.

The system of dry-field cultivation which tends to be multi-cultural, differs from the system of irrigated rice-growing, which is monocultural. In one field, apart from rice, many other plants can be found like corn, taro, potatoes, legumes, pepper, ginger, medicinal plants and fruits along the edges of the field. Perennials and fruit trees form signs of ownership and control over land if the land is left fallow. This type of multi-cultural farming guarantees security in food sources and other needs. Crops are not planted simultaneously and hence harvesting is done in the same way. These rotation patterns are close to the dynamics of nature, and it is this that makes farming of this kind sustainable.

Rice is usually harvested in relatively dry times, or during what is called the short dry season. It is cut stalk by stalk with the *ani-ani* because not all the rice is ripe at the same time. The difference in ripening time is due to different planting times and to the many types of rice planted in the same field, each with its own maturation periods. Because of this, a second harvest usually takes place several weeks after the first. Unlike planting time, harvesting involves many people. This is due to the extent of the harvest area and the short period for harvesting. Therefore, to reduce the amount of rice that could rot due to rain, large numbers of people are mobilized for harvesting. Thus there is a harmonious pattern

of work distribution, knowledge and control of nature, which are all part of the community's treasury of environmental knowledge and wisdom.

The entire process of working the land, beginning with forest clearing, burning and planting and including harvesting, is accompanied by various ritual ceremonies, which are performed in the hope of bountiful produce to guarantee their survival. The system of cultivation carried out by thousands of people in tropical regions shows great concern for the environment. One report by UNESCO/UNEP/FAO states that societies who truly feel that they own the tropical rain forest do not experience problems in the preservation and regeneration of the environment. A study carried out by Driessen, Buurman and Permadhy (1976) states that the cultivation system has a positive effect on podsollic earth. It is not a primitive system but is rather one that is completely suited to use in tropical forest regions and has adapted well, resulting in economic and social benefits. This system is able to optimize the limits of land resources with low fertility levels in areas covered by tropical forest.

Despite this, the cultivation system will only function optimally if certain conditions are met. The most important condition is related to the length of the period during which the land is in use and the length of the fallow period. This in turn is related to population density. The cultivation system is an extensive one and is difficult to change into an intensive system, which places much greater pressure on the land. The ability of the dry-field cultivation system to support a population also depends upon soil quality and on climatic conditions. Ave and King (1986) state that it is only able to support 10 to 50 people per km<sup>2</sup> or an average of 25 people per km<sup>2</sup>. The cultivation methods used by the Dayak indeed do not favor capitalization of the farming and forestry sectors.

It can be said that many areas in Kalimantan are still able to support this system of dry-field cultivation without endangering environmental conservation and sustainability. When the population density of an area has reached a critical point, a number of local adaptations will be made. Several cases demonstrate this, for example, the establishment of permanent dry fields (*tegalan*), of swamp rice fields or even irrigated

rice fields. Schophuys (1936) cited in Ave and King (1986) notes that people living at a river mouth in South Kalimantan have been able to change around 80,000 hectares of swamp into fertile rice fields in a period of around 15 years. The lesson from this is that the Dayaks are not just a group of static, traditional people opposed to change. They themselves want to and will change if the situation demands it. The best thing to do is leave them to change on their own, in accordance with their own decisions and needs.

The following are some of the elements contained in the cultivation system of the Benuaq people.

*First*, they have a concept of harmony and preservation of forest resources. For them, the forest is a part of their way of life, and they divide areas according to their function. Thus there are parts which may be cleared and parts where only forest products may be taken.<sup>60</sup> Forest products collected by indigenous people are usually not hoarded. The people only take what is needed. Fruits which grow in abundance and are not eaten are left in the forest to be consumed by other creatures. This is one natural mechanism for forest regeneration.

*Second*, cultivation as carried out by the Benuaq is an alternating system of cultivation which reuses cleared fields after a certain amount of time. Old fields which have been harvested are left for the planting of fruit trees and plants that are needed in daily life.

*Third*, the clearing of forested land for cultivation is based on a relatively strict local procedure which includes physical investigation and implementation and confirms social culture which is expressed in a series of traditional rituals. Technically, the people understand what

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<sup>60</sup> In the Kasepuhan society of Mt Halimun, there are three categories of forest, *leuweung tutupan*, *leuweung titipan* and *leuweung sampalan*. *Tutupan* and *titipan* forests may not be cleared and their preservation must be guarded. However, they may be used, and forest products taken, if done conservatively. In the context of modern cultivation *tutupan* forest is the same as protection forest. The conditions for working this type of forest are based on customary stipulations. *Sampalan* forest may be utilised for various needs such as the making of gardens and fields and for grazing purposes.

must be done after proper consideration is given to various technological and socio-economic aspects.

*Fourth*, the clearing of forested land for cultivation purposes is not easy work nor is it exclusively physical work, for it also relates to the whole order of their lives. Behind this system of cultivation is the preservation of resources and life, because if cultivation is undertaken without caution, the people's own lives will be ruined.

### ***Umaq: The Dynamics of Food Production***

The system of cultivation which is the mode of food production for the indigenous Benuaq people is closely related to the management of forest land and the dynamics of the relations between society and this resource. It can be said that virtually the whole Dayak community practices this system of cultivation,<sup>61</sup> which is undertaken by the Benuaq Dayaks to meet their need for food in the form of rice, vegetables, tubers, legumes and other foodstuffs. The whole series of activities, beginning with decisions about possible cultivation areas, the clearing of fields, planting and harvesting and concluding with post-harvest activities is accompanied by a series of ceremonial rites and beliefs.

The following description of local production patterns is related to aspects already explained in previous sections, such as the religious system, the dynamics of the relationship between people and resources, spatial concepts and patterns of ownership and control of resources.

#### *Calculation of time*

The calculation of time is the most important part of cultivation before people begin to clear the *umaq* or dry rice field. The planning of fields must be done as thoroughly as possible to avoid failure or other unwanted occurrences. One guide used by the Benuaq to determine the time for making fields is astronomy. Calculations are made by

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<sup>61</sup> Roedy Haryo AMZ, an individual concerned with Dayak culture, once joked that a Dayak who does not cultivate land deserves to have his "Dayak-ness" questioned.

estimating the position of the stars in the sky. Cultivation activities usually begin when the Pleiades are seen and new areas of land are selected. This constellation usually appears around April. The appearance of the *belentik* star or the *poti* star is a sign to begin the next series of activities, which commence with tree felling and end with planting. When the *belentik* star is directly overhead, it is a sign that burning of the fields must be carried out immediately. The clearing of potential fields is also calculated after the occurrence of other natural signs and of presentiments which appear in dreams.

#### *Choice of cultivation locations*

Land to be used for cultivation is usually between the *boak* and *kereyoyatn* stages. If the land is a rattan or fruit garden from which produce has already been obtained, it must be aged between 20 and 50 years since the last period of cultivation. In the case of land which has once been cleared but is not planted with many fruit trees and rattan, the period since it was last cultivated is usually between 10 and 30 years. This is what is known as a planting rotation or cycle in the Dayak cultivation system. This cycle never really ends. Diagram 2 above shows the cycle and the associated classification of forested land.

The land to be used for *umaq* must be one's own property or family inheritance. Otherwise it has to be in an area known as *ewai tuelatn* though there is the further condition that it must not interfere with anyone else's gardens. It is forbidden to take land which has once been cultivated by another person without prior permission, because disputes or challenges will emerge from the first or previous clearer of the land. The locations of rivers and mountains are also taken note of, as they may be the borders of other cultivation areas. The river is always given special attention because it fulfills the need for drinking and cooking water and is also a means to bathe, wash and relieve oneself.

The clearing of *umaq* is usually done in groups. The members of one family make fields side by side, with between 3 and 12 people in each *umaq* group. The making of fields in groups is based on the need for security and cooperation and also on maintenance of a minimum amount of produce, especially in terms of destruction by pests. Although

cultivators have taken into account interference by pests in estimating likely output of rice, the wider the area under rice fields the smaller the risk of food shortages later in the year.

The location of the *umaq* is usually chosen in *batekng* or *bengkar* areas, because these are the places that yield the best rice crops. However, if the area is lacking in something, people open up land in previously cultivated areas at the *babar* or *boak* stages, at least for the following planting season. The crop produced by these fields, which are thus planted a second time, will fall to between 20 and 40 per cent. Meanwhile, if a field is made in forest areas at the *bengkar* or *bengkar bengkalatn* succession levels, output can be 80 to 120 times the amount of seed planted, which means that for every one can of rice seed, around 80 to 120 cans of ripe grain will be produced.

#### *Choosing the quality of the land*

After the type of land which will be used to make the *umaq* has been decided, it is equally important to choose the right soil quality. In other words, a “feasibility study” is carried out on land to be made into arable fields. To determine the suitability and fertility of the land, several observations must first be made. This can be done both physically and non-physically.

#### *Physical observation*

Physical observation relies upon the sharpness of the five senses and on direct experience in assessing land. This type of investigation searches for physical signs that indicate that the land can be used for cultivation, that is, whether it is fertile or not. The methods used in determining whether or not the land is fertile are outlined below.

A fertile area (or one suitable for cultivation) is marked by the presence of certain types of foliage such as *buton*, *lawao*, *paren*, *dengau* and other dry leaves which hook onto branches and twigs found in the area. Fertility can also be judged from the presence of certain plants and trees, such as the *dengau* tree, which is a hardwood with a densely jointed trunk and a diameter no bigger than the girth of an adult man but

which is difficult to cut down with one chop of an axe. Apart from the *dengau* tree, good agricultural land is marked by the presence of the *kelematu* root, which is a species of vine with big leaves. If these plants cannot be found, the soil can be tested by hitting the ground with a sword and seeing how much earth sticks to it. If a lot sticks, this is seen as a sign that the land will produce plentiful rice crops, meaning that the soil is fertile.

Another method involves use of a piece of notched bamboo of around 30 to 50 cm. The bamboo is sharpened into a spike with notches placed every 3 or 4 cm. The spike is then embedded in the earth. If, after the spike has been taken out and split, soil fills all of the cavities between the notches, then the ground is fertile and suitable for cultivation.

A wooden tool called a *tangga* can also be used to test fertility (see Diagram 3). This tool is made from a piece of *selikiki* wood that has a diameter the size of one's thumb and is as long as one and a half spans of an adult hand.<sup>62</sup> The wood, which has to be one and a half hand spans in length, is cut evenly at the top, while the other end is sharpened. It is then notched in eight places from the sharpened end up, like a ladder. Use of the *tangga* necessitates placing it upright above the ground, with the sharpened end at the bottom, and the flat end at the top. After that, it is struck from above until all the notches go into the ground. Then it is removed slowly without turning, to the accompaniment a short magical charm, which goes something like: "If you are rice, then bear fruit; if not, do not".

After the *tangga* has been taken out of the ground, the earth which is stuck in the notches is inspected. Soil fertility is indicated by the amount of notches filled with earth. If all have been filled, then one can be certain that the rice produced later will be bountiful or 100 per cent of the rice will ripen. If only six notches are filled, then the harvest is likely to produce only 75 per cent of ripened rice. If only one or two notches are filled with earth, then rice production will fail, because the

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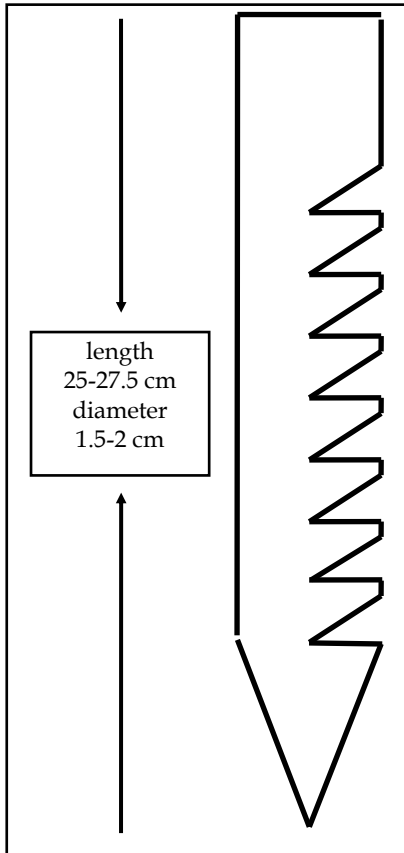
<sup>62</sup> The *selikiki* tree has a diameter as wide as an adult male's hand and a height no greater than three meters. The fruit, which can be eaten, is yellow when ripe, while the flesh is extremely thin. Each fruit is as big as an adult male's thumb and has three chambers and white seeds.



land is not fertile. Usually land suitable for *umaq* registers 6 to 8 notches full of earth. If fewer notches are filled, the land will not be used for *umaq* because it is infertile and crops will not be satisfactory. If this is the case, farmers must look for other fields. Soil fertility can also be indicated by the presence of ant eggs lodged in the notches of the *tangga*.

Diagram 3

*Tangga*, a traditional tool for measuring soil fertility



Another advantageous sign to look for when deciding on land is a sighting of the *buse* bird (honey eater) or the sound of its song from the left to right, or from the back to the front.

Signs of infertile land or unlucky signs are called *nyahuq* in Benuaq custom. *Nyahuq* itself means to look for unfavorable information from a piece of land to be used for *umaq*. If there are *nyahuq*, the land may not be cultivated. According to the beliefs of the Benuaq, violation of these prohibitions will result in a disaster such as death, an accident, sickness or loss during the period of cultivation. The signs of *nyahuq* that can be found in prospective fields include the following situations:

A dead animal or carcass (*bayaq*), be it the corpse of an insect, bird, monkey, snake or deer, if found on a prospective piece of farming land, indicates that the land is *nyahuq* and may not be used for agriculture.

