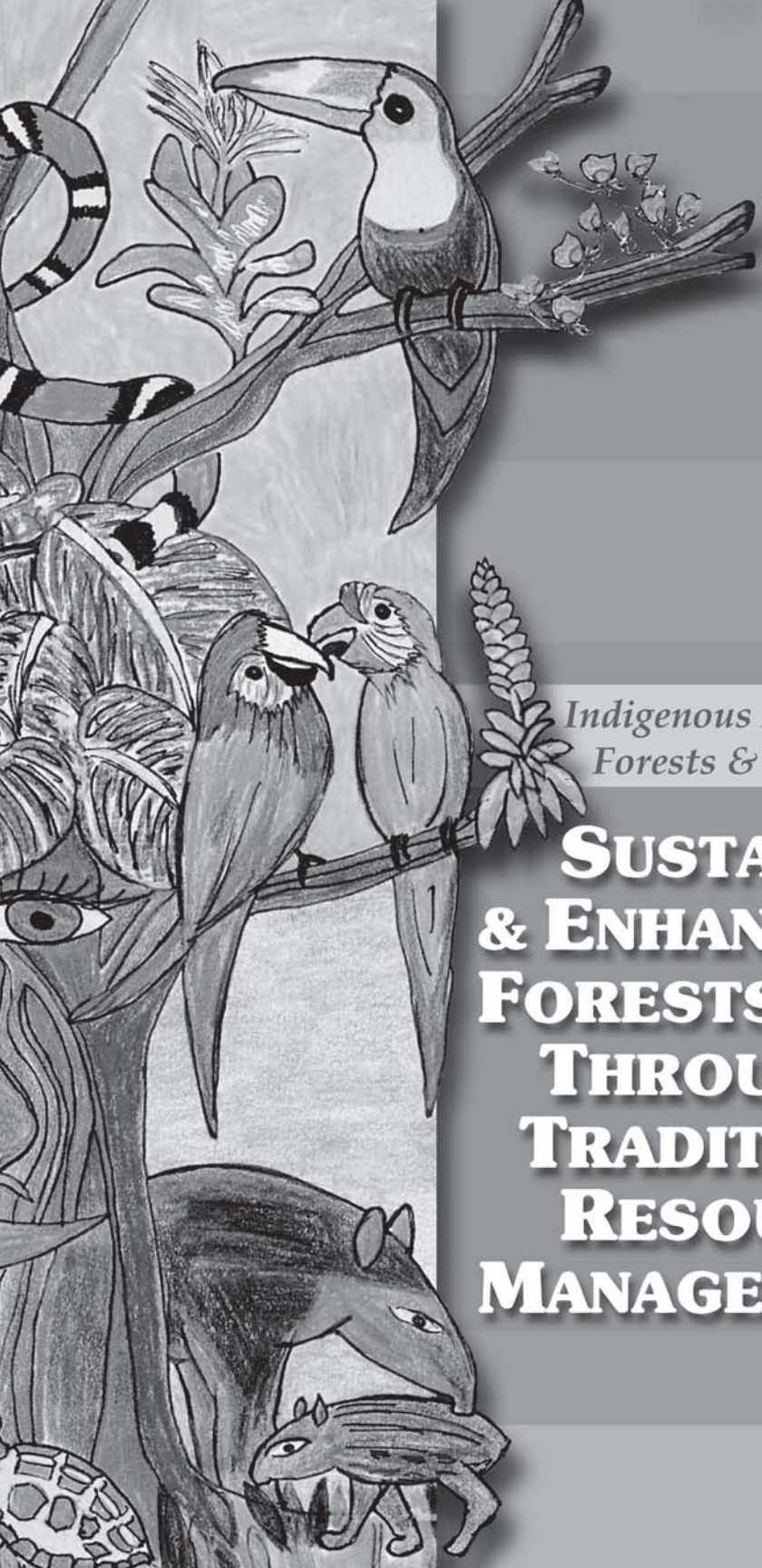
Indigenous Peoples, Forests & REDD Plus

SUSTAINING & ENHANCING FORESTS THROUGH TRADITIONAL RESOURCE MANAGEMENT



Indigenous Peoples, Forests & REDD Plus

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Indigenous Peoples, Forests & REDD Plus: Sustaining & Enhancing Forests Through Traditional Resource Management

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Tel. 63 74 4447703 Tel/Fax: 63 74 4439459
E-mail: tebtebba@tebtebba.org
Website: www.tebtebba.org

Editorial Board: Victoria Tauli-Corpuz & Raymond de Chavez
Editor: Wilfredo V. Alangui, Grace Subido & Ruth Tinda-an
Book design, lay-out and production: Paul Michael Nera, & Raymond de Chavez
Assistant: Marly Cariño & Marissa Maguide-Cabato
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TEBTEBBA

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INTRODUCTION

Many of the last remaining tropical forests in the world today are found in indigenous peoples' territories. The main reason for this is that forest-dwelling and forest-dependent indigenous peoples regard forests not only as the source of sustenance and livelihoods but the very basis of their identities, cultures and their social organizations. Thus, they continue to sustainably use, conserve and protect these forests which is home to them. Their cultural, social, economic and spiritual relationship with their forests are deeply-rooted and attempts to displace them from these are met with severe resistance. Several have fought and continue to fight against the attempts of colonialists, nation-states and corporations to expropriate their forests and extract the resources found therein or convert these into grazing lands and monoculture tree or agriculture plantations. This explains why many conflicts are found in countries which are hosts to tropical forests.

Indigenous peoples' desire to ensure that these forests are conserved, protected and sustainably used is not solely for them and for their past and future generations but also for other living and non-living things, the deities and the unseen. Because of their traditional knowledge and practices of managing the forest ecosystem, including its resources and services, they have and continue to contribute to climate change mitigation. So even before REDD (Reducing Emissions from Deforestation and Forest Degradation) came into the picture,[1] indigenous peoples are already reducing emissions from deforestation and degradation. We call this the "redd" in small letters.

[1] We distinguish reduced emissions from deforestation and forest degradation (in small letters) from REDD (in capital letters). The former is the practice done by indigenous peoples and other forest peoples in defending their forests from deforesters and practicing their traditional forest management systems which are strictly regulated by customary laws. REDD is the official programme being negotiated at the UNFCCC.

When we, in Tebtebba, heard about REDD and then REDD Plus, our first reaction was that this is nothing new. We thought that if there are incentives to further enhance indigenous peoples' systems in using the forests sustainably as well as protecting and conserving these, then these should be supported. Of course, along the way we realized it was not as simple as this. There are risks that the incentives will not go to indigenous peoples. There is the risk that because forests are acknowledged for their contributions in reducing greenhouse gas emissions, indigenous peoples might be displaced from their forests or prevented from using these. This is when we decided that if we are able to generate resources for forests and climate change, the first thing we would do is to encourage our indigenous colleagues to first do the research and documentation of their traditional forest management practices and knowledge. These information will be very useful not only for themselves but also for their work in convincing decision makers that their indigenous traditional systems on forests will be crucial in ensuring the success of REDD Plus.

Thus, when we succeeded to get funds from the Norwegian Forest and Climate Change Initiative coursed through the Norwegian Agency for Development Cooperation (NORAD), this is what we did. We entered into formal partnerships with several indigenous peoples' organizations whom we have been working with for several years, and agreed that one of the first joint work we will do is research. We chose eight partners from Asia, Latin America and Africa. We will provide them support to undertake case studies on how their own people are doing their forest management. They will look into the customary systems of forest management which are still practiced. What are their peoples' views, knowledge and beliefs related to the forest ecosystem and what are the practices on forest management? This was accompanied by another research which looked into the national policies and programmes which are affecting their rights to their lands and their forests and their capacity to contribute to climate change mitigation. The drivers of deforestation in their countries were examined under this research project. While the analysis of policies and programmes was implemented by all of our eight partners, the case studies on traditional forest management were done in three countries only.

Our partners who did these case studies were Institut Dayakologi (ID) and Aliansi Masyarakat Adat Nusantara (AMAN) for Indonesia; Centro para la Autonomía y Desarollo de los Pueblos Indígenas (CADPI) for Nicaragua; and Mainyoito Pastoralists Integrated Development (MPIDO) and Loita Development Foundation (LDF) for Kenya. The project partners conducted series of community consultations and meetings to inform the communities about the project and to get their consent for their community and forests as showcase areas which are successfully managed and sustained by indigenous peoples for generations. Social preparations and capacity building activities were also conducted by the project partners with indigenous peoples' organizations and communities.

This book contains the case studies in these three countries. One vital element about these case studies is that the ones who did the research and wrote the cases were indigenous researchers, themselves. We convinced our partners that they are the best persons who can document and do the research and writing up of how their forests have been conserved. Tebtebba's main mission is to help enhance the capacities of indigenous persons to do research and to write the research results themselves. We think that unless indigenous peoples hone their research capabilities, they will always be objects of research. There is always the risk that their practices, views and perspectives will be misrepresented. So we had to insist with our partners that their staff or their local organizations be the ones to do the case studies. These case studies showcase the living examples of how indigenous peoples' knowledge and practices and customary laws on forest conservation and natural resource management are crucial for sustaining these remaining forests.

The case studies showed the multiple uses and benefits of forests to indigenous peoples including socio-economic, cultural and spiritual benefits. Other benefits include the conservation and sustainable use of biological diversity and improvement of local and national governance of forests. The recognition, protection and fulfillment of indigenous peoples' rights over their forests and the sustained use of their knowledge in sustaining these forests are crucial for the success of REDD Plus or any other forest and climate change programme.

The publication of this book is a result of the collective efforts of Tebtebba, our project partners and the local indigenous peoples organizations' and communities they are working with in the three demonstration areas. For this, I would like to thank all our partners who shared efforts in successfully coming up with these case studies. Thanks also to all my colleagues in Tebtebba including Marissa Maguide-Cabato of the Research Desk and Grace Balawag, our Project Assistant, who visited all the demonstration project areas and provided necessary guidance to our partners who did the case studies; to Helen Magata, Jo Ann Guillao and Mikara Jubay of the Research Desk; Raymond de Chavez, Paul Nera and Marly Carino of the Publications and Information Desk; and to Bong Corpuz of the Administration Desk. I also acknowledge the editing work that Prof. Wilfredo Alangui and his team did for these case studies.

I thank NORAD again for providing us the funds to undertake this project aimed to help build the capacities of indigenous peoples to become key players in forest and climate change initiatives such as REDD Plus. Your support, without any question, will increase considerably our capacity and that of our partners to do research and documentation; training and education; and advocacy work at the national and global levels to get States to respect and protect our rights and recognize our traditional knowledge, management practices and customary governance over our lands, forests and resources. Finally, we would like to thank EED (Church Development Service) of Germany, whose invaluable support continues to help make possible our work with and for indigenous peoples.

Victoria Tauli-Corpuz
Executive Director, Tebtebba
Member, UN Permanent Forum on Indigenous Issues (UNPFII)
November 2010

ACRONYMS

A

AMAN	Aliansi Masyarakat Adat Nusantara

C

CADPI	Centro para la Autonomía y Desarollo de los Pueblos Indígenas (Center for Indigenous Peoples' Autonomy and Development)
CDC	Commonwealth Development Corporation
CRAAN	Consejo de la Región Autónoma Atlántico Norte (Council of the North Atlantic Autonomous Region)

E

EAWLS	East Africa Wild Life Society
EPS	Sandinista Popular Army

F

FAO	Food and Agriculture Organization
FCPF	Forest Carbon Partnership Facility
FIP	Forest Investment Program

G

GRAAN	Gobierno de la Región Autónoma Atlántico Norte (Government of the North Atlantic Autonomous Region)

I

ID	Institut Dayakologi
ILIDP	Ilkerin Loita Integral Development Project
INAFOR	Instituto Nacional Forestal (National Forestry Institute)
INRA	Instituto Nicaragüense de Reforma Agraria (Nicaraguan Agrarian Reform Institute)
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for the Conservation of Nature

K

KKPA	Koperasi Kredit Primer Anggota
KFS	Kenya Forest Service
LCE	Loita Council of Elders
LDF	Loita Development Foundation
LNECT	Loita Naimina Enkiyio Forest Conservation Trust

M

MAG-FOR	Ministerio Agropecuario Forestal (Ministry of Agricultural Forestry)
MARENA	Ministerio del Ambiente y Recursos Naturales
MIDINRA	Nicaraguan Agrarian Reform Institute
MPIDO	Mainyioto Pastoralists Integrated Development Organization
MRV	Monitoring, Reporting and Verification

N

NCC	Narok County Council
NCCRS	National Climate Change Response Strategy
NGO	Non Governmental Organization
NORAD	Norwegian Agency for Development Co-operation

P

PAF	Plan de acción forestal (Forestry Action Plan)
PGM	Plan General de Manejo (General Management Plan)
PRPOL	Pacific Rim Palm Oil
PT HSL	PT. Harapan Sawit Lestari
PT KWAM	PT. Karya Wijaya Aneka Mineral

R

RAAN	Regiones Autónoma Atlántico Norte (North-Atlantic Autonomous Regions)
REDD+	Reducing Emissions from Deforestation and Forest Degradation (REDD), as well as sustainable management of forests, forest conservation and the enhancement of forest carbon stocks ('+')

S

SERENA	Secretaría (del gobierno regional autónomo) para los recursos naturales (Natural Resources Secretariat of the Autonomous Regional Government)
SWOT	Strengths, Weaknesses, Opportunites and Threats

U

UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UN OHCHR	Office of the High Commissioner for Human Rights
URACCAN	Universidad de las Regiones Autónomas de la Costa Caribe Nicaragüense (University of the Autonomous Regions of Nicaragua's Caribbean Coast)

W

WB	World Bank

1

INDIGENOUS PEOPLES & THE NAIMINA ENKIYIO FOREST IN SOUTHERN KENYA: A CASE STUDY

By
Mainyoito Pastorlists Integrated Development Organization (MPIDO)*

***Researched and Reported by:**
Kimaren Ole Riamit

INTRODUCTION

Research Background

The case study constitutes part of a larger project with two other components; a national policy and program analysis on climate change and REDD (Reducing Emissions from Deforestation and Forest Degradation), and an advocacy and awareness programme, all targeted at indigenous peoples in Kenya. Broadly, the case study endeavours to focus inquiry on a particular indigenous peoples' managed forest (Naimina Enkiyio) with the aim of gathering and analyzing in-depth data on Indigenous Peoples' Knowledge, Systems and Practices (IKSP) relevant in sustainable forest management, forest conservation, enhancement of carbon stocks and in the promotion of cultural and biological diversity. In doing so the research hopes to demonstrate and reinforce the indigenous peoples' holistic view and multifunctional use of forest (cultural, spiritual, biodiversity, source of food and medicine, etc.); argued to have a positive contribution towards efforts to mitigate climate change especially in the REDD context. Additionally, the research will seek to identify threats and obstacles that impede the practice of traditional forest resource management practices and the transfer of these practices and knowledge to the younger generations.

Research Conceptual Framework

The research takes the UN Declaration on the Rights of Indigenous Peoples (UNDRIP) as the overarching framework for REDD in relation to indigenous peoples and particular rights of

indigenous peoples in their particular countries. The Ecosystem-based approach and SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis was also employed.

The research was conducted by a local indigenous researcher in collaboration with research assistants and documenters who were also members of the local indigenous community within the case study area. The research assistants were trained on the basic technical skills for conducting a case study type of research and oriented on the research objectives and tools for data collection. The training was a joint effort of a team of researchers from Tebtebba in the Philippines, and a Program officer from MPIDO (Mainyoito Pastoralists Integrated Development). The choice of local indigenous research assistants has a double benefit; first, it contributes to capacity building of indigenous peoples to enable then to conduct research within their localities, and the second, it facilitates and enhances a true reflection of indigenous peoples' world view of forests, traditional knowledge and customary institutions. This therefore ensured joint implementation of the case study with villagers with a long term view that indigenous peoples will soon use the acquired skills, techniques and innovations for their own gain, especially in the context of REDD.

The Maasai People

The Maasai people of East Africa have been associated with nomadic pastoral livelihoods for many years. Prior to the advent of colonialism in East Africa, the community occupied greater portions of the now Kenya's rift valley province stretching southerly from Laikipia to the slopes of Mt. Kilimanjaro along the Kenya-Tanzania border. Historical and ethnographic literature indicates the they were a people of both livestock/cattle and land with their pre-colonial territorial extend estimated at about 10 million acres (Tignor 1976 cited in Mwangi, 2007). Until the early 1930s, the Maasai were characterized by the Kenya Land Commission as being probably the wealthiest tribe in East Africa both in land and the stock they were able to sustain (Rutten 1992).

The colonial encounter and the subsequent Anglo-Maasai treaties of 1904/1911 resulted in the Maasai being pushed from

the highlands of the rift valley to the southern, much drier and semi-arid districts of Narok and Kajiado along the Kenya Tanzania border (Annex 1). Property rights to land in Maasailand were managed under customary law within the traditional social organizations/institutions (Lughes 2007; Mwangi 2008).

The community is organized into 12 main political and territorial sections (*Iloshon*), namely: *Kaputiei, Purko, Matapato, Kisonko, ildamat, ildalalekutuk, Keekonyokie, Loodokilani, Loita, Siria, Uasinkishu and moitanik*. Authority for decision making rests with the senior elders of each section, often in consultation with the *Ilmurran (warriors)*—the providers of security. Clan is one other key social organization of the Maasai. The members of each clan stem from the same male ancestor not far back in history. The clans are patrilineal and include the *Ilmakesen* (of baboon), *Ilaiser* (of rhinoceros), *Ilmolelian* (of elephants), *Iltaarrosero* (of hyena), and *Ilikumai* (of raven). Regardless of clan or family affiliations, all Maasai are also members of one of two moieties, one called *odomong'i* (the house of the red oxen) and the other *orok-kiteng'* (of black cattle) (Galaty 1981; Maundu et al. 2001; Mwangi 2007; Rutten 1992).

Besides the enormous land lost under the colonial regime, the community has equally lost expansive ancestral domains due to nationalization of land, as either wildlife conservation areas or forests, and encroachment by agricultural communities. Today they number about 500,000 with a birth rate of about 3.5 per cent and an infant mortality of eight per cent (Maundu et al. 2001). Although over the years the Maasai have undergone great changes in structure and organization, they are a unique ethnic group least influenced by the Western ideologies of modernity and "civilization." Despite the enormous pressure for change, the community has managed to maintain its cultural and ethnic identity to a large extent—the Maa language, traditional mode of dressing, belief and value system and its customary institutions—often making it one of the key attraction for cultural tourism in the country.

Associated to this adherence to its cultural and indigenous identity is the Maasai belief system in relation to its natural environment. Until relatively recently the Maasai depended en-

tirely on their surroundings for their survival. Until today, their life is still intricately interwoven with the environment as evidenced by intimate knowledge of the environment acquired in the course of an individual's engagement in community life and by the existence of a richer diversity and higher density of flora and fauna in the region than that reported around areas settled by other ethnic groups in the country. Traditionally, social taboos prohibited the use of wildlife and other activities deemed destructive to environmental integrity. Perhaps, it is a combination of these factors that has contributed to this community being recognized by the UN as one of the indigenous communities in contemporary Kenya (Maundu et al. 2001).

Although there are areas of intersection and overlap across different sections of the Maasai, the project site is predominantly under the management of the *Iloitai* section. The above background explains both the present location of the Loita Maasai, and the broader social, cultural and political systems within which the community goes about with its livelihood endeavours. Living on a 2,000 m high plateau bound on the east by the Nguruman Escarpment, on the north by the Loita Hills and the Siana and Mara plains on the west, the Loita Maasai number about 25,000 people in the south-eastern part of the greater Narok district. Southwards, the Iloitai extend across the international border to the Loliondo district of northern Tanzania (Maundu et al. 2001; Zaal, M. and Siloma 2006).