These areas are believed to bring death to the person or family who clears the land.

A certain rare toadstool, known in the language of the Benuaq as *kulat jara*, indicates that the land is infertile and that death can result if it is cultivated. This species of fungus, which grows on the ground, is shaped like an umbrella, is the height of an adult man's hand span and has a 15 cm diameter hood. The stem and hood are limp, extremely smooth, and of many different colors, such as white, reddish black and yellow. The toadstool itself has a life span of just one to two days.

If a pineapple plant bearing fruit is found in a prospective field and if the pineapples, known in Benuaq as *terincikng danum*, are still young, this is a sign of *nyahuq*. If the land is nevertheless used as *umaq*, a terrible disaster will occur, for example, children will die. If the fruit of the pineapple is old, the most likely disaster is the death of adults or parents. If *terincikng danum* is found growing, the land will certainly be abandoned by the farmer, who will immediately look for other land.

Pepper ants, if found while land is being assessed, are a sign of *nyahuq* and plans for cultivation are abandoned. These ants, which are black and have long legs, live underground and eat the carcasses of dead insects. If a person is bitten by one of these ants, the bite stings like the touch of hot coals. The finding of pepper ants carrying the carcass of an insect or worm is a sign of death to come.

To look for *nyahuq* with *akar lalo* (a kind of root) involves performing a small ritual ceremony, done by only one person, with a short magic spell according to traditional Benuaq ritual. The root is cut to a length of four hand spans, then split into eight sections, after which it is joined again and tied in the middle, with the two ends left dangling. Following this, one end is divided into four parts, so that each part has two sections. Then each pair of sections is knotted again at the ends. After this, the knot in the middle of the *akar lalo* is slowly untied and stretched out. If the root forms a coil, it is a sign that the field will produce well, but if it is the other way around, that is, if there are two coils or one coil where part of the root has come free, this is a sign that land clearing for *umaq* should not go ahead, because some great misfortune will occur.

Other negative signs are the finding of wild animals that appear tame. This means that the field produce will disappear and there will be nothing to harvest. This is also the case if one meets a poisonous snake whose head hangs downwards. This *nyahuq* indicates that land clearing will bring death to the person responsible or to a member of his or her family. If the cry of the *mentit pisatn* or *beniaq nangih* bird (a type of eagle which makes a sound like that of a person crying) is heard, the person examining the land is in danger. To remove or avoid the danger, the person who heard the sound, that is, the person who wants to clear the land, must make a *tempatukng* or small statue as his or her replacement (*boliq*). If the statue is not made, the person will die.

#### *Non-physical assessment*

Non-physical assessment involves examination of prospective *umaq* land using supernatural powers (religion). One influential source of signals or presentiments is dreams. There are dreams of good omen and those of ill omen. Even the time of dreaming is taken into account. Dreams in the middle of the night are considered significant, but dreams which occur as sunrise approaches, when the roosters have crowed, are not counted. In order to have good dreams, even the position of the body must be taken into account, that is, it must face to the right, meaning that the right arm is under the body.

Dreams considered good omens for the clearing of agricultural land are those in which there is a large body of water, whether it be a dream of washing, going to the river or rowing a boat. Such is also the case if one encounters people who are still living or if one dreams that he or she is approached by a woman. These dreams are considered omens of good fortune, trouble-free work and bountiful harvests. Dreams considered to be of ill omen for the clearing of land are those in which one meets a dead person, is strangled or comes across a snake or wild animal. These dreams usually foretell misfortune, bringing death to the dreamer or a family member and resulting in erratic work in the field and a poor rice harvest.

## The Preparation of Dry Fields

After all observations and conditions for the choice of potential cultivation fields have been fulfilled, the next step is to make the field. The series of activities is explained below.

The first activity is *ngeraakng*, which literally means to intend or to pioneer. The intention of cultivation land is indicated by clearing and cutting down some of the vegetation on the chosen land. The extent of tree felling depends upon ability to do so; it can be 10 m<sup>2</sup> or more or just 2 m<sup>2</sup> as a marker. After it is cleared, the area is marked by wood or bamboo imbedded on an angle, with fresh leaves inserted at the top. This marker is called a *serempakng* or *tonyakng*. It shows that the area is under someone's control and may not be disturbed. This step is usually done by men individually or with others who also intend to clear land in the area.

*Nebas/nokaap/memepes* is the work of cutting undergrowth such as *buton* plants, *lawao* leaves, *parem* leaves, clumps of bushes and other plants with diameters from the size of one's arm to that of an adult's calf, using a short *mandau*. Stumps of small trees or bamboo must be chopped evenly with the ground; there may not be any left remaining. The act of chopping must be done completely and the branches must be separated from the trunk, so that no branches are left attached to the fallen trunk. This work influences the convenience and ease of the following work and must therefore be done well. The base of the tree is cut at the height of an adult's knee from the ground. The remains of the cut branches must be spread evenly over the earth's surface and not piled up. This job can be done by both men and women, although men are dominant. For this work, *peliatn* is observed, and the work is forbidden to exceed four days and four nights. *Peliatn* is a kind of taboo which may not be violated. In this context the *peliatn* is a taboo against stopping work or being assisted by another party within a certain period of time. The length of the *peliatn* varies according to the time of work being done. It is meant to give encouragement to finish one's responsibility (in this case, the work) on one's own, without expecting help from others.

While men are working on land clearing, rattan seeds may be planted if desired. The rattan is planted around the tree trunks which will be cut down. Five to six seeds are planted in 7 to 10 cm of soil using a sword or sharpened stick, and are then covered over with earth. For each tree trunk two to five rattan seeds can be planted, depending on the width of the trunk's diameter. Trunks of the *ulin* tree cannot be planted with rattan because *ulin* wood takes a long time to rot and is therefore useless as organic fertilizer.

The next stage, which is *noang*, meaning to fell, represents the heaviest part of the work, because the trees that must be cut down have a diameter of more than 25 centimeters. The tool used for this type of work is not the short sword but an axe or a chainsaw if available. One person can usually clear two hectares (around 6 cans of rice seeds) in about four to five days if using a chainsaw or approximately 20 to 25 days if using an axe.

The felling process begins in the lower lying areas and then moves on to areas of higher elevation. The part of the tree cut first is that with the softest wood. If the wood at the lowest part is too hard, other softer parts are cut further up, until the top is reached. The fall of the trees is arranged in such a way that there is no obstruction or disorder. The smaller trees are felled after the larger trees. The aim is to have no left-over wood from the felling which will not burn completely. There are several felling techniques, ranging from the easiest to the most difficult. The level of difficulty brings "value" and "prestige" to the person who does the felling. All of this work is done by men and grown-up boys. A man who is able to fell trees using the most difficult technique will go up in prestige and be admired by women. The *peliatn petolos* related to the job of *noang* is that it may take no longer than four days and four nights. In fact, the process of preparing and working fields is often made into an opportunity for seeking a marriage partner (husband or wife).

At the same time that felling is carried out or immediately afterwards, *nutu* is done. This is the work of cleaning or chopping the branches of trees that have been felled. It is done in order that the felled trees are evenly baked by the sun's rays so that burning can also be perfect. If done by one person, *nutu* takes four to five days for a field of six cans of

rice seed (more or less 2 hectares). This work has no *peliatn* and is usually done alone. The remains of the trees that have been felled and piled up for burning are called *joa*.

*Ngoing Joa* is the task of drying out the remains of felled trees before they are burnt. The drying out of the wood is dependent on the strength of the sun and can take between 30 and 45 days. While farmers are waiting, other activities can be done during this period, such as building a hut or a place to store rice, preparing the seeds, or making a dibble stick.

*Nyuru Joa* is the name for the burning of dried wood. The work must be calculated precisely, because the fertility of the soil will depend on the timing and results of the burning. Several conditions must be met before this activity is carried out. For example, the person who will do the burning, usually the male head of the household, must not eat or wash before commencing. The burning must also take place after noon, if it is to be done thoroughly. The purpose of the first condition is to ensure that the fire burns the wood like a man who is hungry. Before the burning is carried out, a traditional ceremony usually takes place. The materials that must be prepared for the ceremony include a candlenut, an empty snail shell and a pellet of resin rolled by a stick of rattan, which is then burnt. The flame from the stick of rattan is used to begin the burning of the field. The moment the burning is implemented, the people who are doing the burning summon the wind to help improve the burning process. If the land to be planted requires six cans of rice seeds, five or six people are needed to do the burning. *Nyuru* only requires half an hour from the beginning of the burning until the fire is extinguished.

Owners of fields in close proximity hold a number of discussions and make agreements beforehand, and burning is done together. During these discussions, the time of burning, as well as technical problems associated with the burning, is negotiated. Before the burning begins, agreements are reached about fire-breaks between fields and the edge of the field to be cleared. The fire-breaks can take the form of mountains, rivers, or trees. If they are trees, the trees are left uncut, so that when the burning is finished, the borders remain visible. Apart from natural borders, ditches are usually dug around the land to be burnt, so that

disputes will not arise once the burning is finished. Apart from solving disputes over borders, the ditches can be used as a means to stop the flames reaching areas outside the field that is being burnt.

This method also gives other families the chance to prepare themselves, so that when the time arrives, burning can be carried out together. In anticipation of extinguishing the fire, the Benuaq have an instrument called a *bedir set*. The *bedir set* itself is a fire extinguisher, made from *jingkau* wood, which is used with supernatural powers. Another method of extinguishing fires is by making a ditch around the field or by splashing water over it. Sometimes it is also done by planting pineapple bushes around the field. These efforts to prevent forest fires (*serau*) are known as *ngeladakng*.

*Bongkakng* is the gathering of the remains of wood which were not completely burnt and piling them in the middle of the field. The material that has been piled up is called *peruruk*. In carrying out this activity, there are many prohibitions, such as that against the carrying of axes. The *peruruk* area is usually extremely fertile. The next job is *nyuru peruruk* or burning of the pile of *mongkakng*. Here the land is also very fertile. After this activity is finished, the field is left to wait for rain before planting or *ngasak* can be done. While farmers are waiting for rain, various activities can be carried out, such as completion of the hut or rice storage place, preparation of seeds and so on.

*Ngasak* or *menugal* is the activity of planting seeds (*bini*) in the prepared soil. For the first three days this activity is done only by family members, but after this time others may be called in to help. This is a mass activity including many people, men and women, adults and children. Before sowing, a traditional ceremony is held, called *pedilibini* or *pelotar*. This ceremony is initiated by making eight holes using an *asak* (dibble stick) in the earth while reciting a magic charm. Following this, the *nyan pasak* is done, which is followed by *nagut bini*. A male makes the first hole but women have the task of collecting the rice seeds and distributing them to other women to be put into the *tugal* holes.

After these ceremonies are over, the *ngasak* or sowing of seed follows immediately. The distance between holes is one to two adult hand spans,

that is, between 25 and 50 cm. Some eight to ten rice seeds are planted in one hole, the diameter of which is 2 cm. If the rice is not dropped exactly into the hole, it must be pushed inside using the feet. A person seeing these activities for the first time will certainly be amazed at the ability to *moyas*, that is, to place the rice seeds precisely and quickly. The task of *moyas* is usually done by women, and that of *ngasak* by men. The men walk in front of the women as they work. Usually those who carry out this activity are husband and wife couples, or a young engaged couple.<sup>63</sup>

The seeds are planted in the following sequence:

- corn
- sweet potato
- eggplant, legumes, *temulawak*, pumpkin and ginger
- rice and sticky rice
- cassava, after the rice has grown to 20 cm
- bananas
- fruit trees

After *ngasak*, work is divided into women's tasks and men's tasks. The latter consist of building houses or huts in the field, including a tall house called *pemuyo* from which to watch for birds, a house (*bepak*) for eating and rest, a house for sleeping (*belay umaq*), and a rice storage barn (*belay serek*). Women's tasks consist of making small round containers for rice (*osokng*) and larger rice containers called *ansokng* or *temparuk*.

The next stage is clearing weeds from the field and pulling out grass. This is considered women's work and is usually done several times, depending of the amount of grass. If cultivation is done in *bengkar* or *batekng* areas, this activity is not required, as grass rarely grows here. Grass flourishes mostly in *boak* areas and weeding is usually done twice. The only other activity is waiting for the harvest. When the grain

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<sup>63</sup> If in the middle of the job a young couple carries out such inappropriate acts as kissing or having sexual relations and then goes back to work, usually the seeds that they have planted will not grow. If they are caught, the couple will be punished according to customary law.



begins to form, someone waits around to scare away birds or guard the crop from other pests. Once the rice has become yellow, it is ready for harvest (*ngotapm*).

*Ngotapm* or harvesting is a major activity for the Benuaq and has a deep spiritual meaning. Usually, harvesting activities are preceded by a series of ceremonies, one of which (*beliatn pare*) is an expression of gratitude for the new rice. In rice harvesting, a container called a *gentuq* or *lanjung* is placed in front of the harvester's stomach to hold the newly cut stalks while cutting continues. The rice is poured from the *lanjung* into a larger container called a *belakas*. Once the *belakas* is full, the rice is taken to a house or hut. Although this is a major activity for women, men may also be involved. One of the most popular activities associated with harvesting is the making of *empeng* by pounding young rice until it is flat and thin. The *empeng* is eaten after being boiled or fried or else it is consumed directly.