Due to geographical remoteness, a difficult road access network (if any), minimal state service provision and poor communications facilities, this section of the Maasai has remained isolated from other Maasai groups and from many of the social and economic impacts of industrialization and associated notions of modernity, development and resource exploitation. While opinions may differ on whether this remoteness is a good or a bad thing, this isolation and remoteness has undoubtedly contributed to the Loitans retention of their cultural value system and practices much more than their counterparts elsewhere in Maasailand are perceived to have. The area is endowed with a rich diversity of wildlife, pastureland and forest resources.

The Loita Hills which rise over 2,600 m are covered by a dry forest with numerous forest glades. To the east they give

way to the spectacular Nguruman escarpment which drops more than 2,000 m in some places to the low undulating *Acacia* and *Commiphora* dominated lowlands of Magadi. The larger part of the Loita population lives in the open areas of the western edge of the forest, where they utilize the excellent grazing conditions in the open rangelands. Towards the forest the population declines as forest cover increases. The main forest area is only beginning to be occupied while its glades are important dry season grazing areas (Maundu et al. 2001).

The Forest of the Lost Child

Entim e Naimina Enkiyio (the Forest of the lost Child) is one of the few non-gazetted and largely undisturbed indigenous forests in Kenya. The forest has been variously referred to as the Loita/Purko Naimina Enkiyio Forest (IUCN 2002), Loita Naimina Enkiyio Forest (Zaal M. & Siloma 2006), Loita forest (Maundu et al. 2001) and Naimina Enkiyio forest by different authors. This wide variety of names associated with the same forest reflects the historical evolution of the forest ownership and management and the contestation inherent in this evolution process. Although overlaps of ownership and control over sections of the forest do exist between the Purko and the Loita Maasai sections, a greater section of the forest falls within the Loita domain. For this reason, and for consistency purposes in the discussion, I shall henceforth use the term "Loita forest."

The forest is located at Loita, division, Narok south district in Southern Kenya. It covers an area of about 330 km^2 bordering the Nguruman-Magadi escarpment, Kajiado District to the east; the Osupuko Oirobi (Purko Maasai land) to the north, Tanzania to the south and the rangelands towards the Maasai Mara National Game Reserve to the west (Zaal M. and Siloma M. 2002).

According to Maundu et al. (2001) the forest is classified as a dryland afro-montane forest, rising to an altitude of about 2,300 feet above sea level within the Loita hills. Cedar and podocarpus are the two most numerous tree types. Other species include *Olea capensis*, *Olea africana, Pavetta gardenifolia, Juniperus procera, Zantholyum usambarensis,* and *Warbugia ugandensis*. The

forested areas receive an average rainfall range of 600-1,200 mm per annum with the lower rangelands receiving much lower precipitation at 600-700 mm. The forest constitutes the main water-catchment point in the region, draining into the Ewaso Nyiro river, with its water catchment protection services value placed at Kshs 105 million (US$1.3M) per year.

The forest supports a vast number of mammals and birds—elephants, buffalos, hippos, antelopes, lions, leopards, cheetahs, and approximately 100 bird species including some endangered species such as the Grey-crested Helmet Shrike. The Loita forest is also the only Kenyan site for the brown-capped Apalis and it also supports such globally threatened species as the Red-throated Tit, the Jackson's Widowbird and the Hunter's Cisticola. The forest has enormous tourism potential with 12 tour operators and educational institutions currently running 40-50 trips per year to Loita, with group sizes of between 3-20 and a total of approximately about 600 visitors per year. Presently the primary interest in the forest, besides indigenous uses, lies in its potential for tourism, which could earn up to $40,000 per annum (IUCN 2002, 18). This compares unfavorably with the forest's catchment protection value of $1.4 million and its existence value of $80,000 per annum (Ministry of Environment and Natural Resources 1994). The forest provides other services that have not been quantified such as spiritual and cultural values, minor forest products, and grazing (IUCN 2002).

The significance of Loita forest in the context of climate change and REDD+ becomes clear when viewed within the context of the national deforestation rate of 1,200 ha per year resulting in a national forest cover reduction from 30 per cent of the country's total area at independence, to slightly above two per cent in 2010; and closer to home, the reduction of Mau forest cover by about 24 per cent (Kantai 2000.).

Loita Forest and REDD Plus

The last remaining tropical forests—including Loita forest—in the developing countries are those which indigenous peoples

have owned or controlled. These forests have been protected and conserved mainly because forest-dwelling and forest-dependent indigenous peoples have persevered and fought against deforestation and forest degradation, and policies and programmes of governments as well as corporate interests that will displace them from their territories. Such strong defense and sustained protection of forests and resources is attributed to their deeply- rooted cultural and spiritual relationships with their lands and territories which persists up to the present, even amidst the various efforts of modern society to denigrate these.

The practice of reducing emissions from deforestation and forest degradation (REDD) is not new to indigenous peoples. It is an integral part of indigenous peoples' traditional knowledge and practice in terms of their indigenous forest and resource management systems which are strictly regulated by their customary laws and worldviews. Forests and natural resources of indigenous peoples remain managed and protected for generations because of indigenous values that are instilled throughout the generations in relation to the custodian and stewardship roles on sustaining the lands, forest and natural resources which also provide multiple benefits to the people. Such values are translated into concrete actions by indigenous communities to conserve biodiversity (including carbon stocks) while at the same time, managing and regulating the use of forests and natural resources for their daily livelihood need by customary laws. The conservation of Loita forest by the local indigenous Maasai community exemplifies this practice. These practices need to be supported and strengthened further through research and documentation, education and more advocacies for policy reforms.

The lands, forests and resources which indigenous people traditionally own and use are the very basis of their sustained traditional livelihoods, social organizations, identities and cultures. Thus, it is to their very own interests that they themselves see to it that these forests are conserved, protected and defended against any destruction by private or government interests. It also means that if indigenous peoples are fully and effectively involved in the processes of decisions on policies, designing, implementation and monitoring of REDD plus and other forest related programmes, and there can be a well-de-

fined and equitable sharing of the rewards and benefits from REDD projects and programmes. In this manner, a 'win-win' situation for the environment and for sustainable development can be realized. In turn, the abatement of carbon dioxide emissions will further increase and whatever benefits or rewards that indigenous peoples will gain from this can be used by them in their mitigation and adaptation to the adverse impacts of climate change and to alleviate their situation.

FOREST OWNERSHIP AND USES

Indigenous Peoples' Views on Forests

Local indigenous Maasai communities use a wide array of terms to describe the forest and resources within it. These terms provide a glimpse of how the indigenous communities view their relationships with forests in the context of their livelihoods practices. Some of the terms reflect the indigenous peoples' view of forests as a source of insurance and safety nets against droughts for example. Terms such as *saru-enkiteng* (that which saves the cattle) *and Saru Maa/saru tungani (*that which saves/ redeems the Maasai community or mankind*)* exemplify this. Forests are a critical pastoral resource during the dry seasons as a source of both water and grazing land. Other terms connote the quality of forests' regulatory and provisioning services. *Mmenangi atua*, is a term which means "that which in it life is always preserved"; Noo *Nkariak pusi*, (that of blue waters) implies purity and pristine quality the forest ecosystem, and *naigil akenyu,* ("that which has two mornings" or the "sun rises twice") which also implies minimal exposure to heat radiation from the sun. Further, the term *Osupuko le Mokompo* (the highlands forest of Mr Mokompo) introduces the spiritual dimension through its connection with Mokompo (the current chief prophet or seer of the entire Maasai community). In addition, some terms may simply refer to the some of the key products derived from the forest. This includes terms such as *entim oo Naishi* (the forest of honey).

The terms listed in the preceding paragraph form but a small part of a rich diversity of indigenous peoples' description of their relations with forests. The terms do not only serve to describe indigenous peoples' relation with forest, but they equally inform management approaches and resource utilization. The terms, therefore, translate to differentiated forms of ownership, access and control of sections or specific products from the forest. This differentiation may include identification of grazing and watering areas for livestock use; sacred sites and trees for spiritual activities; sites for enactment of various cultural practices including rites of passages; sections for firewood and harvesting honey amongst others. The control of these sites could be under individuals, groups or the entire community. This would be determined by the socially ascribed roles to perform certain duties related to particular forest sites and resources and the centrality of particular practices in fostering community shared identity, values and norms.

Grazing

The Loitans are predominantly livestock keepers, making pastoralism their primary source of livelihood. According to Maundu et al. (2001), the average livestock holding per household ranges between 10-20 head of cattle and 30-60 sheep and goats. Land ownership is still under customary tenure with individuals having the freedom to choose where to settle and utilize resources after consultation with community elders. During the wet season, grazing is limited to specified zones within the home range. This grazing range often corresponds to closely related villages or clans, granting them limited and differentiated rights of access. Livestock in Loita graze according to the rain regime. During the rainy season, livestock stay in the rangeland (*Olpurkel*), which has wide grassy plains and salt licks. The Loita Maasai understand the role that the forest plays as a water catchment area and water source during the dry seasons and episodes of drought, as all water sources in Loita emanate from the forest. It is uncommon to find community herds grazing in the forest during the rainy season. Even the community members living close to the forest resist this temptation.

Access to and establishment of permanent settlement close to and inside the forest is closely monitored and regulated. In the context of grazing, the forest only serves grazing area during the dry season grazing, thereby serving as an important source of security. Never before was this critical role of the forest exemplified than during the devastating drought of 2008/ 2010. Whereas the drought wreaked havoc on other pastoral livelihoods in the country, the Loitan stood out as an island of refuge with negligible livestock losses (if at all). The forest has been able to "cushion" the Loitans so well such that when the other areas of Maasailand reported mass deaths due to drought, as happens every so often, this is rarely the case in Loita. The area has also served as a popular in-migration grazing site for other Maasai section, even from across the Tanzanian border.

Firewood

Firewood is the main source for energy for most of the households in this locality. The task of gathering firewood is often allotted to women who collect the firewood from the most convenient places, normally the nearest, and from areas where the specific species of interest, mainly where *oloirien* (wild olive, *Olea africana* ssp. *Europaea)* is aplenty in dry form. For each community or village, there are specific areas for firewood collection where most women go. According to Maundu et al (2001) when firewood from this particular tree is used by a woman, she is traditionally believed to endear herself to her husband. A great variety of species can be used as firewood but whatever their species, it must always be dry or dead wood.

Sacred sites

The forest has considerable spiritual and emotional value and thus many rites of passage and other important rituals and ceremonies such as take place here. Examples of these are the women blessing ceremonies and inauguration of *Olorrip olassar* , two important indigenous peoples cultural practices. The women's fertility blessings ceremony is done for women who are unable to give birth or barren. For men, the forest is the source of white used for soil for circumcision ceremonies. All

these cultural activities are regulated and guided by *Oloiboni*. Because of this, the Loita community sees the spiritual leader, the Laibon, (sic) as the custodian of the forest. The Laibonok (plural for Laibon) have permanent rights and access to certain areas of the forest for their functions. Certain resource types, like a tree referred to as the *oltukai,* are only meant for Laibon use for the performance of these traditional rituals (Karanja et al. 2002).

Watering Points

Watering points belong to the whole community. These points are protected and their access regulated by elders. Specific points are identified and set aside for livestock watering and others for domestic water harvesting. Women in particular play a key role in monitoring water levels and quality for sources of water dedicated for domestic consumption while their male counterparts do the same for livestock watering points. Ensuring regular supply and controlled access/use of water for livestock is essential in the context of pastoralism because it influences availability and effective utilization of pastureland.

Local Uses of the Forest

Construction

Most of the indigenous peoples' structures that may require use of forest resources are often simple in nature and make use of mostly dry wood and twigs. In the context of the Loita Maasai—the major structures are the traditional houses and the livestock enclosure fences. Traditionally, it is the women who build the houses. A Maasai traditional house is a simple structure made up entirely of wooden poles, and interwoven twigs/branches and smeared/cemented with cow dung. Specific species are preferred for the different parts of the building.

The fence around the homestead and animal enclosure also uses branches of particular thorny bushes, rarely tree trunks. The traditional way of fencing is done by piling up branches of thorny acacias and *oleleshua* (*Tarchonanthus camphoratus*) or, where

thorny material is limited as in Ilkerin, by sticking *oleleshua* and *olmisigiyioi* (*Rhus natalensis*) into the ground. Other species used for dead fences include *Maytenus heterophylla* (*olaimurunyai*) and *Mystroxylon aethiopicum* (*olodonganayioi*). Wood for such constructions is freely sourced from any part of the forest without having to obtain permission from official entities. Extraction of large quantities, especially of specific species, is however under strict control of the elders. Chief Laibon plays a key role in decision making regarding the extraction of large quantities (Maundu et al. 2001).

Cultural and ceremonial uses

The indigenous Maasai culture and social organization reflects very rich and diversified customary systems and practices characterised by numerous ceremonies and rituals. In almost all of these ceremonies and rituals, the forest, specific species of plants/tress in the forest, and parts of trees and or plants play essential roles. These ceremonies include those associated with significant life cycle events such as the rites of passage—naming, circumcision, marriage and death—and are also held to fight disease, to combat infertility, make requests for blessings and to settle disputes.

Maundu et al. (2001) was able to identify a total of 24 species of plants used by the Loita Maasai during various ceremonies and rituals. The *oloiboni*, the spiritual leader uses a variety of plants to make charms for cursing, bewitching or treating people. The main ceremonial include:

Table 1: *Ceremonial Plants and Functions*

Maasai name	Scientific Name	Type of ceremonies	Function
Oloirien	*Olea europaea* ssp. *africana*	All ceremonies	Brings good luck
Oreteti	*Ficus thonningii* and *Ficus cordata*	Women fertility ceremonies	Symbol of fertility
	Olea capensis	Olorip-olasarr	Sacred tree
	Cordia monoica	Settling of disputes	Tree of peace
olmagirigiria ni	*Lantana trifolia*	Livestock related	Olasarr[1], Cleansing, aromatic smell
olmisigiyioi[2]	*Rhus natalensis*	Naming ceremony	Tree of Protection
osinandei	*Periploca linearifolia*	Naming ceremony	Tied on child's neck

Source: Table 1. Adopted from Maundu et al. (2001).

Most of the ceremonies are preceded by the brewing of large quantities of beer. The gourds (*emala*) in which the traditional beer (enaisho) is brewed, the substance (*osuguroi*) used to accelerate the fermentation process and the honey, all come from the forest and associated products. The beer is also served in smaller gourds (*endukuny*), from which several people may drink. All members of the society participate in these ceremonies with each gender playing specific roles.

Box 1. Women Fertility Ceremonies

During *olamal loo ngituak*, (women procession) hundreds of women pass through an arc formed by the stem of a sacred *oreteti* (*Ficus thonningii*) deep inside the forest. When they come back to the village two elders, one with a milk gourd and the other with beer, use the leaves of *oltukai* (*Phoenix reclinata*) to sprinkle these liquids on the women as they enter. At the end of the ceremony the women feast on meat roasted by elders on *oloirien* sticks (*ngeshereta*) and placed on *oloirien* leaves.

Construction of a ceremonial Warrior *emanyata* (settlement) is one other key area in which various types of trees and plants from the forest are used. Maund et. al (2001) and testimonies from indigenous peoples interviewed identified three types of *imanyat* (settlements), namely *emanyatta oor murran*, e *manyatta e ngeene* and *emanyatta oolorikan.* This ceremonial temporal settlements mark milestones in the life of men as they progress in life within the age-set system to elderhood. The researcher and a team from Tebtebba were privileged to visit one of these ceremonial settlements (*eunoto*) within the case study area. The establishment of this particular emanyata may involve the construction of slightly above 100 huts, usually by the mothers of the warriors. Specific tree and plant species e.g., *Oloirien* and *oretet*i are used in different components and contexts of imanyat.

Food and medicinal uses

Just as there are many tree species and plants used in ceremonies and rituals within the community, the same is true in the context of food and medicine provisioning. Over and above the direct and indirect benefits from the role of the forest as environment regulator, a wide variety of plant species and parts serve as a direct source of food and nutrients. The parts of plants taken as source of nutrients, water, medicinal value, exercise for the jaws and to pass time, range from their stems, roots, barks, galls, tubers, leaves and fruits. Although consumed as snacks, fruits constitute a major part of the food utilized by all members of the community when herding, fetching fire wood or water out in the forest/wilderness.

Box 2. Five most preferred fruits

- *Carissa edulis* (*olamuriaki*)
- *Vangueria apiculata* (*olgum*)
- *Pappea capensis* (*oltimigomi*, *orkisikong'o*)
- *Syzygium cordatum* (*olairagai*)
- *Flacourtia indica* (*oldongururwo*)

Other commonly used fruits include:
- *Rhus natalensis* (*olmisigiyioi*)
- *Scutia myrtina* (*osanangurut*)
- *Cordia monoica* (*oseki*)
- *Grewia similis* (*olnyalugwai)*

Maundu et al. (2001) identified about 90 species used for human medicinal purposes. The vast number is an indication of the important role played by forests/plants in the health of the local community members. The importance of medicinal plants among the Maasai can be seen in the name, *olchani*, which is used both as a general name for all plants as well as for medicine. Some species are used for the treatment of more than one disease.

As mentioned earlier, the local brew is a popular drink among members of the local indigenous community. Without the fermenting-catalytic effect of roots of *Osuguro*i (*Aloe* species), local beer making process would be a different story. As a result they are also valued for their water content. All soups are characterized by a slight sweet taste and a juicy consistency. *Acacia nilotica* is the most frequently used soup plant (*Olkiloriti*). This species is also used as a stimulant by warriors.

Other uses

Needless to say, a variety of personal and household items are carved from various plant species derived from the forest. These items range from armor and weapons of war (including clubs, spears and machetes' handles, arrow shafts), to households items such as chairs and serving spoons amongst others. Other uses include livelihood options enhancing tools such as beehives and cattle troughs. According to Maundu et al. (2001) the most commonly used species are *oleleishua,* (*Tarchonanthus camphoratus*), *enchanie-embae* (*Allophylus* sp.) and *entulelei-entim* (*Erythrococca bongensis*). Beehives, mortars and troughs which need hollowing out are preferably made from trunks that are partially hollow. Most honey, however, is collected from trees in the forest or under rocks. On the other hand, clubs, tools for

branding animals, and sticks for walking, are made from tough wood.

Wood such as that of *Teclea* and *Olea* is made into clubs. Some species such as osokonoi (*Warburgia salutaris*) used as toothbrushes are known to have a medicinal value as well. Other minor uses include certain species of trees as source of dyes and poison used with arrows for hunting and defence.

Forest as a key source and store of indigenous knowledge

It is evident from the foregoing that a substantial amount of indigenous knowledge on environmental management, the relationship between the community's social organization, cultural practices and nature, has a strong and intricate connection with the forest. To the Loitans, the forest serves as a natural classroom through which all members of society learn not only about the forest and its physical resources, but also the intricate relationship existing between the environment and people lives. This knowledge is transmitted across generations through, oral narratives, shared values and norms, ceremonies and through personal experiences within the forest ecosystem. The knowledge gained not only empowers individuals for their basic survival, but also provide avenues for enhancement of shared community identity, vision and perpetuation of an indigenous worldview that promotes environmental integrity. Arguably, this shared value system, knowledge and world view is what has ensured sustained management and conservation of the forest long before scientific and global efforts to save forests such as REDD+ came into being.

The Maasai classification of plants is generally based on a combination of general morphological features, the habitat of the plant and its perceived character and use. According to Maundu et al. (2001) the factor that most influences the specificity of a name is its use. Plants with distinct uses have distinct names. The names are more consistent for plants that are commonly used: for example, *Pappea capensis*, a most useful plant among the Maasai, is known by the names *orkisikong'o* and *oltimigomi*. This is consistent throughout Maasailand.

Conservation and Tourism issues

The positive co-existence between indigenous peoples and forests, and the environment more generally has been associated with high concentration of biological diversity the world over. Unlike most agricultural communities in the country who have dissipated wildlife within their localities to near extinction, the Maasai in general and the Loita Maasai section more than any other have co-existed with wildlife for millennia. This scenario is attributed to the traditional norms and taboos practiced and promoted by the community from time immemorial which foster positive co-existence with the environment. The location of most National parks and nature reserves within the country demonstrates this reality. Most of the Wildlife sanctuaries, Parks and Reserve are found within or adjacent to Maasai territorial domains. Wildlife accounts for 90 per cent of safari tourism and 75 per cent of total tourism earnings (Gok 2009; Lamprey 2004; Thompson et al. 2009).