### **A General Picture of the Research Villages**

This study was carried out in two villages, each with different characteristics. Lambing, the first village, has experienced the shock of modernization in forestry, while the second, Benung, has had little experience of forest industrialization.

Lambing is the capital of Muara Lawa Subdistrict in Kutai District in the province of East Kalimantan. From Samarinda, the capital of the province, the village can be reached in around 24 hours if a person travels by boat along the Samarinda - Damai route, via the Mahakam and Muara Pahu Rivers. The journey from Tenggarong, the District capital, takes around 20 hours by the same route. Lambing borders on several other surrounding villages in the same District, including Benggeris, Dingin, Muara Lawa and Cempedas.

Lambing covers an area of 51.91 km<sup>2</sup>. The greater part of the village consists of farming and garden land, housing and social infrastructure. Apart from the village road, the only means of communications both within the village and between villages is the river and its tributaries,

which are spread all around Lambing and the surrounding area. The importance of the river for communication purposes can be seen from 7.

Table 7  
Ownership of Water Transportation

Means of Transport	Lambing	Benung
Motor boat	6	-
Speed boat	2	-
Outboard motor boat	86	-

Source: Muaralawa and Damai Subdistrict Offices, 1994.

Unlike Lambing, which is already relatively open and has a highly mixed population, Benung is entirely made up of people from the Dayak ethnic group. This is due to the latter's relative isolation, which limits population mobility.

Benung is situated 60 m above sea level and covers 169.52 km<sup>2</sup>. This village also borders on several surrounding villages; to the north lies Engkuni Pasek (in the Barong Tongkok District), to the south Tepulang, to the west Muara Tokong and to the east Keay. Benung can be reached from Samarinda by taking river transport to Melak and then going overland by car to the village of Jengan Danum, from where an *ojek* (motorbike used for public transport) can be used to reach the village. Benung is located about 17 km from the subdistrict capital of Damai and can be reached in around one and a half hours. It is 285 km from the capital of Kutai District (Tenggarong) and 318 km from Samarinda.

Unlike Lambing, which relies more on water transport, the only means of transport in Benung is overland, as there are no large rivers flowing close to this village. Also, distances from Benung to several other locations are short. The Idaatn River, which flows through Benung, has only ever been used as a source of irrigation water for farming land in the village.

Roads in both research villages are dirt tracks, which have not yet been asphalted. When the wet season arrives, overland transport vehicles have difficulty in using these roads. This is one of the reasons why river transport in Lambing has become so important, and why settlements are concentrated along the river banks. Many houses are built upon stilts made from large logs. By contrast, the population of Benung is more concentrated in the area around the *simpukng* where many and varied fruit trees can be found.

Physically speaking, houses in the two villages show no differences for most are raised buildings made of wood. Long houses or *lamin* can still be found in both villages. In Benung, the *lamin* are still currently inhabited by the majority of the village population, or in other words the majority of Benung's people are concentrated in the *lamin*. Meanwhile, in Lambing there is a growing tendency for people to live in individual houses as nuclear families. Although there are still *lamin* in Lambing their function is nothing more than a place for customary-law meetings. The still functioning *lamin* in Benung are closely related to the real social solidarity, which remains relatively strong in this village. The attitude of mutual assistance among members of a *lamin* is visible in their everyday life of mutual give and take. Under these conditions, the role of the village headman is still extremely dominant in solving the problems of everyday life.

### **Population Structure**

In terms of total population, the research villages have noticeably different rates of growth. Although in area Lambing is far smaller than Benung, the growth of population in Lambing has been much more rapid. In 1994 the total population of Lambing was 1,065 people (268 households); with an area of 51.91 km, the village has an average population density of 20 people per km<sup>2</sup>. With this density, Lambing is the most densely populated village in Muaralawa District. This is related to Lambing's status as the District capital. As a result, it receives many migrants from the Kutai ethnic group and also from the Javanese and other groups. Although Lambing has many migrant settlements, the dominant ethnic group is Dayak. Currently, at least 80 per cent of the

population is made up of Dayak people. The presence of other ethnic groups in the village has resulted in mixed marriages between different groups, particularly between Dayak women and men of other ethnic origins.

Although the village of Lambing is more densely populated than other villages, it is experiencing a decline in population growth, as Table 8 shows.

Table 8  
Population Growth in Lambing

Region	1990	1991	1992	1993	1994
Lambing village	1,255	1,251	1,243	1,043	1,065
Muaralawa Subdistrict	3,648	3,686	3,728	3,972	4,170

Source: *Kecamatan Muaralawa Dalam Angka 1994*.

Unlike Lambing, which has a density of 20 people per km<sup>2</sup>, population density in Benung is still classified as low (see Table 9). In 1994, the population of Benung was recorded at only 264 people or 59 households, which means that with an area of 169,53 km<sup>2</sup>, density averages two persons per km<sup>2</sup>. In terms of total population, Benung has a very small number of people for the area of the Subdistrict of Damai. Data for 1994 shows that the total population of Damai Subdistrict had reached 10,889 people (2,416 households) spread over 19 villages. In other words, the population of Benung is only 2.4 per cent of the total population in the subdistrict, while its area is 5 percent of the total area of the same subdistrict, which covers 3,438.70 km<sup>2</sup>.

Table 9  
Population Growth in Benung

Region	1990	1991	1992	1993	1994
Benung village	185	206	220	252	264
Damai Subdistrict	9,808	10,183	10,556	10,964	10,889

Source: *Data Potensi Kecamatan Damai 1994*.

In terms of population composition, there were 139 males and 125 females in 1994. These figures show that the total male population is larger than the total female population. This occurs in almost every other village in Damai Subdistrict, where males total 5,697 by comparison with 5,192 females. These figures give rise to several questions, for various censuses show that Indonesia has a relatively equal male and female population. Information obtained during research suggested that the reason behind the smaller female population is the large number of Dayak women who marry men from outside the village (including Dayak men from other villages), and then go to live in the city, for example, in Samarinda. The reason may also possibly be the arrival of male migrants in villages which are no longer isolated.

According to various sources of information, the decline in the total population of Lambing is mainly the result of the high levels of migration to the city by the younger school-age generation. In Lambing itself, there are currently several schools, ranging from kindergarten to Senior High School. Those who are at the senior high school level can continue their schooling not only in Lambing but also in other subdistrict towns such as Melak, where schools are considered to be of better quality. Meanwhile, those who wish to go on to higher education can go to universities in Samarinda or other provinces. Usually, those who continue schooling as far as Senior High School level tend to return to their village of origin, both to look for work and to return to farming. Those who graduate from higher education institutions tend to live and work in the big towns because of the limited employment opportunities in their villages. Meanwhile, in Benung there is at present only a

primary school. Benung children who wish to go on to high school have to go to the capital of the Damai or Melak subdistricts.

In Lambing, because a portion of the school-aged population can attend schools in the area, the structure of the population of school age has not significantly changed. School-aged children in this village can still help their parents in the field or garden. This is different from the situation in Benung, where such children must live in surrounding subdistrict towns. As a result, in this village only parents and children not old enough to go to school are to be found.

For the households of both villages, to have a child in school or working in another city is a form of social status, but at the same time it is also expected to help the family economy. This is even more so at the moment, when the decline in prices for agricultural commodities and forest produce such as rattan, has made contributions from children or family members in the town particularly significant. Currently, the majority of the population finds it difficult to get money in order to buy necessities which cannot be produced in the field or garden.

The tendency for people of productive age to migrate is caused by the slow growth in both villages. However, as a result of increasing problems related to the transfer of resources which has harmed the local population, a new awareness has emerged among the educated, especially those living in the city, to defend the rights of the people in these two villages. Encouraged by a number of NGOs, they have succeeded in sowing a new awareness of rights among the villagers themselves. The community now has the courage to question the authorities over matters that will cause them harm, whereas previously people felt afraid to contact government institutions, especially security authorities.

In terms of means of livelihood, the two villages are quite similar, but Lambing has a more varied stratification of work type as a consequence of rapid village growth. By contrast, the livelihood of the population of Benung is almost fully dependent on the management of natural resources in the village, such as forests, fields and gardens,\* with additional activities such as the raising of chickens, cows and pigs.

Table 10 shows the sources of livelihood for people in Lambing and Muaralawa Subdistrict in 1994.

Table 10  
Means of Livelihood for the Population of Lambing

Region	Civil service	Armed forces	Trade	Farming	Fishing	Laborer
Lambing	76	13	20	216	9	29
Muaralawa Subdistrict	116	13	41	868	46	109

Source: *Kecamatan Muaralawa Dalam Angka 1994*.

It would seem that the “new” types of job in Muaralawa, as a civil servant or a member of the Armed Forces, are mainly filled by both indigenous people and migrants from Lambing,.

As in many other villages in East Kalimantan, rattan is the main economic support for the majority of the population. Although Lambing is classified as relatively small in comparison to other villages, this village has the greatest potential for rattan production in the Muaralawa subdistrict, as Table 11 shows.

Table 11  
Area and Type of Rattan Gardens in Lambing (in hectares)

Region	<i>Sega</i>	<i>Jahab</i>	<i>Pulut merah</i>	Others
Lambing village	53	51	75	12
Muaralawa Subdistrict	275	172	103	56

Source: *Data Potensi Desa 1994*.

Additional income from rattan has experienced a fluctuation causing financial losses for the local population, particularly since 1988 when the Indonesian government banned the export of raw rattan. This export ban caused the supply of raw rattan to grow, while the domestic demand was not able to absorb very much *sega* rattan, which is produced by farmers in East Kalimantan.

Unlike the relatively varied occupations to be found in Lambing, the majority of Benung's population works in the agricultural sector, that is, in dry cultivation. There are only eight civil servants (teachers) in Benung; they cultivate land in addition to teaching. According to data concerning the potential for Damai Subdistrict in 1994, the sources of livelihood of the population of Benung are as follows (Table 12).

Table 12  
Means of Livelihood for the Population of Benung

Region	Farming (cultivation)	White collar work	Civil service	Trade
Benung village	47	2	8	2
Damai Subdistrict	1,774	233	222	187

Source: *Kecamatan Damai Dalam Angka 1994*

Cultivating fields and gardens is the main occupation of the population of Benung. Usually dry cultivation is undertaken once a year, beginning around April (clearing of fields) and ending in January (harvesting). Each family usually works two or three hectares of fields. Each hectare produces around 100 cans of rice, with one can equal to approximately 16 kg of rice. Income from cultivation usually goes to meet the family's food needs. It almost impossible to find a farmer who buys and sells rice. In order to satisfy their other needs, they rely on income from garden produce, both fruit and rattan, and also from raising animals.

Meanwhile, additional income can be obtained from forest products such as red rattan, which is usually used as material for *Amo/berangka* handicrafts, as well as wood which can be used to make small boats.



Although the forest still provides the livelihood of the Dayak people, if seen in economic terms, income obtained from the forest has declined. This is related not only to the decline of forest quality in and around the village but also to the fall in prices for these commodities. For example, in the past before the use of kerosene became widespread, many villagers gathered and sold resin. However, now that kerosene is widely used, resin no longer has any significant value.

### **Agrarian Structure**

Benuaq society has two forms of land ownership and control, individual and communal. Individual ownership of land is based on individual efforts involved in clearing the forest (*bengkar*) to make fields, even though clearing is normally done with help from other people (mutual assistance). Communal land is land that can be used communally, based on shared ancestry or membership of a certain community. In terms of individual ownership, each field that has been cultivated at some time remains the property of the person who first cleared the land, even if it has reverted to scrub. No one may use this land unless permission has been given by the person who first cleared the land. Ownership can be inherited, used in conjunction with others, or alternated between family members. A young family, if they have not cleared forested land, can request fields for cultivation from their parents or from another party, after first making an agreement. The duration of use of fields owned by another person depends upon the agreement made with the owner as to whether they can be used for only one season or forever,

The clearing of forest for cultivation is usually not carried out arbitrarily. In the Benuaq community there is the term *eway tuelatn*, which means a forested area controlled by a certain family or a certain ancestral line. Apart from functioning as an area which can contribute economically to the family (wood, rattan etc) the *eway tuelatn* is also a reserve area that has the potential to be made into cultivated fields one day. Usually areas once used for cultivation are left fallow for years, then cultivated once more as fields or else made into gardens for fruit trees or rattan; these areas are known as *simpukng* or *lembo*. *Simpukng* areas can yield produce continuously every season and for this reason

the sense of ownership of these areas tends to be stronger than of areas which can only be used rarely. As a consequence, many members of the community cannot remember how many fields they control but are fully aware of the acreage of their areas of *simpukng*. Because of this, it is very uncommon to find transfers of *simpukng* to other families, although transfer of control over cultivated fields often occurs.

In general, ownership of land can be obtained by:

- clearing the forest (*tempatn kami*, that is, “by hand”), which means land where ownership has been acquired by removal of forest. Nowadays, however, the local government has banned the clearing of forest for cultivation. People who wish to clear land are obliged to report first to the local government.
- inheritance, or land obtained from parents. In Benuaq society patterns of land inheritance are based upon equal rights between males and females (that is, women get the same amount of land as men).
- purchase, especially for housing. More and more land is being bought in Lambing because the population is continually growing while land acreage stays the same. The phenomena of buying and selling land for housing occurs not only between migrants and the indigenous population but also among indigenous people who wish to own a house in a certain area. Meanwhile, the buying and selling of land for cultivation purposes is rare, and when it does happen, it occurs between indigenous people.