Maundu (Gok 2009; Lamprey 2004; Thompson et al. 2009) observe that instead of often reaping benefits for being indigenous people who are the natural and primary conservationists in the country, the Maasai community have often paid a high price for this. This loss initially came in the form of their alienation from their land in the interest of wildlife conservation purposes under an exclusionary policy that saw human beings as a threat to wildlife, thereby reducing the grazing range for these pastoral communities. While community ranches and rangelands such as the Loita forest are accessible to Wildlife, the parks remain restricted and unavailable for livestock grazing. The presence of Wildlife in community grazing areas has often exacerbated human-wildlife conflict in these areas. The conflicts come in the form of direct losses of life and property, diseases brought by wildlife such as malignant cater fever (brought by wildebeest), competition for fodder, destruction of water points and a general disruption of daily livelihood activities, especially by elephants. These tensions have been reported to be on the rise, a situation that is partly attributed to climate change (Lamprey 2004; Thompson et al. 2009).

Daily Indigenous Peoples' Livelihoods Activities and the Forest

The forest is essentially at the core of the very existence of this indigenous community. There is hardly any activity undertaken by members of this community that has a direct or indirect relationship with the forest. The connection between the people and the forests transcends all social divisions of gender, age and other social stratifications within the society. Men and women; the old and the young alike are connected to the forest in unique ways in their daily livelihoods activities. *Oloiboni* (the spiritual) leader, for example, cannot perform any of his ascribed rituals, roles and duties without the forest. The forest and the diverse resources within it appear to provide the media/bond through which the Oloiboni can commune with the ancestors and the supernatural in his mediation role between the divine and the mortals.

The *Ilpayian* (adult males) and their livestock herding and grazing duties see the forest as the resource of ultimate security/insurance against drought and famine. It is the source of all waters and medicinal plants. The forest and all its provisioning services is at the centre of the Maasai social and cultural identity evidenced by the fact that all rites of passage from birth to death utilize some aspects of the forest. The small population of *Iltorobo* (hunter gatherers) found in Loita area, derive their livelihood directly from the forest. Here, they hunted and collected honey and have since settled among the rest of the Maasai, intermarried and become integrated into the Maasai culture, though without entirely rejecting the traditional mode of production.

Like their male counterparts, the forest holds great significance for women too. Women are the caretakers of members of the household on a day-to-day basis. The woman in the home builds her own house and looks after the children and the welfare of her family unit, including her husband. She is responsible for her portion of livestock from which she gets milk for the family. She is also responsible for gathering firewood which in Loita may be obtained from as far away as seven kilometers and loads of up to 60 kilograms are gathered up to four times a

week. The whole process of fetching, gathering and bringing firewood home may take up to two-thirds of the daylight time.

Warriors and the forest

For varying periods, sometimes lasting up to seven years, the boys go into the forest to train and become educated in a variety of skills and knowledge, ranging from fighting techniques to the knowledge of medicinal plants and their uses. A selection of respected elders from the villages acts as tutors. A large initiation ceremony held in a specially constructed village of up to a hundred traditional huts in an isolated area (constructed by the mothers of trainees) marks the end of the warrior and training life. After thes rite of passage, the young men are now allowed to marry.

The forest provides nutrients for children. It provides the best learning opportunities for children on matters related to nature, environment and general community livelihood through childhood activities such as looking after animals and the years spent as warriors. The forest provides a link between and among the generations. The fact that, the forest is named after a lost child—Naimina Enkiyio—it embodies a nostalgia for youth and childhood.

Forests Benefits to Other Communities

During the extreme drought of 2005-2006, almost all Loita animals were grazed in the forest. The Loita community has an indigenous tenure system that grants use rights of natural resources to various groups in and outside the community. The land, both the rangeland and the Loita Forest, has been shared by multiple users for grazing, traditional and cultural ceremonies, harvesting of medicinal plants, and construction materials and as a source of water. There are certain resource types and uses that are strictly controlled, while other resources are more freely accessible.

Since the Loita community does not live in isolation, there is a mixed pattern of grazing between them, the adjacent Purko community and the Loita Maasai of Tanzania. The Loita Maasai,

especially the ones bordering Tanzania, drive their cows to Tanzania during the dry season for pastures and salt licks because the rains start earlier there. The Tanzanian Loita, in turn, bring their cattle to the glades during prolonged dry seasons. The Purko Maasai drive their cattle to the southern glades of the forest during extreme droughts. As long as the boundaries of the territories are undisputed, the sharing of seasonal pastures by different Maasai sections poses no threat. It is a reciprocal right used during emergencies and regulated by customary laws. In this case and depending on the season, the Laibon and the herders have overlapping rights to use the forest for cultural ceremonies and grazing, respectively (Ole Siloma and Zaal 2005).

FOREST THREATS & PROTECTION MEASURES

Land, like the forest, has always been regarded as a communal resource to be used by everyone. The local indigenous community has to a greater degree of success protected and managed the forest for years under their customary tenure system. This endeavour has not always been an easy one would have been imagined. Threats, both to the indigenous customary system and to the forest itself have mounted over time. While most of the serious threats are exogenous in nature, there is no lack of threats which are of an endogenous origin. These threats range from an ever-increasing frequency and intensity of drought; a rapidly growing population; a widening gap between the rich and poor Loitans; transformation of indigenous peoples worldview through notions of individual property rights and individual profit market-oriented transactions; encroachment by crop-farming and disputes of ownership and control between the locals and bureaucratic institutions of the state and International conservation NGOs.

Internal threats

In recent years, more and more families have moved and settled at the edge of and even sometimes inside the forest in

order to be closer to the resources they need for their subsistence. This pressure on forest land is a result of diminishing resources, mainly firewood and construction material in the grassland areas and due to increasing competition for good grazing land. Besides a general movement of human settlement towards the forest, there is also a noted change in the style of construction of homesteads and houses which have evolved from simple structures requiring little wood to relatively elaborate and larger structures demanding more construction materials often derived from the forest. Instead of flat-roofed houses for example, houses are now built with slanting roofs thatched with grass, often with a square base reminiscent of Bantu styles of construction. According to Maund et al. (2001) these types of houses use split wood with specific characteristics for the roofs. For example, there is increased demand for wood from trees which grow straight, thus narrowing the range of choice of construction material to only a few species such as *oltarakwia* (*Juniperus procera)* and *olpiripiri (Podocarpus falcatus*).

The use of plants as a source of timber is fairly recent. Hand saws for carving logs into timber are also more available and have been reported to have been used in certain sections of the forest. The introduction of hand-saws has been linked to influence from non-Maasai timber poachers working in cohort with a few locals. Poles from plants which are strong and resistant to termite attack and decay are used to support the main structure of the house. Examples of these tree species include *Juniperus procera* (*oltarakwai*), *Olea europaea* ssp. *africana* (*oloirien*), *Acacia nilotica* (*olkiloriti*) and *Olea capensis* (*ololiondoi*). These modern homes and houses have emerged hand-in-hand with a new form of fencing wherein traditionally-used thorny bushes and branches are increasingly being replaced with more solid and high poles. It is evident therefore that modern construction puts a lot of strain on certain tree species in the forest and as more families opt for this type, the species are likely to diminish in the near future (Maund et al. 2001).

The human and livestock population is equally increasing, thus putting pressure on both the rangelands available for grazing and other forest resources necessary for both human and livestock survival. The region now has more livestock than ever

before. Grass and browse are become increasingly diminished earlier in the year, extending activity to forest grazing areas which are usually reserved for extreme drought conditions. In addition, bush encroachment has been responsible for diminishing grass resource. Large areas of what used to be grassland just a few years ago have now turned to bushland and woodland.

Related to these new forms of ideologies and notions of modernity associated with the demands of development as informed by western ideologies and value systems as well as influence from neighboring communities and population pressure, is the emergence of more and families practicing subsistence agriculture**.** Until a few years ago, the members of this local community hardly engaged in farming activities. A few people, mainly under the influence of the neighboring agricultural Sonjo living across the border southern in Tanzania, started irrigated farming at *Olmesutie* region in Loita division. They grew vegetables and maize. Maundu et al. (2001) observed that due to the abundant supply of water and fertile soils enriched by animal manure, harvests from the often 0.25 to two ha plots, turned out to be good despite the high labor input for fencing (protection from livestock and wild animals). This positive result in crop farming is attributed to the ever-growing interests in participation of community members especially in the cultivation of maize and beans. As more and more grazing land is planted to crops, pressure is exerted on the forest which livestock depend more on for grazing.

Forest fires

Fires set intentionally by humans are a threat to many ecosystems, especially in the tropics. Our earlier research on National Policy and program analysis in Kenya indicated that fire outbreaks in forested areas of the country have become more frequent, leading to annual losses of more 5,700 ha per year (KFS). Pastoral communities including the Loita Maasai have often used fire as a pasture management strategy and also to control tick-bone diseases. Due to disruption of grazing patterns as a result of changing weather patterns and population

pressure, this practice is no longer effective.

Repeated burning over time has resulted in open glades with excellent pasture, which are often maintained by the use of fire. According to the local community, the glades still constitute part of the forest. Fire is also used by *Iltorobo* and to a lesser extent by the other Loita Maasai during wild honey harvesting. *Oltarakwa* ((*Juniperus procera*) is particularly susceptible to decimation by fire owing to the fact that it is the species most habituated by honey bees. Overall, the impact of fire on the forest is still minimal due to regulation by various customary institutions and belief system and the small number of *Iltorobo*, who have since diversified their livelihoods from solely depending on hunting and gathering (Maundo et al. 2001).

Despite the existence of internal threats to the forests which should raise commensurate concern, the area has, to a large extent, remained one of the few well-conserved indigenous forests in the country. The internal threats appear at the household level targeted at satisfying local needs as opposed to large-scale market driven interests. The small sizes (2 acres) of agricultural plots, for example, are sustainable and compatible with forest and community interests if well coordinated and regulated. The greatest threats to the forest therefore is that from outside the community often driven with raw interest for profits and investment and lacking in the shared value system and worldview common among the local indigenous community members.

External Threats

Land ownership and Forest tenure threats

Prior to the colonial encounter and the subsequent introduction of the state in Kenya, all land was managed by the different ethnic groups in the country under traditional customary tenure systems. The use of pastoral resources is based on a complex set of temporary or more permanent claims on pastures and on underlying principles of flexibility and reciprocity (Mwangi 2008). The contemporary relationship between the state and pastoral groups is a multifaceted and complex one, reflect-

ing conflicting tendencies of both parties. Whereas in the first half of the twenty-first century pastoralists occupied peripheral spatial position in marginal areas and witnessed minimal interference or control by the nation-states, this has since changed. The states' control was enhanced through improved modern means of transportation and military technologies relegating the to reduce nomads to a subservient position, and to gradually driving pastoralists into a socio-economic marginal position (Meir 1997).

Pastoral areas historically, have therefore formed the borderlands of their respective nation states and due to their seasonal migrations, pastoralists rarely recognize state borders. Pastoralists tend to view government as alien and unrepresentative of their interests and concerns. Furthermore, pastoral groups often form the minority of any country they occupy, and as minorities on the fringes of national economic life, pastoralists become disempowered and neglected by governments (Blench 2004; Galaty 1981; Fratkin 1998; Meir 1997).

In order, therefore, to contain pastoralists within restricted regional and State boundaries, policies on land tenure geared towards extinguishing of customary rights to land and replace these with individual and private property rights to land were established. To achieve this, the colonial administration introduced three broad categories of land tenure systems in the country which were later perpetuated by the postcolonial state, namely Public, Private and Communal and holdings. Communal tenureship was further divided into Group ranches and Trust lands.

Like the Loita forest—the main resource of the Loita Maasai—all land in Loita is held in trust by the Narok County Council on behalf of the government. Although the present-day Loita division where the forest is located became an adjudication section under the wider Cismara[3] in the early 1970s with the intention of progression into a group ranch and finally to individual ownership through land subdivision; to date, the community has resisted adjudicating their land into group ranches. This, they say will jeopardize their very survival strategy since the forest and the open rangelands are complimentary and hence could only be more beneficial when utilized as one

ecosystem. This transformation of customary rights to land into trusteeship under the control of local authorities (Narok county council in this case) set the stage for future/subsequent struggles over ownership of the forest and its resources. The trusteeship only applies to the areas covered by the forest leaving the plains to the south and west of the Loita forest under communal ownership ((Kantai 2000; Zaal and Siloma 2006).

Maundu et al. (2001) and M. Zaal and M. Siloma (2006) point out that the high potential of the forest as a tourist site and a conservation area, as well as its natural resources and its potential for farming have been the source of conflict which pitted different groups within the Loita Maasai, between the Loitans and the Purko; and between Loita/Purko Maasai and the Narok County Council.

The Case of Narok County Council vs the Local Community

This case perhaps remains one with far reaching ramifications, because it threatened not just resources within the forest but it was an onslaught to the very legitimacy of ownership of the forest by the Loita Maasai community. By mid-1993 Narok County Council (NCC) announced its intentions to gazette the forest as a Reserve. The reasons advanced by the Council included the need to ease the tourism pressures on the neighboring Maasai Mara Game Reserve and subsequently generate revenue for the benefit of the entire Kenyan citizenry. The emphasis here was on the economic value of the forest resources with total disregard of what Zaal and Siloma (2002) refer to as "the non-monetary use value of the forest in the livelihood of the original users." This, they say should be compensated for, not only through provision of adequate alternative sources of livelihood, but more importantly through effective participation; and I would add, including free, prior and informed consent.

This move was vehemently resisted by local residents who were concerned that this would lead to alienation of their rights over the forest and its resources. Likewise, it did not help matters that previous experience with the NCC as a custodian or trustee of communal resources was not perceived to be particu-

larly positive or beneficial to local communities. Closer to home for the Loitans, was the case of Kamorora[4] where the community lost hundreds of acres of land due to unsatisfactory stewardship of the NCC. There was also very little to show in terms of direct benefits to the community for the handsome sums of money generated from the Maasai Mara game Reserve other than the restriction of access to the park for grazing of livestock of pastoral communities, even under extreme drought situations. The level of deforestation and degradation witnessed at the Maasai Mau forest under the watch of NCC presented yet another direct and clear premonition of the fate of the Loita forest if disconnected from the indigenous community's values system that have contributed to its conservation for years (IUCN 2002; Zaal and Siloma 2006). The community had apprehensions that the forest might be invaded by loggers but more importantly, the community saw the move as an assault on their very existence over and above any economic losses.

In the struggle that ensued between NCC and the local community that lasted for a decade (Annex B), the community employed a diverse array of strategies to fend off the demands of the Council. The members of the community evoked their diverse identities to assert their rights and claims to/over the ownership and control of the forest. As citizens of the country, they instituted public litigation (court case), organized petitions and protests. As indigenous people, they utilized traditional institutions such as that of *Oloboini* (spiritual leader) and tapped into the international movement of indigenous peoples' rights. Community representatives, for example, had an opportunity to present their case during the second session of Intergovernmental Meeting on the Convention on Biological Diversity (CBD) in June 1992 and during the CBD meeting held in Nairobi in 1994. Intensive lobbying was also done in 1993—the UN Year of Indigenous Peoples (IUCN 2002).

The struggles also brought to the fore underlying differences and interests between the Purko and Loita Maasai section on the one hand, and between various interest groups within the Loita community itself and other non-governmental organizations interested in conservation such as International Union for the Conservation of Nature (IUCN) among others (Annex A

and B). As a result many other institutions emerged to either compliment the role of already existing traditional customary institutions or run parallel to these. According to IUCN (2002) and evidence adduced from interviews on the ground, the Purko-Loita differences stemmed from shared territorial ownership of different parts of the forest, and the sharing of benefits accruing from the existing limited tourism activities associated to the forest. This is due to the inappropriate allocation of parts of the forest by the Narok County Council for campsites, and ignoring the procedures that had been laid down. Despite the divergent opinions and other narrow interests of some local community groups, they were all in agreement that the Maasai communities living adjacent to the forest should own and manage the forest. International conservations NGOs cite what they term as ecological significance of the forest and threats to it, post by increased interest in development projects as the justification for external intervention to establish management systems that would integrate traditional knowledge and customary institutions with modern conservation and management techniques (IUCN 2002).

One of the Key institutions that emerged during the legal tussle over forest ownership is the Loita Naimina Enkiyio Conservation Trust (LNECT). Since the fight pitted the "legal" institutions of the state against the traditional customary institution, the community had to seek for a "legal" entity under which they could channel their claims in a court of law. It is under this hybrid institution which had brought together the traditional spiritual leader (*Oloiboni*), community elders, and NGO workers within the region, government representatives and politicians that the community took the Council to court in May 1994. In this case, the Loita Maasai held that it is they, not a government agency, who were—are—the real custodians of the forest. Therefore, they asserted, any decisions about the future of the forest should be made by them; after all the forest has been preserved all these years courtesy of their traditions (IUCN 2002, Kantai 2000; Zaal and Siloma 2006). While the council held that trust could only be vested on one body (read: the Council), the community argued that the trust previously bestowed on the Council has been abused/breached and consequently lost at the

moment that the Council made a unilateral decision to alienate the forest from the local indigenous community without seeking their full and effective participation in the decision making processes.

In a landmark ruling, the court overturned the Narok County Council's Minutes 69/93. The LNECT also obtained an injunction against any Council decisions over the Loita forest, thus barring the Council from turning the forest into a nature Reserve. A ruling on whether the County Council has the right to alienate the forest has, however, not been made. It appeared that the community has only won the battle but not the war. The case, nevertheless, set a legal precedent: for the first time customary law was pitted against statutory law and prevailed.

It remains to be seen whether the out-of-court settlement recently entered between the LNCET and NCC over the management and conservation of the Naimina Enkiyio forest will withstand the test of time. At a full Narok County Council meeting held on 6 August 2002, the Narok County Council rescinded its earlier decision to alienate the forest. It also decided to opt for an out-of-court settlement for the court case and to support a community based conservation of the same by the Loita and Purko Maasai communities living adjacent to the forest (Kantai 2000; IUCN 2002)

By the time the Loita forest ownership contest between the Local Maasai community and Narok County Council was gathering momentum, the indigenous peoples' discourse and movement, globally and nationally was also at its formative stages. The United Nations, through its resolution 48/163 of 21 December 1993 (UN.org 1995), had just proclaimed the International Decade of the World's Indigenous People, which was to commence on 10 December 1994. Around the same time, after the Rio Conference of 1992, the UN Convention on Biological Diversity (CBD) had recognized the close and traditional dependence many indigenous and local communities have on biological resources. Article 8 of the CBD not only recognizes the interrelationship between the natural environment, sustainable development, and the well-being of indigenous peoples but under Article 8 (j), Contracting Parties also specifically commit them-

selves to respect, preserve and maintain the knowledge, innovations and practices of indigenous peoples and local communities (Campese et al. 2009, 49).

The LNECT, and indeed the local community elites, saw this as another window of opportunity to lobby for international support under the indigenous peoples discourse to put pressure not only on the Local authority but also on the state, to recognize their inalienable rights of ownership and control over the forest. The principles of indigeneity—distinct cultural identity, original/first territorial occupation, socio-economic and political marginalization and self-determination—gave indigenous peoples the grounds to defend their case against a government that systematically neglected their right of access to traditional resources and threatened their indigenous cultural heritage. This indigenous peoples' perspective was received more positively in the global arena than in the state/Council's perspective that hinged on development discourse. Perhaps, the UNESCO-funded Loita Ethnobotany Project initiated in 1995 with the aim of enabling the Loita community to develop a locally directed management plan for Loita Forest, was one positive outcome of this international lobbying. This Project from which this research draws considerable insights was coordinated by the Loita Naimina Enkiyio Conservation Trust.