From information gathered, it seems that ownership of cultivation land (*ladang*) is relatively equal among families, although there are of course some families who own more than others. Families who own more land are usually more skilled and diligent in their management of fields and gardens. It can be said that the extent of ownership or control is largely determined by the ability of a family to cultivate its land. There are no accurate data for the amount of land owned by each family. The collection of information concerning land ownership is difficult because people can usually remember only the approximate extent of land being cultivated in the current year. On average, the extent of cultivation land owned by a family is between two and three hectares. This figure is

almost the same for every village, because this is the area considered manageable by one family yet at the same time sufficient to satisfy food needs for one year.

In both villages there is no system of “temporary” control of land, such as the institution of sharecropping found in Java, nor are there agricultural laborers. This is because every family has its own land. What does exist is “loans” of cultivation land to other people, without any obligation on the part of the “borrower” to give a share of the produce to the owner. Thus, there can be found only a pattern of “owner-worker” cultivation, meaning that people cultivate only their own land. Because there are no farm laborers and the cultivation of two hectares of land requires quite a large input of labor (especially for planting), the Benuaq have developed a system of mutual assistance (*pelo*). This system does not involve any payment of wages; however, mutual assistance at harvest time recognizes a return to labor called *oikng*, whereby people who take part in harvesting are given one *berangka* or can of rice (equal to approximately 16 kg) to take home.

In terms of land use, villages in East Kalimantan generally consist of forested land, cultivation land, gardens and housing areas. The extent of each different form land use area is very much dependent on the extent of development experienced in a village. There are villages where forest is dominant, and there are those which have almost no forest at all. Lambing is an example of a village which now has no forest area (*bengkar*), whereas Benung on the other hand still has forest coverage of around 100 km<sup>2</sup> which is approximately three-fifths of the whole village and covers 169.53 km<sup>2</sup>. The remaining 69.53 km<sup>2</sup> consists of cultivated land, gardens and houses. There is no available detailed description of land use. Each area has its own function in society. For example, the forest is a place where various products of economic value can be obtained. Such is also the case with land where food staples such as rice, corn and cassava can be planted. The garden is a source of additional income because many of its products such as rattan and fruit can be sold to supplement family livelihood.

With patterns of land ownership and control as described above, and land holdings still large enough to satisfy the needs of every family, the

Benuaq people have created a relatively egalitarian agrarian structure. This means that there is no land control pyramid, wherein a small part of the population controls a large area of land and the majority control only small amounts of land, as happens in Java. The almost even distribution of control over land is the reason behind the similarity in economic conditions of each family. This is particularly apparent in Benung, where the way of life of virtually all families depends upon the agrarian sector. This is somewhat different from conditions in Lambing, where many members of the community are no longer dependent on the agrarian sector, but live from employment as traders, civil servants and the like. However, this applies only to migrants.

The situation described above indicates that within the Benuaq community itself there is no striking stratification of society. If, however, incomes are seen in terms of the economic situation of the whole region, it is the migrants who tend to have greater control of the socio-economic structure. In Lambing, for example, many migrants who are traders have accumulated far greater stores of wealth than have the indigenous people. Traders who sell everyday needs can make higher profits compared to local people, who offer commodities at constantly declining prices. There is apprehension within the community that in the long term, a pyramidal socio-economic structure will be created wherein control of economic resources will rest in the hands of migrants.

The imbalance of the economic structure has been worsened by the increasing imbalance in the decision-making process. Nowadays, the role of the village headman has become virtually limited to ritual ceremonies, while decisions of socio-economic importance are made mainly by the formal governmental structure. Because of this, the allocation of local resources is often aimed not at empowering local communities but at weakening them. This can be seen in the process of transfer of land rights (land appropriation), which has been to the detriment of many individuals in the community.

## **Outside Interventions**

Both research villages have experienced interventions from outside parties, not only from government but also other social institutions. Lambing received funds from the *Inpres Desa Tertinggal* or IDT (Presidential Directive for Villages Overlooked by Development) program in 1996. The sum of Rp. 20 million that was received was then distributed to two groups. Such also was the case in Benung. However, the IDT funding did not circulate after it was distributed to the group members, and how it was used remains unclear. On the one hand, the failure in management of IDT funds cannot be separated from the assumption within the community that the IDT money was a grant. On the other hand, it seems that the implementing agency did not really care about the development of group members. Thus, interventions in the form of pouring forth funds cannot strengthen the economy of the local population.

Other forms of intervention have included the establishment of HPH Bina Desa, which was developed by a timber company. The owner gave assistance in the form of capital to the local community to raise chickens, but this program also proved unsuccessful. The same thing happened with an assistance program carried out by *Pengembangan Sosial Ekonomi* or PSE (Social Economic Development) under church auspices in 1991/1992. This assistance took the form of training and practice in fisheries, but these efforts too failed to improve the economic conditions of the community.

These failures have occurred for a number of reasons. On the one hand, the community acknowledges that there have indeed been several helpful assistance programs, such as the scholarship program conducted by a mining company for a number of school students in Lambing. On the other hand, however, the community is also aware that most of these programs of assistance have been carried out in a haphazard fashion and were undertaken only for the sake of implementing government recommendations. At the same time they represent a means of subjugating the community, so that people will be willing to surrender their land for company purposes.

Failures have also occurred because of the high level of dependence of the local population on natural products, a dependence that has existed for many years. Because of this, the Forestry Service of East Kalimantan is currently in the midst of encouraging local communities to become involved in a nuclear estate and smallholder relationship in the management of oil palm and rubber plantations.

### **The Local Economy**

Basically, people's everyday needs can be satisfied by the resources surrounding them, such as gardens, cultivated fields, forests and rivers. From these sources they are able to obtain food, medicines and building materials for houses and other purposes. Some of these goods and materials can be taken and used immediately, while others have to be further processed before use. For example, people process the sap from sugar cane or sugar palm to obtain sweeteners or sugar, while they use oil obtained from coconuts, *tengkawang* or animal fat to fry foods. To get these materials, a person must first go to the forest, field, garden or river, and then process them. Thus, time and effort are needed to obtain the desired product.

At the moment, as areas become less isolated, everyday needs can be obtained relatively easily and quickly by either buying or trading. In Lambing, there are already many small shops (*warung*) which supply everyday needs. In Benung there are also several members of long houses who have opened *warung*, both inside the long house and outside. Such is the case with market activity, although markets are still weekly and rotational. Table 13 shows the prices of some of the basic necessities of life in Benung and Lambing at the time of research.

Table 13  
Basic Needs of the Benung and Lambing Communities

Product	Amount needed per family per month*	Local price (Rp)
Rice	60 kg	1,000 per kg
Sugar	3 kg	2,000 per kg
Frying oil	3-5 bottles	2,000 per bottle
Kerosene	15 liters	500 per liter
Firewood**	0.75m <sup>3</sup>	16,000 cub.m
Salt	2 blocks	200 per packet

Source: Primary data, Lambing dan Benung, 1996.

Note: \* Assuming that one family consists of four persons.

\*\* People in Lambing and Benung do not need to buy firewood as they collect it from around their fields. This figure is the market price in Muara Lawa.

The amount of rice given in Table 13 is an estimate of normal daily needs apart from any traditional ceremonies or celebrations, such as a church program which may require much food. For traditional ceremonies, for example *beliatn*, the person planning the ritual ceremony is usually given contributions from neighbors in the form of rice, food, firewood and labor. This is reciprocal in that the person who makes the contribution is not directly repaid, but will be repaid in kind when he or she organizes a similar ceremony.

For lighting, many people still use wall lamps and pressure lamps with kerosene as fuel. Several well-off families in Lambing are able to afford electricity or solar generators. The generator in Benung is not used every day but only on certain days or at times of big ceremonies. Every family or individual is asked to contribute to buy fuel for the generator. On Saturday nights when the generator is turned on, the electricity makes television available. Huts which boast a television set are always

full of people who watch until late at night, and often fall asleep in front of it.

The main source of income is non-wood forest products, particularly rattan, honey and other materials obtained from fields, gardens and forest. Cultivated fields are not just planted with one type of staple food but with many other useful plants. Fields (*umaq*) in Benuaq communities are sown with plants other than rice and sticky rice such as corn, sweet potato, eggplant, beans, *temulawak*, ginger, cucumber, bananas, pineapple and cassava. Almost all these commodities are used for individual needs, although they are sometimes sold. This produce does not include fruit, which is a public commodity for indigenous people in Kalimantan. The range of fruits is different for each place. Durian, jackfruit, *langsar*, mango, and other fruits which last a long time can be sold. Table 14 shows the selling prices of major commodities.

Table 14  
Selling Prices of Agricultural Produce

Product	Output	Local buying price (Rp)	Selling price (Rp)
Rice	60-210 cans	5,000 per can	300,000-1,050,000
Corn	1000-2500 ears	150 per ear	150,000-375,000
Cassava	750-850 kg	200 per kg	150,000-170,000
Bananas	3500 bunches	500 per bunch	1,750,000
Chili	50-100 kg	2,000 per kg	100,000-200,000
Others*			100,000-250,000

Source: Primary data, Lambing dan Benung, 1996.

\* Including other commodities such as coffee, candlenut, coconut and pumpkin. In the case of certain commodities like corn, coffee and chili, harvesting can be done 2 or 3 times a year.



Gardens or unused fields are stretches of forest land which were once cultivated and later planted with various food crops such as fruit trees, with plants for building materials such as *sungkai*, *ulin*, or *meranti* or with commercial plants like rubber and rattan. The planting of various species of plants on unused fields is an activity which has existed for generations among the Benuaq to meet daily needs and to mark control or ownership of land.<sup>64</sup> This activity, both directly and indirectly, can be seen as an effort to preserve forest resources so as to ensure their survival.

The fruit season arrives after the honey season. Apart from being directly consumed, a portion of the fruit is sold. Lambing is one place in Muara Lawa that has a fruit market. Apart from fruit originating from Lambing, fruit arrives in Lambing from Benggeris, Tempedas, Lotaq and even Jelm Sibak, which is 70 km away, upstream on the Lawa River. Meanwhile the fruit market for Benung and its surroundings is located in the village of Jengan Danum.

If the fruit season is so bountiful that it is difficult to market the fruit or consume it directly, people preserve it in various ways. Some fruits are fermented or made into other foods which can be kept longer, so that they can be used for celebrations or big ceremonies. The species of fruit that can be preserved include *durian*, *keratungan*, *lai*, *sembayau*, *lahung*, *cempedak*, *kapul* and *duku*. If there is still an abundance of fruit, it is not harvested but is left to drop to the ground in the garden or forest as food for animals. The people are of the opinion that even animals, as inhabitants of the forest, have the right to eat the fruit. This can be seen as one of the ways in which the people ensure the balance and continuity of the natural process of plant regeneration via animals.

The way of life of the Benuaq is largely colored by the utilization of rattan. They use it for various purposes such as making household furniture like chairs, *lampit*, mats, *berangka*, *anjat*, baskets and *lanjung* as well as traps for animals or fish, sticks or canes and household

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<sup>64</sup> A characteristic sign of ownership of an area in Benuaq society and for all Dayaks in general is the deliberate planting of certain types of tree. Each family and the general community know who owns or controls a certain plant.

decorations. It is also used as a material for making and binding houses, for example, to tie leather and wood, and for flooring, walls and doors. The majority of houses built in the past did not use nails or bolts, just rattan rope. Although only held together by rattan, these buildings are sturdy and durable. The *Lamin Tolan* in Lambing, for example, is still firm although bound only with rattan, as is the *Lou Benung* in Benung. Tools and farming equipment, too, such as pick axes, swords and rope to moor boats are tied together with rattan (*belawit*). Young rattan in particular (*umbut*) is used as an ingredient in medicines and foods and has many more uses besides these. To put it briefly, rattan is a garden or forest product which is used everyday by people and almost every house has a store of rattan available for use whenever the need arises (see Table 15).

Table 15  
Rattan Use by Type in Lambing and Benung

Rattan Type (Local Name)	Uses
<i>Sega and seletup</i>	Mats, <i>anjat</i> , cane, <i>belawit</i> , <i>keliwai</i> , baskets, bags, filter for coconut milk, binding for houses
<i>Pulut putih</i>	Binding for houses, <i>keba</i>
<i>Pulut merah</i>	<i>Anjat</i>
<i>We mea</i>	Flooring, <i>anjat</i> , cane, <i>keliwai</i>
<i>Beuyang</i>	<i>Keliwai</i> , binding for houses
<i>Tuu, ngeno and kesole</i>	Chairs, canes and sticks
<i>Siit batu, kotoq and kotoq mea</i>	Flooring and <i>lampit</i>
<i>Danan and danan tai piak</i>	Plaited fish traps
<i>Siit, siit telaus and siit pemayo</i>	Medicine for backache (the root), food (top and innermost fronds)
<i>Deneq</i>	Flooring, all purpose string
<i>Kehes and soken tena</i>	Binding material
<i>Jua longai</i>	Plaited fish traps, bird cages
<i>Jua biasa</i>	Food (top and innermost fronds), house flooring
<i>Siit beraqung</i>	Chairs, destruction of mice (by burning the rattan)
<i>Geranang</i>	Dye for rattan handicrafts (the fruit)
<i>Peles and peles belang</i>	Binding for houses, <i>keba</i> and fish traps
<i>Lulu, lulu temanyir, we bura and we ikuniangkis</i>	<i>Keliwai</i> , <i>anjat</i> , canes, string
<i>Jahep and remorou</i>	Mats, <i>anjat</i> , canes, <i>keliwai</i>
<i>Jepung</i>	Material for handicrafts and for sale
<i>Yaa</i>	Food (top and innermost fronds)

Source: Primary data from Lambing, Tempedas and Benung, 1996.