FOREST GOVERNANCE: INSTITUTIONS AND REGULATIONS

Indigenous Institutions

Four broad institutions of governance are central in the sociopolitical and cultural organization of the Maasai society, namely: *Olosho* (12 territorial section); *olgilata* (clan), *Olporr* (the age-set system) and *enkidong (*the guard, office of the prophet*)*. Although each of these institutions has a clear jurisdiction, be it territorial, thematic, or lineage related, they also serve to reinforce each other while at the same providing checks and balances.

The institution of *olosho,* essentially encompasses a geographi-

cal region owned and controlled by one of the 12 sections of the Maasai ethnic society (described earlier in this paper). Four of the 12 sections are represented in the larger Narok district namely: *Ildamat, Keek-onyokie, Purko and Iloitai.* The governing organ of Olosho is the council of elders. All elders within the community are natural/default candidates for this office but often individual agency—wisdom, charisma, courage, integrity wealth, and other leadership attributes sets certain individuals above others.

The decisions made at these levels concerns interaction between one section and another, generally the section's relations with the external environment. Regulation of grazing patterns and management of other natural resources such as forests and water points falls within their jurisdiction. The Council of Elders is therefore akin to a community's judiciary, settling disputes and meting out punishment, usually in the form of fines (Galaty 1981; ole Siloma and Zaal 2005; Maundu et. al. 2001; Kantai 2000). The Loita Council of Elders (LCE) is thus a very critical indigenous institution in the management of the forest.

The Clan is an equally important customary institution. This social organization structure constitutes all individuals descending from the common, often male, ancestors. The social structure is diffused in nature, transcending territorial boundaries and age-set system limits. In general, there are nine such clans spread all across Maasailand. Unique to the Loita Maasai is the fact that, over and above the leadership based on the age-set system, similar to the rest of the Maasai sections; each clan has its recognized spokesman (*Olaiguanani)*. The leadership decisions associated with the clan center around distribution of resources, inheritance and settling of disputes/conflicts within the clan. One classical example is the payment of *inkirro/iloikop* (blood-wealth). Once a kinsman murders another Maasai from a different clan than his own, it is the responsibility of the clan to settle the often very inhibitive penalty which meted out for the act. While the clan structure determines who and what may be inherited by age-set members; the ages-set system determines when they would inherit for sons become eligible heirs only after circumcision and affiliation with a specific age-set (Galaty 1981).

The age-set system is one of the most central structures of social and political organization among the Maasai. In short, age-sets organize men into groups of age-mates who pass through various stages of their lives together through ritual promotion. A new age group is opened approximately every seven years with the circumcision of young boys, ritually transforming them into *ilmurran* (loosely translated as warriors). Over a 14-year cycle, these successive pairs of age groups (identified as the left and right hand) merge through a ceremony (*enkang ooloriakan*) to form a single age-set and graduate together to become junior elders. From junior elders they graduate to senior elders and eventually to wise retired elders (Zaal and Siloma 2002). The three institutions listed above are also mediated at different moments in the society's social and political organization by the office of *oloiboni*.

Each age-set system has a set of leaders nominated by elders in consultation with *Oloiboni* during boyhood. "They are lifelong officials whose power stays throughout their lives," offered one respondent. As warriors, the age-group is in charge of ensuring the security of the community. They also serve as scouts who search for better grazing/pastureland, watering points and salt licks for livestock. The age-set provides an excellent social structure for learning the ways, cultures, indigenous knowledge and systems of the community. Decisions made within this institution center around distribution of resources within the age set ensuring the spirit of sharing and reciprocity—including reciprocity with nature. Decisions related to cultural practices, rituals and ceremonies are also made in consultation with the elders and *oloboini*. Each age-set is nurtured and mentored by an older age group one age grouping ahead referred to as *Olpiron* (fire-stick elders)

Iloibonok

Nkidongi is the name given to members of a sub-clan that descended from Kidongoe.[5] From his stock , the Maasai believe that individuals from this family are endowed with divine power to foretell things, mediate between God and man; and prescribe remedies for impending calamites. This then gave rise to the

institution of *enkidong or enaibon*. The holder of such an office is called *oloiboni (*plural. *iloibonok)* and his powers are hereditary (passed on to male sons), though regulated through conferment by the incumbent. The *Nkidongi* clan is predominantly settled among the Loita Maasai. In fact, oftentimes the two names are used interchangeably to refer to the same Maasai section. Although there are several *Iloibonok* at any given time in Maasai land, often, only one of them is recognized as the great or Chief Oloiboni. They are consulted for advice during major events, and may prepare medicine for the treatment of ailments. They thus have social as well as spiritual control and command great respect in the community.

It is difficult to dissociate the of *Oloboini* from the forest. To begin with, *Oloboini* uses a gourd (*Lagenaria siceraria*), herbs and a collection of other paraphernalia both for healing, and for prediction of future events, all of which are found in the forest. Additionally, *Oloboini* performs his ritual duties in specific sacred sites in the forest. The forest is therefore not just an economic resource but also a spiritual cathedral of the community. The current and most respected spiritual leader Mokompo ole Simel, an Iloitai, lives at the edge of the Loita Forest and serves as the spiritual leader of the entire Maasai community. His duties range from those of presiding over rituals and ceremonies such as the age set initiation and cleansing rituals to those of generally overseeing all major traditional events including blessing the paraphernalia required for rituals. By virtue of his position, he is the overall caretaker of the Loita Forest. He is believed to posses the power to stop malpractices in the forest, such as over-exploitation of a specific species. The institution of the *Oloboini* is, therefore, central to the conservation of Loita Forest. This is also evidenced by the fact that Mokompo ole Simel the chief *Oloiboni*, presently heads the Loita Naimina Enkiyio Conservation Trust (Maundu et al 2001; Kantai 2000; Zaal M.) and sits in the Loita Council of Elders.

When the research team visited him at his home at *Olngarua,* the now elderly man became lyrical and poetic and eloquently described what he perceives to be the precious jewel that is the Loita forest which is given protection by the powers that he wields. courtesy. He asked, "Koree apa ilkulikae supuki, koree

apa Osupuko le mao?" ("What became of other highlands forests, such as Mao?"). He added: "osupuko le Mokompo ake oitashe; enchilishil nimidol" ("Its only the highland forests of Mokompo that remains standing; you may desire it but you'll never get it!"). He takes pride in being able to forestall the moves of the council to take over the forest and he is not alone in this endeavor. Community members who were interviewed believe that his supernatural powers influenced the initial positive high court ruling in favor of the forest and the community.

State Institutions and Agencies

Kenya has two levels of political representation; parliamentary at the national assembly level, and civic at local authority or county council level. Loita division (where the forest is found) forms part of the greater Narok south constituency and district, represented by one Member of Parliament. At the local authority level, the division has two wards and hence two councillors from the region representing the community in NCC with a total of 46 councillors.[6] Running parallel to this system of political representation is the so-called provincial system of administration under the office of the President. Established by the colonial regime and perpetuated by the successive independent governments, the system divided the country into provinces, districts, divisions, locations and sub-locations with respective administrative offices/officers to go with it; i.e., provincial commissioner, district commissioner, district officer, chief and sub-chief respectively.

Under this system of provincial administration, Loita division is divided into five locations and eight sub-locations with a corresponding number of chiefs and sub-chiefs. Overall, the system of provincial administration promotes implementation of all government policies, and the establishment of law and order within the locality. The officers act as ex-officio members in most development institutions in Loita.

The officers derive their mandate not from the local people but from the appointing authority—the Office of the President. It follows then, that they are also accountable to the central gov-

ernment. Because of these, the system has often been criticized as being more pro-establishment than pro-people—a legacy that has its roots in the British colonial philosophy of divide and rule. Nonetheless, the system remains a critical institution in the management and distribution of rights and privileges to resources, including forest resources at the local level.

Evidently, these structures of governance related to the emergence and establishment of state in Kenya were superimposed on existing indigenous customary institutions of the local communities. Oftentimes they complement each other; other times however, they are antagonistic in nature. Arising from the power inherent in the concept and structure of the state, modern bureaucratic institutions often undermine the traditional institutions of local communities. According to Zaal M. and Siloma M. (2006) government officers often assume responsibility over resource management at the local level. With the legal and resource backing of the state, these institutions have an upper hand in influencing decision making at the community level. Balancing national interests of revenue generation and distribution at the macro-level; and local community interest at the micro-level, remains the major challenge of such a multi-layering of institutions. The provincial system of administration runs parallel with that of local authorities.

The local authority at the district level represents a devolved form of political representation and governance structure. Being in Narok district, the two Loita wards have two democratically elected councilors to the Narok County Council. Presently, the Council has a total of about 50 councilors (elected and nominated), most of whom come from the more populous Purko Maasai section and a few others from the neighboring Kalenjin community. The top decision-making organ of the Council for local resource distribution is the full Councillors' assembly. The administrative issues are handled by the council clerk, who is appointed by the Minister for Local authorities. Decisions are therefore in the form of Council resolutions, and numerical strength becomes critical in lobbying and advocating for specific interests—a strength the Loitans do not have.

The local authority, acts as custodian and or trustee of all

land under customary tenure, administered under the Trust Land Act. The Loita Forest is legally "protected" as Trust land forest held by the council in trust of the local indigenous community recognized as original owners. Thus, the council's role in the management of the forest and associated resources is very crucial. It is these powers of trusteeship that the council evoked through a council resolution of minutes 69/1993 to advance her intentions of gazetting the forest and by extension alienating it completely from the local communities and subsequently opening it up for commercial mass tourism activities.

Under the present circumstances nothing within the law can deter the Council from negotiating and entering into agreement with any private developer interested in Carbon trading or emission offsets or REDD+ for that matter, with regards to Loita forest. In fact, the Trust Lands Act empowers the council to alienate land under certain conditions. The Act stipulates under articles 13.(1): "In pursuance of section 117 (I) of the Constitution, a council may set apart an area of Trust land vested in it for use and occupation...for public purposes, extraction of minerals or mineral oils, and to benefit the persons ordinarily resident in that area" (Kenyalaw.org). Although the Trust Lands Act clearly stipulates procedures to be followed during this delineation process, in reality this is hardly the case.