There are several types of rattan that are highly sought after by buyers, mostly from outside the area. It is therefore is one of the most important sources of cash income for the Benuaq. According to local people, however, the price of rattan is falling if compared to prices before 1990, when dry *sega* rattan was worth Rp 2,500 per kg at the village middleman level. The rattan types which are bought and sold, are listed in Table 16.

Table 16  
Types of Commercial Rattan

Rattan Type	Price (Rp/kg wet)	Price (Rp/kg dry)
<i>Sega</i>	300-500	900-1,500
<i>Pulut Merah</i>	500-1,000	--
<i>Seletup</i>	300	--
<i>Jahep</i>	250	--
<i>Kehes*</i>	200	--
<i>Jepung</i>	1,500-2,000	3,000-3,500
<i>Peles*</i>	1,000	--
<i>Inei</i>	1,000	--
<i>Tuu**</i>	--	class A: 500 class B: 350 class C: 150
<i>Manau**</i>	--	class A: 500 class B: 350 class C: 150

Source: Primary data, Lambing, Tempedas and Benung, 1996.

\* A type of rattan which has almost disappeared because the area where it once grew profusely has been entirely cleared for logging concessions and timber estates.

\*\* Calculated per piece  
Class A diameter same as a large sized battery  
Class B diameter half the size of a large sized battery  
Class C diameter the size of a thumb.

Because several types of rattan have an economic value or price, the cutting of rattan brings income opportunities not only for the owner but also for the cutter. Owners of rattan gardens who cannot cut the rattan themselves can entrust the job of cutting to another person and then share the produce. The regulations for sharing produce are as follows:

- If the rattan garden is an inherited one, produce is divided into 3 shares for the owner and 7 shares for the cutter.
- If the rattan garden has been planted by the owner him or herself, produce is divided equally with 5 shares for the owner and 5 shares for the cutter.
- If women are involved (and this often occurs, with cutting usually done in groups), then the produce is usually divided into 4 shares for the owner and 6 shares for the female cutters. This is done because women often obtain less produce than men.

The harvest period or first cutting of rattan can be carried out after it is aged between 7 and 9 years at least, while the following cutting can be done after a lapse of 3 or 4 years. To preserve the rattan area, other trees must be present as supports for the rattan plants, and hence the owner will maintain existing trees. This further supports the concept of conservation found in Benuaq society. Several types of work available in the cultivation of rattan can be seen in Table 17.

Apart from rattan, honey is another resource used by the people. There are a number of tall, large, clean trees described as *tanyut* or honey trees, which grow in the forest or in fields and gardens and in which bee hives can be found. Many of these trees grow naturally but are tended carefully and thus become personal property, but they can also be planted. Each honey tree has its owner or heir. For the Benuaq, the presence of a branch from a honey tree in an area of forest land is interpreted as proof of ownership and control of an area of customary forest. Characteristics which identify a honey tree which is already owned or controlled by someone include the presence of a small ladder known as a *pantak*<sup>65</sup> embedded along the tree's trunk, or ropes to climb.

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<sup>65</sup> A *pantak* consists of sticks of *ulin* or another hardwood around 35 cm long, which are embedded into the trunk for about 10 cm up to the first branch to aid people in

Table 17  
Wages for Rattan Processing

Type of Work	Wage (Rp)	Workers
Cleaning/planing	20 per piece	women and children
Rubbing	20 per piece	women and children
Tying	1,500 per tie	men
First curing	not paid	men
First drying	3,500 per day	women and children
Second curing	not paid	men
Second drying	3,500 per day 500 per pack	women and children
Final packaging	1,500 per pack	men
Transport to ship	500 per pack	men

Source: Primary data, Lambing, 1996.

Honey can be harvested only once a year, during the season when the forest fruit trees are blossoming. The best honey comes from the flowers of the *meranti* tree. The amount of honey harvested at any given time is dependent on the amount of flowering vegetation during that season.

climbing the tree. The ends of the ladder are connected by a rattan rope so that it does not come free quickly. A honey tree usually needs at least 50 of these *pantak* sticks, depending on its height. The *pantak* can be used to determine the age of a *benggeris* tree and the length of ownership or control over it. In time bark grows over a line of *pantak*; if each *pantak* is covered to its tips or has been taken over by branches, it can no longer be used. Then a new *pantak* is made. The covering over of the *pantak* by bark, especially in the case of the *benggeris* tree, takes around fifty years. It is said that in Dilang Puti there are several honey trees on which the *pantak* have been replaced four times, which means that the trees have been owned or under someone's control for around 200 years.

The honey season begins in the middle of the flowing season and continues until the flowers ends. According to observations made by local people, the quantity of honey produced by honey trees varies according to the type of tree. Table 18 shows the number of hives according to the type of honey tree and average produce obtained each season over the last few years.

Table 18  
Types of Honey Tree and Output of Honey

Type of Honey Tree	Number of Hives Per Tree	Amount of Honey Per Hive (in liters)
<i>Jelmu</i>	5 - 180	10 - 20
<i>Benggeris</i>	4 - 50	10 - 20
<i>Bilas</i>	5 - 60	10 - 20
<i>Aput</i>	5 - 60	10 - 20
<i>Putang</i>	5 - 60	10 - 20
<i>Kapur</i>	5 - 60	10 - 20
<i>Keranji</i>	4 - 10	10 - 20
<i>Jengan</i>	10 - 100	10 - 20

Source: Primary data, Lambing and Benung, 1996.

At the time of research, the price of honey per liter at the local level was Rp 5,000. Another product produced from bee hives is beeswax. Currently, the price of beeswax is around Rp 7,500 to 8,000 per kg, depending on its quality. From three or four hives, it is possible to obtain one kilogram of beeswax. Beeswax has many different uses, for example, in the *beliatn* ceremony, as fuel for torches, as a charm or medicine for the sick and as an ingredient in hair oil mixed with candlenut. Honey is collected in groups called *sempekat* which consist of between two and 25 people. The honey is then divided equally among all members of the group.

There are indications that honey production is tending to decline. Besides reasons of belief<sup>66</sup>, it seems that the decline is related to the reduction in the amount of honey trees and flowering plants in the forest due to destruction and damage of the environment, mainly from extensive clearing of forest for logging concessions and timber estates. According to information obtained around Lambing and Benung, more than 500 honey trees have been cut down by logging concession projects and timber estates. Even if the honey trees themselves had not been cut down, honey production would be no greater because many of the flowering trees which produce nectar have also been destroyed.<sup>67</sup>

The community feels that even materials for house construction are now declining in availability. Where they still exist, they are difficult to obtain and must even be purchased. People believe that this is a result of the activities of logging concessions and timber estates, which have taken over the forested land. A portion of the communities' wood is taken by logging concessions because of its economic value, and the rest is thrown away because it is seen as wood of poor class.

The animals that are usually reared by the Benuaq in Lambing and Benung are pigs, chickens and goats. Some individuals with enough money raise cows or other large livestock. Animal pens are located behind the house, if it is an individual house, or in the case of a long house, underneath at the back. During the day the animals are left to roam freely around the long house or village. In Lambing, however, pigs may not wander at will in the housing area, reflecting the fact that not

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<sup>66</sup> According to beliefs, there are no flowering and fruit seasons because the earth is getting "hotter" as a result of many human activities which are not in accordance with the Supreme Power's regulations, or violate customary law. It is believed that this has made the controller of nature angry, who has then given warnings through hotter earth temperature. To overcome this matter, the Benuaq must perform the *ngugu tahun* or *nalitn tahun* ceremonies to clean up the behavior of humans so that the controller of nature will return its blessings.

<sup>67</sup> Information from the Bentian area indicates that honey production began to decline in 1985, when many *meranti* and *kapur* trees were cut down by a logging company. Before the presence of logging, a minimum of 20 liters could be found in a hive but now, the maximum output of a hive is around 20 liters.



all of the people living in Lambing are Dayaks.<sup>68</sup> As with farming products, animals are mainly used to fulfill individual needs. Kept animals are usually killed if there are guests or important customary or religious activities.

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<sup>68</sup> Many are of Bugis or Javanese origin or come from other Islamic areas. Out of respect for those who do not eat pork, the Dayaks in Lambing have stopped letting their pigs run loose in the village.

# **PART** *three*

## **THE IMPACT OF THE FORESTRY INDUSTRY ON THE LOCAL COMMUNITY**

### **Disputes over Land**

The tribal Benuaq people who live in Lambing and Benung have had interaction with logging concession companies for a relatively long time. The PT KU logging company is currently operating in the Lamping area, while PT TD operates in the Benung (Idaatn) area. The arrival of these companies was accompanied by the coming of migrants, forest clearing for overland transport infrastructure, the opening up of isolated areas and the appearance of new dynamics, including new activities related to economic, social and cultural aspects of local life. It seemed that with the opening of access to the area, the local people and the companies would both benefit. The former could sell part of their produce, especially foodstuffs like rice, fruit and vegetables, to the companies and in that way the companies themselves would not encounter difficulty in obtaining essential goods.

If we look more closely, however, the presence of these companies brought more problems than benefits to local communities, especially in relation to control over forest land, for the companies “worked” land that was part of the customary forest area of the Dayak people. In their operations they destroyed rattan gardens, killed honey trees, chopped down plants belonging to the community and cut off access to the forest resources that formed the bio-social and cultural source of life for the

local people. Today the operations of the concession holders, including logging areas, road networks, log piles and timber estates, are getting increasingly closer to the villages themselves.<sup>69</sup>

Many company activities directly relating to the interests of local communities have not been previously discussed with the latter. The companies often utilize the legal authority of the subdistrict head, the village head, the customary law chief or even the military to hasten “agreement” between the company and the community. When discussions are held or where agreements exist, they are completely engineered toward gaining approval of the concepts offered by the logging concessionaires. A company often imposes its wishes by relying on a letter of agreement signed by the village head or customary law chief, as the representative of the whole tribal community, without the prior knowledge or agreement of the community itself. Within the Benuaq community, discussions that involve all components of the customary law prevailing in that community represent an important aspect and indeed the very essence of management and transfer of customary rights. Discussions, which always involve a series of ceremonies, are one of the wisest forms of entry for a company so that economic yet environment-friendly methods of forest management can be considered. Taking short cuts that do not involve the agreement of the local people encourages various forms of opposition which benefit neither party. Initially, local communities kept quiet, because they chose to remain tolerant while at the same time observing the orientation of the newcomers, who, it seemed, were always secretly acting on behalf of the government. Now there are quite a lot of parties in many different places with the courage to complain to the relevant agencies about company activities that harm the community.

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<sup>69</sup> For example, Penarong, a village on the lower Dilang Puti River in the Greater Bentian region, has experienced a tragic fate as a result of timber estate development to within 500 meters of the edge of the village. The village people cannot carry out their daily activities freely and even to reach their fields they must first get permission from the security guard, because they need to cross the timber estate. This is also the case if they want to collect firewood. Thus the local people have become strangers in their own environment (Nuripto and Ginting, 1996).

In Benung, for example, customary forest land belonging to the Dayak Benuaq has been worked by PT TD since 1989. Initially, the community accepted the presence of the company on condition that it did not violate customary laws and helped the local people to develop their economic potential. The people once requested that a road be made from the company's base camp in the forest to the village of Benung, taking the closest route. They asked for the road in order to make the transportation of forest products to the village easier. This request, however, was never fulfilled; in fact, on the contrary, the company cut down all the *tengkawang* trees belonging to the community.

The local community protested against the felling of these trees, but when their complaints were not heard by the company, they complained to subdistrict authorities. After a long wait they finally received advice from the latter that it would be better if the community did not continue its complaints because the work being done by the company was part of a development program. Persons who voiced their grievances even received a number of threats. One particular threat, the source of which is unclear but which is still very real among the community, states that "*Whosoever prosecutes the company opposes development, and that also means opposing the government*". This threat resulted in the people finally canceling their legal prosecution of the company. Their problems were never discussed again until the company finally abandoned the swampy Idaatn area because the potential for commercial timber had been exhausted.

Meanwhile, in Lambing there are two concession companies that have been contracted for logging, namely, PT RM and PT KU. At the time of research there was even a mining company that was commencing coal extraction operations in the Begai area upstream of the mouth of the Lawa River. These logging companies had carried out a survey and were in the middle of deliberations with the community. Actually, both enterprises operate mostly in the area of customary forest owned by the Bentian people in the Dilang Puti area. However, the road infrastructure at the log collection point downstream disturbs the area of customary forest belonging to the Benuaq who live around the Lawa and Kedang Pahu Rivers. Both companies have made roads from the logging block

to the logpond on the Kedang Pahu River, located in Benggeris approximately three km by river from Lambing.

Conflict between communities and companies has occurred because of different views concerning resources, particularly forest resources, as well as the vastly differing opinions about forest management, methods of proving management rights and interpretation of the law. Besides this, there are also differences in orientation, especially relating to growth and conservation, which are the starting points in the management of forest resources. The differences in perception about the appointment of a legitimate or legal yet efficient actor to manage forests and provide direct benefits to state authorities are even greater. Another problem is the stigma often imposed on local people who defend their rights and carry out systematic advocacy using a variety of media. These stigmas can take the form of name-calling, for example, “illegal cultivators” and “forest nomads”, but the worst stigma is to be labeled a member of the former Indonesian Communist Party or PKI, as this results in isolation and even loss of civil rights for the community. Various bureaucratic services are cut off or made difficult. Those who are stigmatized are regarded as disturbing the development process. Politically, this stigmatization and labeling has changed the status of tribal communities from that of legitimate and respected people to that of “disturbers” who must be isolated from wider society.

The presence of the two companies operating in Lambing and Benung has both directly and indirectly led to a seizure of the rights of tribal people over forest land. The first company, whose activities are seen as detrimental to the local people, is PT GPI, a private business that plans to establish a timber estate of 20,000 hectares on customary land. PT GPI's intention of taking over all the customary land along the Lawa River constitutes a serious threat to the existence of tribal people because it will destroy the rattan and fruit gardens which form their main source of livelihood and which are located for the most part in a strategic area on both banks of the Lawa River. The second business is PT AIC, a plantation company which has obtained a location license for an oil-palm plantation on 50,100 hectares of land, which embraces 21 villages in the subdistricts of Muara Pahu, Muara Lawa and Bentian

Besar. Rattan and fruit gardens as well as stretches of customary land belonging to tribal people will certainly be destroyed by these projects.

Community response toward the various activities and “development projects” undertaken by private companies in the forestry sector is varied. Generally, there is a group of people who agree to and accept the presence of companies and all their activities and another group who oppose the presence and activities of companies in their area. This condition has introduced the dynamics of “new” relations between members of the community. It is not uncommon for horizontal conflicts to occur within the community itself to the point where social cohesion and solidarity are gradually eroded. A land dispute between two families in Tempedas and Bomoï in the Lambing area, related to plans for the development of coal mining, is an example of this kind of conflict, as the following outline of the disagreement shows.

*According to information from a number of parties who know about the case, the persons involved in the dispute have family ties, both ancestral and by marriage. The conflict revolves around the question of a piece of land which will be affected by a coal mining project. The family from Tempedas claimed that it has ancestral rights over the disputed area while the family from Bomoï argued that it has rights over the same land stemming from marriage. Each insisted, with various kinds of evidence, explanation and witnesses, that the area was theirs and each complained about the problem to the customary law chief in Lambing. After bringing the problem to this person, both parties agreed to solve it according to family and customary law traditions with the customary law chief and local community leaders as witnesses. For this purpose a time and place were agreed upon, along with the conditions that had to be fulfilled. Each party would present all signs or proofs of ownership or control and bring witnesses who knew each family's origins and the history of the disputed area. It was agreed that the evidence would be examined in Lambing due to its neutrality and proximity to the subdistrict government office.*

*The day of examination arrived, with the customary law chief and local community leaders ready. The family from Tempedas was present with all conditions fulfilled, but the family from Bomoï was nowhere to be seen. At the determined time, the Bomoï family had*

*still not arrived. Suddenly there came a messenger who stated that the Bomoi family did not want to come because they believed the customary law chief was no longer neutral. He was considered biased towards the Tempedas family because of the conditions that he had proposed. Unilaterally, they entrusted the case to the subdistrict authorities as government representatives. All the parties present, especially the customary law chief, were disappointed with the attitude of the Bomoi family. The whole incident was seen as humiliating for the institution of customary law, which should be respected by all members of Dayak society.*

Another example of land disputes concerns a member of the Benuaq Dayak community who lives in Peninggir, a Benuaq village on the banks of the Kedang Pahu River, and a Kutai person. The case is as follows.

*According to information from several key sources, the individual from Peninggir owns around six sq. km of inherited land in the Peninggir area. Around 1970 a logging company called PT MT was operating in this area, and when it shut down operations, the land was returned to the family of this person because it was indeed their inheritance. The land was then planted with various species of rattan. Then some time later (the exact year is unclear) a member of the Kutai ethnic clan from the village of Jerang Melayu, a village located on the banks of the Kedang Pahu River, bought one hectare of land close to the inherited land described above. The transaction was witnessed by the local village authorities and many people acknowledge that only one hectare was bought.*

*For a while there were no problems. Then out of the blue, around December 1995, the Kutai person made claims of ownership over the six sq. km on a basis of inheritance rights and previous purchase of the land. The area claimed took in all the land owned by the man from Peninggir; in fact, even the land under his house was claimed. The Kutai man asked for money as rent for the land on which the house was built as well as for the rattan gardens. If the rent was not paid, he said, the house and rattan gardens would be taken by force. He was able to bring in military and police to back up his claim.*

*According to informants, this land is due to become a timber estate.*

Another instance of land disputes involves two villages in the Idaatn region and concerns village border claims based on the customary forest laws of each village. At the time of research this case had not yet blown

up, but it could explode at any time. It seems that the case correlates with inclusion of the land of the two villages as part of the concession area held by PT TD. As previously mentioned, the area has little potential for commercial timber exploitation; however, it turns out that there are plans for it to become a timber estate. The dispute over village borders and areas of customary forest is clearly related to each village's desire to obtain compensation for the land needed for the proposed project.

Generally, conflict within communities is related to the interests of two different groups, that is, the community members who want to maintain their areas of forest land and the small group of people who are prepared to surrender all or part of their land for various projects. The latter are usually supported by the local government, including the military.

### **Declining Access to Forest Products**

The presence of concessions, logging companies and other businesses, apart from causing the clearing of customary land, has also cut off the local people's access to non-wood forest products. Up until now there has always been a bias in favor of timber among concessionaires, and the forest has been seen as a producer of this commodity, even though there are many more resources of value which have not been taken into account. The Dayak people value these other resources and feel that companies see themselves as the one and only master of the concession areas. The companies and their institutions often violate government regulations by cutting down protected trees and clearing rattan gardens belonging to the people. The government and private enterprise alike still regard rattan as a weed, even where it has been deliberately planted by local people on unused agricultural land.

Cutting off the local community's access to the forest has meant that income opportunities from non-wood forest products have also been done away with. The situation has been exacerbated by the use of "foreign" workers, that is, non-local labor. Only a very small proportion of the local labor force is absorbed by these companies. Even if locals are recruited, they are employed merely as laborers. Although the



positive effects of the presence of logging companies and timber estates for local people in terms of work and wages cannot be ignored, they tend to be limited to the local elite. There is almost no contribution to the local economy and whatever is given is more in the nature of charity than anything else. Logging concessions and everything associated with them form enclaves in the interior, with benefits and profits flowing to other regions.

The visible decline in forested areas and in the local people's access to forest resources impacts significantly on local incomes, which are falling. For East Kalimantan there are not yet any detailed accounts, but West Kalimantan can be referred to for purposes of comparison. According to Alqadrie (1992), income reduction for the Dayaks of West Kalimantan can be seen from a comparison of average income per month before and after logging concessions began operations. During the 1963-65 period the average income of the local population was Rp 42,655 (US\$102.79) from the agricultural subsector, of which Rp 11,375 (26.7 per cent) came from farming, Rp 17,062 (40 per cent) from forestry, and Rp 14,218 (33.3 per cent) from smallholder cash crops. However, the average income of the local population during 1990-92 was only Rp 88,750 (US \$46.71). If calculated in rupiah, the earlier period was Rp 46,095 lower than the 1990-92 period but if income is expressed in terms of the US dollar, then the average income of the population in the earlier period was higher by US \$56.08. The decline in farming sector income was 40 per cent, in forestry income 20 per cent and in cash crop income 40 per cent. The drop in local income in 1990-92 compared to 1963-65 was caused not only by inflation but also by a decline in the forestry subsector as a result of reductions in the forested area and prohibitions on local people collecting forest products. The same situation has occurred among the East Kalimantan people in the present study.

The destruction of trees surrounding the research villages as a consequence of the forestry industry and in particular the establishment of timber estates, which have totally removed the original forest, has caused the disappearance of various forest products such as rattan and honey. The loss of the *meranti* tree has meant the loss of food for bees and a fall in the quantity and quality of local forest honey. It has also

meant the loss of resin, which is obtained mainly from the sap of this tree. Such is the case with *manau* rattan, which used to be a source of local income. Table 19 shows some of the impacts caused by forest exploitation.

Table 19  
Local Opinions Concerning Forest Exploitation

Type of Exploitation	Consequences
Timber estates	Destruction of all resources once available in the forest
Logging concessions	Destruction of forest products such as honey, resin and rattan
Mining	Air and water pollution
Plantations (including Nucleus-Smallholder Estates)	Destruction of all resources once available in the forest and forced changes in patterns of livelihood of the local people.

Such is the extent of the effects of forest destruction for the Benuaq people that they express their disappointment in words like these: *“The actions of the companies are worse than those of the Japanese and Dutch colonial powers. The colonialists took only our possessions, while the companies have destroyed all the wealth of our society. There aren’t any reprimands from the government, but the people are always blamed. If the people make a fuss, down come the mobile police and the yellow jackets (local government authorities)”*

For some time now honey collectors in both research villages have experienced a reduction in income. Before the destruction of the forest, a Benuaq honey collector could obtain around 200 liters of honey a season. Now that large numbers of honey trees have been cut down, their income is declining, for today they get only around 100 liters per season. The reduction in income from honey is made worse by the decline in the purchasing power of real income compared to the price of

basic needs. In the village of Benung, although there is still primary forest to be found, the income of honey collectors is also declining as a result of the destruction of surrounding forest areas by projects such as the timber estate in Bentian.

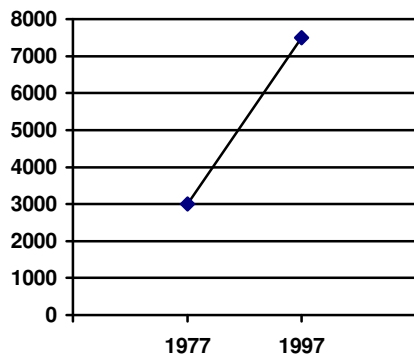
The experiences of a honey collector

*Kedem (35 years old) is a member of the Lambing village community and has worked as a honey collector for 20 years, since he was 15. He collects honey not only from the forest surrounding his home but also from the forest in the vicinity of Bentian and Jelm Sibak. During the honey season, he spends weeks looking for honey. Today, after long years of collecting honey, Kedem feels that the amount he can obtain is constantly declining.*

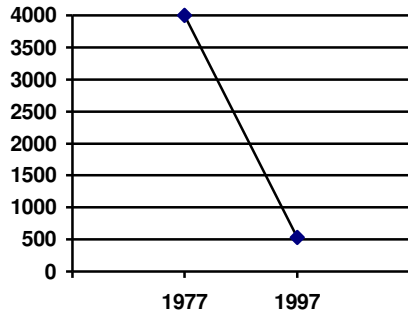
*In 1977, when Kedem first began work as a honey collector, as many as 100 bee hives could be found in one tanyut or benggeris tree (a tree that is often called the honey tree). From 100 hives he could obtain around 20 cans of honey, though in fact he often collected up to 40 cans. There was a large amount of honey in the trees then because the forest had not yet been destroyed. There were still many meranti trees, the flowers of which produce good quality honey. There are two honey seasons each year, the first in October - November and the second in March - April. In one season Kedem could collect at least 200 liters of honey. With an average price of Rp 3,000 per liter at that time, he could earn Rp. 600,000 in one season. In those days an income of this size was equal in value to 4,000 kg of rice, which was worth Rp.150 per kg. Because of the earnings he could obtain in this way, Kedem considered honey collecting his main source of income apart from agriculture, which enabled him to meet his basic food needs.*

*These days, logging concessions, timber estates and other forms of forest exploitation have led to the destruction of the forest. The most tragic causes of loss of honey sources are smoke from forest fires and timber estates, which have felled all the tanyut and other flowering trees on which bees thrive. This destruction has taken place in the honey areas, that is, around Bentian. Apart from damaging the tanyut trees, the smoke has also caused a drop in the productivity of the bees.*

*The consequence for Kedem has been a decline in income. In the last few years he has been able to collect only about 100 liters of honey per season. In cash terms, with an average honey price of around Rp 7,500 per liter (occasionally reaching Rp 10,000), he can earn between Rp 750,000 and Rp 1 million per season or Rp 2 million per year. This seems quite a large amount of money. If, however, it is compared to the price of rice, which is now Rp. 1,400 per kg, this income is equal to only 530 kg of rice. Although his real income has declined, Kedem still continues to collect honey to pay his child's school fees.*



Graph 1  
Changes in honey prices 1977 -  
1997 (Rp)



Graph 2  
Value of honey in terms of rice (kg)

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As a result of reduced access to the forest and the continued destruction of surrounding forest areas, there has been a shift in the source of family incomes over the past two decades. Up to the 1960s and the beginning of the 1970s (before the arrival of logging concessionaires), the main sources of income for local people were farming, forests and gardens. Farming was important, as it formed the source for the supply of basic foodstuffs, namely, rice, corn and cassava. Meanwhile, the forest was a source of additional income, because the people could obtain not only wood but also other products such as rattan, resin and honey. These commodities sold extremely well in markets. From their gardens people could obtain fruit and rattan for both home consumption and sale.

Table 20  
Main Sources of Income for the Lambing and Benung  
Communities

Before Forest Destruction	After Forest Destruction
(1) Agriculture	(1) Agriculture
(2) Forest	(2) Gardens
(3) Gardens	(3) Forest

Since the arrival of companies which have cut off the people's access to the forest, there has been a shift in income sources from the forest to gardens. For example, rattan was previously collected from the forest as

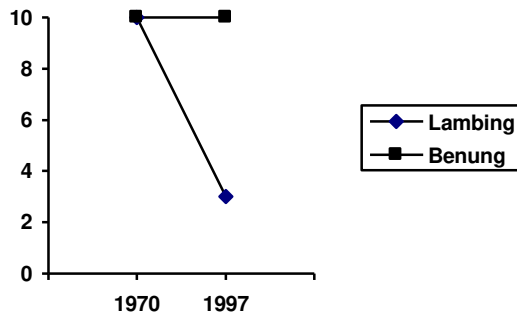
well as cultivated in gardens. Since the appearance of the companies, the people have no longer been able to collect rattan or other products from the forest. Nowadays, they can no longer rely on the forest as a source of income. Today very few people in Lambing depend on the forest for their livelihood.

### **The Declining Size of Controlled Land**

For the Benuaq people, who are well acquainted with the shifting cultivation pattern, the forest is the most important resource in their lives, just as it is for the majority of shifting cultivation societies.. In shifting cultivation, fields which have been cultivated for some time are left to return to forest (*bengkar*). Thus, land use strategies are relatively constant from one stage to the next. Small changes occur only as population grows and new land is required for cultivation.

In terms of control over land, the Benuaq use what is known as the *eway tuelatn* system in which a stretch of forest is controlled by one particular family or ancestral line. In this area there is usually a resource which can be utilized, such as rattan, fruit trees or honey trees. This land may not be used by another person without permission from the owner. *Eway tuelatn* can also be an area of reserve land for cultivation purposes if the time comes when the owner feels the need to clear more agricultural land. This usually happens if the existing land is no longer sufficiently extensive or if its fertility has declined. In Lambing, which has no significant stretches of forest, people can no longer clear new land for cultivation. This means that the amount of land that can be controlled by local people is steadily shrinking and that land-use cycles are becoming constantly shorter. As a consequence, the level of fertility is declining because the capacity of the soil to produce crops is no longer adequate. The situation is different in Benung, which still has forested *bengkar* areas. The existence of surrounding forest makes it possible for the local people to clear new agricultural land if and when they need to. The shifting cultivation cycle is also longer and can be as much as 20 years.

Graph 3: Average ownership of *simpukng*



A case study of reduced control over land

*Zainal (45 years) is a farmer in Lambing village. On average he cultivates around 3 hectares of land a year. He cannot say precisely how much land he controls, but what he does know is that he has six gardens. Each garden is approximately 1 hectare in area. One day he will bequeath his gardens to his six children, giving one garden to each child .*

*Zainal feels that nowadays the opportunity to obtain land is extremely limited. This is due to population growth and also to lack of access to land that can be cleared. This lack of access is due to the presence of logging companies, which control most of the land. There are many people in Lambing who no longer have forested land. Some have tried to clear land in another village (Lotaq) for cultivation purposes, but the latter is located at a considerable distance from Lambing. People who own fields in this village are usually away from home for several days at a time working the land.*

*The difficulty in obtaining forested land for new fields in conjunction with prevailing inheritance patterns has, according to Zainal, caused a decline in the average area of land controlled by people in Lambing. He believes that nowadays the average size of gardens and fields controlled by each family in Lambing is about the same as that of the land he controls. In the past, however, his parents were able to control a far wider stretch of land than he does today. At the same time, as the area controlled by each family becomes smaller, the*

*cycle becomes shorter and the land is soon brought under cultivation again. Sometimes land is recultivated after a fallow period of only three to five years, which results in lower fertility. In the past, periods of land rotation could reach 20 years or more. The consequence of this is a reduction in production levels.*

Table 21  
Control over Land in Lambing and Benung

Variable	Lambing	Benung
Average size of land controlled	There has been a drastic decline in the size of land controlled, because there is less land that can be converted to fields, while population is increasing. The area of gardens averages between 1 and 6 hectares.	No decline has yet occurred because of the existence of a reasonably large reserve of customary law land for farming, while population growth is not particularly rapid. Hence the size of controlled land can be maintained. The average area of gardens is > 10 hectares.
Rotation in land use	The rotation period for cultivation is growing shorter (around 3 to 5 years).	The rotation period is reasonably long (10 - 20 years).
Work relations in land management	There is still mutual assistance in the management of farm land, but paid work relationships are emerging, for example, in cutting and logging.	Patterns of mutual assistance are still strong. Control of labor is far more important than control over land.
Solutions to land problems	Formal law is used.	Customary law institutions are used.
Sale of land	A tendency to buy and sell land for housing sites, gardens and fields is emerging.	There is no evidence of a tendency to sell land.

Source: Primary data, 1996.



The declining average size of land under control has been worsened by land acquisition for the construction of connecting roads or other facilities needed by businesses. One mining company, for example, plans to build a road 150 m wide and 27 km long (thus taking more than 400 hectares of land). This road will pass through the rattan and fruit gardens of the local community. The people have opposed the building of this road because it will mean a further loss of their ever-decreasing sources of livelihood.

The negative impact on the local people's economy has been exacerbated by discrimination against local people in the recruitment of office staff and laborers. Only a very small number of people who live in the vicinity are employed in logging companies, compared to the percentage of workers from outside the area. Those local people who are given jobs work as unskilled laborers with daily and contract status.

### **The Work Force**

The employment opportunities extended by logging companies to the local people are minimal. Those that are offered represent a mere formality to fulfill requirements set down by the local government and the work involved is physically demanding and badly paid. Generally, this type of work is considered to have low status. It involves activities like exploring the forest, felling trees, removing bark from logs and piling up timber. According to the local people, this heavy type of work is often referred to as "rough" work. There is no prestigious work available for local people; indeed, the opportunity to become a member of the administrative staff is closed. Meanwhile, work which is considered "higher" in status, such as that of a bulldozer operator, truck driver, foreman or manager is extremely limited, and when opportunities arise, they are given mainly to workers from Samarinda and Balikpapan, and even to people from places outside Kalimantan, most of the latter being people from Java.

The impression emerges that this distinction between "rough" or "unskilled" and "higher" work is a consequence of the educational levels of workers. Unskilled workers generally have only a primary

school education or, at the most, they began junior high school but did not finish. Meanwhile, “higher” workers usually have a high school education or more. In general, the unskilled workers employed by logging companies are males aged between 18 and 35 years. Most of them do not yet have families and are still single. The “higher” workers are usually older and are generally married with families.

Recruitment of unskilled workers is usually, though not always, reported to the local government agencies and then announced to the whole population. Primordial alliances often play a part in the recruitment process. There is a tendency for foremen to employ workers of the same ethnic group, or those with certain relationships to the foremen themselves, even if those employed have insufficient skills and low educational levels. Neither experience nor expertise, and certainly not education, is required for unskilled jobs. The people needed are those who are physically strong. Unskilled workers are usually given a contract based on the type of work available at the time. Contracts vary in length from one to six months.

The unskilled work offered to the local population includes the following:

1. Cruising or surveying, which consists of:
  - Arranging the work area, which means making and marking logging blocks covering one square kilometer in the forest.
  - Making an inventory of trees before logging, which involves marking trees to be felled and not felled in the logging block, according to logging targets for that year.
  - Road surveying, which is seeking and/or making good tracks that can be made into main roads to and from the logging block.
  - Making an inventory of stands of trees not logged, which means calculating the potential trees which will be left uncut after logging, and clearing the remaining stands of weeds.

Cruising or surveying is a large-scale activity and usually undertaken by a large group that sometimes consists of up to 40 workers, who are coordinated by a survey foreman. They are paid Rp 5,000 per day, with health facilities provided for the length of the contract, along with food

and tarpaulins to make temporary shelters while working in the forest. It can be noted that at the time of research the price of one liter of kerosene in inland villages had reached Rp 3,000 to 3,500. Cruising usually takes between two and three months or the equal of 60 to 90 days of work in the forest. The employees' working status is that of ordinary laborers who will not be re-employed after the project has finished.

## 2. Logging

Formally, logging is done selectively in accordance with the Indonesian Selective Logging System (TPI). Only trees previously marked are logged, according to the year's logging targets. Payment for logging is determined by the volume (in cubic meters) of timber in the log pond. Trees that have been felled but not taken to the log pond are not counted. Workers are paid Rp 1,200 to 1,500 per cubic meter. An average of 25 trees can be felled in one day, with each log varying from 5 to 10m<sup>3</sup>. Logging is done by at least two people, one to operate the chainsaw and another to assist. The assistant is the full responsibility of the operator and is paid between Rp 100 to 250 per m<sup>3</sup>. The chainsaw is the worker's own responsibility and he bears all operation costs. If the chainsaw is supplied by the company, fuel costs are taken from his daily wage.

## 3. Removal of bark

Wages for the task of removing bark are paid according to the volume of bark that is stripped. A worker is paid between Rp 250 and 500 per cubic meter. All bark removers are men and the job is usually contracted to a group consisting of between five and ten people. In a day it is possible for one person to strip approximately ten tree trunks, which amounts to between 5 and 10 m<sup>3</sup>. This work is not always available as it depends very much on logging activities and on the weather. On average, a man can earn between Rp 100,000 and 300,000 per month from this form of employment. Workers do not receive any facilities whatsoever.

#### 4. Planting of timber estates

Planting of timber estates (HTI) is done on old logging blocks. The trees usually planted in timber estates include *sengon*, *akasia* and *gamelina*. Available work includes preparing the land to be planted, which consists of cutting wood or clearing the land and burning the remains. The cleared land is then marked and holes are made for the planting of trees. This work is generally done by men but sometimes women are involved in marking and making holes. Jobs done specifically by women include preparing and putting the seedlings in polythene bags, selecting and tending the seedlings, planting, pulling out and replacing dead seedlings and fertilizing the young trees. Tending in the form of pruning branches and twigs is done by men.

This work is usually done in a group of around ten people, including both men and women. The payment system uses contracts. Wages are paid according to the number of trees planted; for each tree planted the worker receives Rp 75. Making holes is worth Rp 75 to 100 per hole. To cut or clear the potential timber estate area, a worker is paid between Rp 4,500 and 5,500 per hectare. If done in groups of ten, the clearing of one to two hectares can be completed in a day. Felling the larger trees is usually done by a group of one to four people using chainsaws. The rate for felling is Rp 65,000 per hectare. In one day each person can fell the trees on one hectare. If the worker owns the chainsaw that he uses, the company pays for fuel, while for the food and cigarettes that he receives, the worker is usually given a bill, meaning that he must reimburse the company. In principle, unskilled jobs are subcontracted to a subcontractor. These subcontractors are “free” workers whose labor rights are not guaranteed by the logging company.

The following occupations are considered “higher” in status:

##### 1. Tractor operator

The work of a tractor operator is considered higher in status than logging and the removal of bark. An operator is paid Rp 15,000 per eight hours of work, while each hour of overtime is worth Rp 1,000. There is a maximum of 10 working hours per day. These workers are

usually rotated with others. A tractor operator is helped by an assistant who is paid Rp 5,000 to 7,000 per day. Most of those employed as tractor operators are from Samarinda or Java. They are given lunch and sickness allowances as well as transport to and from work every day, and they have the status of monthly or even permanent workers.

## 2. Logging truck operator

Truck operators are paid Rp 5,000 per eight hour day, with Rp 1,000 for each hour of overtime. They are also classed as higher in status than loggers or bark removers, but are considered lower than tractor operators. They are provided with lunch and health allowances. The trucks that they drive usually have a 45 m<sup>3</sup> capacity. These drivers too are mainly from other areas, although there are local people who are given the opportunity to become truck operators.

The work offered to locals is usually extremely limited. According to information from the village head of Lambing, no more than 23 indigenous inhabitants of Lambing were recorded at the time of research as being employed by logging companies or other businesses contracted by the logging company. They are all laborers, are aged between 20 and 30 years old and do not have families of their own. Meanwhile, in Benung there are no people working in logging companies, because at the moment there are none active in their area.

According to information from the village head and the customary law chief, there are many local workers who have become sick, and some among them who have even died, upon their return from the forest. It is believed that those who have become ill or died have been given a “punishment” because they have entered sacred areas where clearing is forbidden. There is a widely known story that those who see, encounter and open a *tempelaq koko* or burial place of a dog in the sacred forest will not live long and will die upon their return to the village.<sup>70</sup> The men

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<sup>70</sup> Legend has it that there was once a beloved dog which died after being accidentally killed by its owner’s wife because she thought that it had killed her husband. The carcass of the dog was then given a ceremonial burial fit for a human being. Since then, any person who comes across a *tempelaq* is sure to experience misfortune in the form of illness at the very least, and at the most, death.

who work in the forest bring no products home with them nor do they obtain anything except sickness and death. They do not bring any money from their work because their earnings are all spent in meeting their everyday needs while in the forest. Often, too, money is spent on gambling.

The rational explanation of this phenomenon of sickness can be traced to the many species of insects and small animals which live in the primary forests removed by the logging companies and which can spread disease. Tropical forests are well known for malaria-carrying mosquitoes. If we consider the natural conditions and heavy work burden, which are made worse by an unbalanced food intake, the combination can reduce a person's level of fitness. Under these conditions the body becomes weak and disease-carrying insects become even more dangerous, bringing sickness and even death.

Apart from the limited jobs that they offer, the presence of companies has created very few other work opportunities or economic activities, that is, the multiplier effects have been very limited. The employment opportunities which have emerged are to be found in the running of small stalls that provide food and the other needs of workers, in river transportation and in accommodation services.<sup>71</sup>

### **Socio-cultural Change**

The cultural change that has occurred is marked by the physical disappearance of the long house, which represents a social institution as well as a place in which to live. The long house is one of the factors that binds together the socio-cultural fabric of the community while at the same time having economic, political and religious functions. The long house has been widely replaced by individual, dispersed houses. Many members of long houses have begun to leave them because their forest

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<sup>71</sup> Prostitution appears to have quietly insinuated itself. The village head and the customary law chief say that there is no prostitution, especially where local women are concerned. However, stories of prostitution are often heard in general conversation.

activities have been reduced. A lot have been forced to migrate to big cities, where they carry out activities in the informal sector.

With the loss of long houses, social cohesion has also gradually declined and communal ceremonies are rarely conducted. This tendency has been strengthened by the spread of Catholic and Protestant teachings among the Dayak. Both religions forbid rites involving ancestor worship because they conflict with Christian values.<sup>72</sup> As a result, the influence of customary law chiefs, who are also the leaders of indigenous religions, has declined in favor of Catholic and Protestant leaders. At the very least, with the appearance of these new religious elements, a dualism has occurred in social leadership between traditional leaders (represented by customary law chiefs) and religious leaders (represented by priests and ministers).

Another indication is the development of the various phenomena of gambling, fighting and murder as well as prostitution. Interaction between migrants and local people, development of an enclave economy and the appearance of a culture of consumerism at around the same time have invited and exposed the effects of imitation. These phenomena are seen as threats to religious values and indigenous culture. Customary law leaders state that now the younger generation care more about themselves and are content to have a good time with the money that they have earned from a company. It is difficult to ask them to assist in cooperative and customary tasks. They do not wish to hear the words of their parents or the customary law chief concerning sacred areas which should be preserved and not cleared for their timber resources.

Many local families give more thought to wealth in money terms when the time comes to marry off their children. Behavior, values and traditional norms are now rarely considered in choosing a child's marriage partner. These conditions have encouraged the emergence of various forms of contractual marriage between migrants and local girls. All these phenomena occurred after the arrival of a monetary economic

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<sup>72</sup> On this point, see the article by Stepanus Djuweng in *The Jakarta Post* on 27-3-1995, which states that "new" religions, in this instance Catholicism and Protestantism, have contributed to the transformation of Dayak society.

system introduced by outsiders via companies. Even the norms that once prevailed in male-female relationships have become weak. Violations of morals frequently occur, especially between local women and migrant men who work for a company. The customary law chiefs do not want to accept this reality but can do nothing about it because transactions are carried out willingly, like buying and selling, between the parties.<sup>73</sup> One sign of the weakening hold of customary norms and values over young people is the frequent occurrence of incidents in which wives are used as “bait” to attract migrant men in the hope that the family will receive compensation in the form of a customary-law fine. This occurs because of the wide difference that exists in material wealth between the local people, particularly young families, and migrants. At the same time local people wish to enjoy what the migrants have, yet they lack the necessary capacity, education and skills to obtain it. This difference ultimately makes them look for short cuts in order to be able to enjoy these material possessions.

Violations against local customary law have tended to increase on average by four times each year, compared to violations which occurred before the presence of logging and plantation companies. Of these violations, migrants are responsible for 45 per cent. Community leaders see the threat to their cultural values not as something that stands alone but as part of a network that takes in company officials and local military or civil servants at the subdistrict and village levels. Research by Alqadrie (1992) indicates that the negative impacts of logging companies, state plantations and large-scale domestically owned plantations on the way of life of the local people exceed any positive effects that may have been created. This is manifest in the reactions of the local population in the form of unrest, changes in perception, and opposition, which stem not so much from their cultural values or their mental attitudes as from their response to these negative impacts.

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<sup>73</sup> A customary law chief in Benggeris described how he once had to pass judgement according to customary law in a case of moral violation between a local woman and a policeman stationed in the area. Persons from Tempedas, Benggeris and Lambing have been eye witnesses to sexual transactions between local women and company employees which took place in the forest, in vehicles for timber transportation, in the residential barracks of the workers and in other places.



The forest is intrinsically related to the cultural life of the Benuaq and its disappearance is a growing threat to local culture. The loss of local culture means the disappearance of their identity as Benuaq. As already noted, Lambing now has no forest areas, though Benung still has a relatively large area of forest. This difference has caused the emergence of differences in the nature of the cultural shifts that have occurred in the two study villages, as Table 22 shows.

Table 22  
Cultural Shifts in the Research Villages

	Lambing	Benung
Forested area	Forest does not exist.	Primary forest can still be found.
Use of forest products by the community	No such use, except for products from forests in other areas or villages.	Apart from forest products such as <i>pulut merah</i> rattan, resin and wood area still available in Benung and there are other resources which relate to culture, among them: <ul style="list-style-type: none"><li>• <i>ulin</i> wood, used to make <i>tempelaq</i></li><li>• ingredients for the <i>beliatn</i> traditional ceremony</li><li>• <i>swakng</i> bark, used in the <i>kwangkay</i> traditional ceremony</li><li>• hunting grounds</li><li>• traditional medicines</li></ul>
Cultural shifts	The lack of forest has caused rapid social change, made worse by the weakened function of the customary law chief in everyday life.	<ul style="list-style-type: none"><li>• The existence of forest resources which can be used in cultural activities has made survival of culture much stronger.</li><li>• The role of the customary law chief is still strong in everyday life.</li><li>• Social solidarity is still strong.</li></ul>

Source: Primary data, 1996.

Thus the presence of logging companies has accelerated the decline in the functions of traditional law institutions. This can be seen in Lambing, where the process of decline in customary norms is becoming more rapid in accordance with acceleration in the forestry industry. Meanwhile, in Benung, where company involvement is not very extensive, the functions of customary law institutions are still relatively well preserved. It should be noted that in fact the weakening of customary law institutions first began when formal leadership was introduced, that is, with the formation of the government of the Republic of Indonesia and even more so with the implementation of Statute No.5 of 1979 concerning village-level government. The formation of a formal government (the village head and the associated apparatus) on the one hand and the existence of customary law chiefs on the other has caused “confusion” within their own communities. While the people have had to acknowledge the role of customary law chiefs, at the same time they have had to obey the formal regulations that come from the local village head, the subdistrict head and the provincial government.

Nowadays, with rising levels of education among the people of these two villages and the existence of various parties concerned with customary law institutions, a new awareness is emerging among the younger generation of their rights and responsibilities as citizens of Indonesia and as members of a tribal society. If in the past they were unable to do anything to prevent loss of their rights because of ignorance, now they have the knowledge and the courage to question the situation. If once they used to feel too frightened to ask questions and submitted to the authorities on all occasions, these days they have sufficient awareness to defend their rights.

## **SOME FINAL NOTES**

In view of the wide spectrum of problems related to natural resources and their connection with tribal and indigenous people, as well as the complexity of the impacts that have emerged from the various interventions in development of the forestry sector, there are several matters which warrant further emphasis, research and contemplation.

First is the fact that forestry development through the granting of logging concessions, permits to establish timber estates, rights to collect forest products and various other models of commercial forest utilization, which have hitherto enjoyed the trust of the government as contributors to national revenue, has in practice caused the emergence of serious impacts on the conservation of nature, the marginalization of tribal and indigenous people, and imbalance in growth as a whole. These impacts have received very little attention from policy-makers or from the public, even though there is a relatively large body of research on the topic. Indeed, among this research there are many studies that offer concrete recommendations and examples of participatory activities involving indigenous communities. The problem that arises is that whenever specific recommendations and examples are applied on a limited scale but are then proposed for adoption as wider public policy, there is a demand for relatively fundamental reformation, which includes political, economic, social and cultural aspects. This reformation in its turn takes the form of a reduction in government authority and control over management of the resources which up till now have been under the monopolistic control of the government and its institutions. In this situation the main task is to seek suitable and detailed ways in which to formulate operational policies based on recommendations from research findings or from various participatory experimental projects.

Secondly, the problems visible in the field and the various impacts that have emerged are just the tip of the iceberg when it comes to the actual potential for conflict, which began with the choice of a capitalistic development paradigm which believes that available natural resources must be optimally exploited for the sake of greater profit. In more “scientific” terms this paradigm is explained as actions and choices which defer to basic efficiency and economic effectiveness. The problems of the capacity and limitations of nature to regenerate are answered neither appropriately nor correctly. These problems continue to grow whenever a choice is encountered in production modes, and this has led to the use of institutions which have mastered “violence” and which observe only commands from the central government. Thus corruption and collusion have spread. With the refusal to recognize the existence of tribal and local people within their own living environment, the accumulation of problems has created social conflict of an extremely complex nature. In this context, the agenda for follow-up action should unveil this situation of conflict and make it transparent so that the wider society can understand it and adopt an appropriate attitude. Therefore, a more detailed, balanced and proportional explanation of the potential for conflict and the forms it can take is required, including explanations of the forms of cooperation that have already taken place.

Thirdly, from what has been learned about development projects and initiatives so far implemented, it is clear that sacrifices have already been made. For this reason, steps are required to restore and empower the parties who have been the victims. These activities cover an extremely wide scope and can be undertaken using scientific principles and enthusiasm. More concretely, they should take the form of attention and measures to solve the problems experienced at the local, regional and national levels in order to strengthen the position of tribal people, who up until now have not enjoyed the achievements of development in a proportional way. Various parties, including the government, private business, academics, NGOs and other groups concerned about these issues can participate in finding the best alternatives to overcome these problems. In the not too distant future, various channels can be used and a number of strategies can be undertaken relating to the ideas below:

1. Management and utilization of natural resources, including the forest and social forestry, are essential in order to improve the standard of living of communities living around the forest. This can take the form of seeking resource management and utilization of formats that are fair, while not ignoring the goals of conservation and sustainable utilization at the local, regional and national and international scales and involving the equal and responsible participation of all concerned parties: the government, entrepreneurs, academics, NGOs and tribal and indigenous communities.
2. There is need for forms of acknowledgment that recognize the existence of tribal and indigenous people and that at the same time ensure that customary rights are guaranteed and protected by national law. Subjects on the agenda that must be carried out immediately include acknowledging, strengthening and ensuring these people's right to live according to their ancestral customs as well as recognizing their collective rights over land in accordance with the concept of territory or region, ownership and management rights over natural resources within the earth, and rights relating to the transfer and eviction of resources. This agenda implies the involvement of tribal and indigenous peoples as active participants in all decision-making processes relevant to their common interests.
3. Empowerment activities can be implemented through a variety of strategies such as the cultural channel which involves revitalization of indigenous culture. This revitalization approach is being tried out by certain institutions in Kalimantan, which are also attempting to build a Dayak network throughout Borneo (including Sabah and Sarawak), and a network for observers of tribal and indigenous people on an international scale. It can also be done through political channels by opening up balanced communications along with a lobbying arena that functions both directly and through representatives. Empowerment can also take place through the channels of the people's economy where the strategy involves a strengthening of that economy. The channels of environmental empowerment and development of human resources at the local level

can also be used as well as legal and bureaucratic channels and the strengthening of customary law institutions.<sup>74</sup>

4. Critical consideration of the development paradigm is needed, along with a search for alternatives for production patterns and productive management of resources which are more just and more balanced. This can reduce development discrepancies between regions and sectors by fully including all strata in the community. Of no less importance are efforts to review the current development paradigm, which favors stability and economic growth, and to replace it with one that places greater emphasis on equity and thus offers wider advantages to the people.
5. Development and stabilization of the people's economy amidst the currently dominant patterns have proved incapable of providing adequate support for the people as a whole. Another pattern must be introduced that will provide more proportional opportunities for revitalization of the people's economy in a way directly related to protection of their rights over the natural resources that they control. An alternative method of development which uses appropriate economic channels and provides opportunities for people as the managers of environmental resources is required. This needs to be done in two stages: first, by providing academic justification for the involvement and participation of the community in developing their economy themselves, and second, by developing a number of pilot projects to try out the above ideas and to develop advocacy strategies to support them.
6. It is necessary to develop ways of systematically mapping and studying patterns of control and management of resources based on

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<sup>74</sup> All the above issues have been supported and implemented by a number of institutions and foundations throughout Kalimantan. In West Kalimantan, these activities are carried out by the Lembaga Bina Benua Talino (LBBT) in the Institute of Dayakology Research and Development (IDRD). In Central Kalimantan, similar activities are carried out by the Lembaga Talusung Damar. In East Kalimantan, the Yayasan Plasma, Lembaga Bina Benua Puti Jaji (LBBPJ), Forum Solidaritas Untuk Masyarakat Adat (Fasumad), Komite Hak Asasi Manusia Kalimantan Timur and Rekari are all involved in empowerment activities.

the system of tribal and indigenous people's local knowledge. This recommendation is based on a request for implementation of agrarian reform which demands an economic and political order that is more just in terms of production, land allocation, distribution of the means of production and trade in agricultural produce in the widest sense.

The steps outlined above are recommendations that can be implemented in a concrete fashion in situations where the tribal and indigenous communities are powerless in the face of capitalistic interventions which take the form of forestry industries "hungry" for timber and other forest products.

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