Other Emerging Institutions

Other key players with enormous influence in the management and conservation of the Loita forest include the Ilkerin Loita Integral Development Project (ILIDP),[8] Loita Development Foundation (LDF) and the Loita Council of Elders. ILIDP as a local development NGO is managed by a Board of directors composed of traditional indigenous leaders' representatives and local regional (PCDAs) representatives among others. It thus taps into all types of the established institutions in the division. ILIDP is the longest serving and most influential NGO in the region. It has played a critical role especially in external lobbying and advocacy, the establishment of the "new" version of the Loita Council of Elders and documentation during the struggle over ownership and control of the Loita Forest be-

tween the community and NCC (ole Siloma and Zaal 2005; Maundu et. al. 2001).

The most powerful institution in Loita is the Loita Council of Elders (LCE), which has come to play a key role in development activities and the management of natural resources, including the Loita Forest. The council has evolved from the traditional fluid Elders' council without a clearly defined membership, to one that has a recognized membership drawn from all relevant customary, government and elected leaders in Loita, though still retaining its informal nature.

The new broadened and enriched council, makes the major decisions in Loita, including land and natural resources issues. The ability to bring together the traditional knowledge, systems and practices as experienced by the clan, age set leaders and the *Oloboini*, with that of modern and scientific knowledge from NGOs, the elected local politicians and government officers, makes this institution most encompassing and influential. It is this institution that was later transformed into the Loita Naimina Enkiyio Conservation Trust Co., registered as a local trustee in charge of forest management.

This hybrid institution is a result of strategic engagement by local indigenous customary institutions with the contemporary and more powerful institutions (in the context of the state) to access broader social and political networks so as to attain control over their threatened resources. This process is anticipated to keep evolving with the subsequent changes in social, economic, political and environmental dynamics. The challenge with these institutions often remains the source and guarantee of its legitimacy within the law; especially when its goals are deemed to be in opposition with state interests, and with the state retaining the power to (de)register them (Siloma and Zaal 2006). This case demonstrates how traditional institutions governing access and use of resources, may be mobilized and linked to higher-level institutions with the goal of securing local interests in the context of emerging contestation and competition over scarce, threatened and diminishing environmental resources.

LDF[9] is an NGO currently undertaking livestock and conservation/tourism development related activities in Loita division. Some of its board members still sit in the LCE and ILIDP. Through its extensive network of management of veterinary shops in the division the organization has established a strong reputation and presence in the community. Its attempt to establish an eco-lodge at the periphery of the Loita forest was initially objected to, on account of what some community members interpreted to be less participatory and consultative process leading towards the establishment of the project. Some of the locals interviewed who seem to support the eco-lodge idea expressed the desire to enhance current tourist-related activities such as walking safaris, hill climbing and hiking in the forest, outdoor survival, map reading and navigation, horse riding, donkey trails, and cultural exchanges, and small tented camps. This they say, if well designed and implemented to guard against the temptation of mass tourism and targeted at exclusive environmentally friendly activities instead, would serve to supplement their livelihoods options and contribute to sustainable management and utilization of the forest ecosystem.

In line with the struggle over forest ownership, NCC commissioned IUCN, to undertake a study on the quality of the Loita forest resources with the ultimate goal of establishing a management plan that would cater to all the competing interests of recognized stakeholders in the perspective of the council. At some point the LCE supported this idea and IUCN was invited to undertake the project between 1998-1999 (Siloma and Zaal 2006). However, the proposed plan did not go well, especially with a group calling itself the "Concerned Loita Citizens" (CLC) who opposed this process. An unfortunate result of protest actions initiated by the group was the death of one individual who was shot and several others wounded when the police tried to hold off a skirmish (Siloma and Zaal 2006). Other NGOs such as KENGO and EAWLS also joined the fray demonstrating their unequivocal support for the local communities to be allowed to manage their sacred forest and strongly opposed the gazettement proposal by the Narok County Council (Annex A IUCN 2002).

The biggest threat to the council of elder's power had been lurking within the country's statutes for decades. It only came to the fore during the dispute between the Loita and the County Council. While written Kenyan law recognizes the authority of customary law, it only does so as long as there is no conflict between the latter and the former. Considering that formal Kenyan law has its origins in colonial law, whose objective as far as environmental and land tenure issues were concerned, was to exploit resources rather than to manage them, it becomes clear that conflict is inevitable.

The Place of Women in Forest Management

As demonstrated elsewhere in this paper women are not passive players in this whole enterprise of environmental and natural resource management and utilization. As resource users, healthcare providers of the sick members of the households, traditional birth attendants (TBAs) and participants (directly or indirectly) in all indigenous cultural and ceremonial practices within the community; women remain right at the centre of this discourse both as indigenous knowledge generators and holders and as immediate victims of negative impacts of environmental changes, including climate change.

Box 3: A song by the Loita women in fight for their forest

We belong to the illuminated highlands, Our highlands of Karsayia which Our culture and education shall defend, Or together we perish We belong to the illuminated highlands, Where Mokompo* resides We shall never cede you to outsiders

Regions and regions have disappeared, The hot plains of the Mara The cool highlands of Mau, Let us hold onto that of Loita Regions and regions have disappeared, I hear of unpleasantly, The well-lit Loita highlands, You only equal my eyes

We the Loita Community have counselled our messenger ole Sonkoi,** To communicate with those of ill hopes and motives, And tell them to swallow their pride and Desire to conquer the Loita highlands

Source: Forest of the Lost Child, LNECTC (1994).

In the context of the Maasai, women are known to be involved in harvesting traditional herbal medicines, especially as TBAs, mothers taking care of their young ones and as traditional medicine healers (*Enkaiyukoni*)—treating several ailments using herbs from the forest. Furthermore, during certain rites of passage such as naming ceremonies, women are assigned specific roles of gathering branches of the particular tree species to be used in this ceremony *(Ilatimi*). Through the women fertility ceremonies (*Emayian oo nkituaak*) which are conducted in sacred sites in the forest and which also make use of several tree species (as indicated elsewhere in this paper), provide an essential connection between women and the forest. During this ceremony, women perceived to be barren receive prayers and blessings from the elders for fertility.

Women's role as day-to-day caretakers of households, e.g., food preparation and general hygiene provision, brings them to closer interaction with the forests more than their male counterparts. As they fetch water, gather firewood and medicinal and plants for ceremonial uses, women come to develop and appreciate the critical value of forests in the local community's indigenous livelihoods. As these services become increasingly scarce and further away from the original human settlements, women are not only the first to notice; they are also the ones who pay the highest price. These special roles played by women—indigenous knowledge holders and immediate victims of negative environmental changes—are rarely recognized and least of all addressed.

Although, it may seem that women to have very little role to play in the public arena, especially with regards to decision-making over use and access of natural resources, this is not to say they are entirely locked-out. During one of our meetings with the Local Council of Elders, one of us inquired why there were no women representatives in the meetings. In response, an elder said, "Olmurani lai, keetai apake enkiguana naji enolchoni" ("My son/warrior, for ages we've always made reference to a debate with the 'hide/bed.'"). It turned out women often contributed to decision-making processes indirectly through their husbands and or sons. Beyond this, the women in Loita division have also been organized into a Local Women's

Council in the fashion of the Council elders. While much grounds remains to be gained in entrenching full women's participation, this is a bold step in the right direction.

If there is anything that the struggles over ownership of Naimina Enkiyio forest have demonstrated, it is that women are not just passive observers but are, in fact, active players. Women have played a major role in crucial decision-making in the past, including decisions on whether or not to engage in warfare. An important mechanism through which women can influence decisions is through the composition and singing of provocative songs (See Box 3 for an example of a song that was very popular among the Loita community, which used to be sung by women when the court case began, as well as influence opinion at the level of the household.).

Customary law and Regulations on Forest Management

In the course pf this upsurge of different players claiming a stake in the ownership and control of the forest, the local Loita Maasai community who consider themselves original stakeholders and the present users of the forest have organized and strengthened regulations and access rules, thereby enhancing forest management and conservation. The regulations at the Loita Community level are based on customary law. It is an all-encompassing law as long as people continue to live within the strictures of Maasai life and law and as long as the outside world does not encroach on the inner, traditional one (Kanati 2000). The institutions discussed earlier in this paper—the clan, age-set system, Council of Elders, LCNET, local NGOs, *Oloboini* and the community at large—all participate to contribute to the adherence to these regulations which are often unwritten.

Of all the identified institutions Oloiboni stands out as the chief conservator/guardian of the forest. *Oloboini* is believed to possess powers, not only to impose curses and, in the severest cases, ostracize an individual from the community for abuse of the forest and its resources. Further and more importantly, they have the ability to "see" (in the metaphysical, psychic sense)

those who contravene the laid down regulations. The fact that the Oloiboni can "see" without being physically present at the scene of a given outlawed activity makes him a key figure in the forest conservation endeavour. His role as guardian of the forest is enhanced through social norms and taboos relating human relations with nature. Whoever hunted wildlife for food, for example, was equated to an *Oltoroboni* (plural—*Iltorobo*), hunter-gatherers who were looked down upon by the Maasai, and were permitted to hunt wildlife because they held no cattle like the Maasai. To reinforce this, the community believed that if any Maasai who owns livestock still chooses to engage in hunting, his lactating cows will cease to give milk. The rules and regulations depended on the resources in question.

Herbal medicines are collected by specialists who possess knowledge of the relevant species and the specific ailments they cure. The skill is transmitted across generations through apprenticeship, oftentimes within particular families. Both men and women practise it. Majority of the women who practise this are the traditional birth attendants. In the practice of traditional medicine, uprooting entire plants is strictly forbidden. Only the lateral roots are harvested and the taproot is never uprooted. After harvesting the roots the soil is returned so that the plant can continue growing. In cases where the bark of a tree is the part with the medicinal value, only a vertical strip is removed and debarking the entire bole is prohibited. After debarking the exposed part is smeared with wet soil to allow for a quick healing process. This regulation also applies to *Illoibonok's* herbs *(Intasimi*). These medicine men, who hold as a tight secret the nature of plants they use for the treatment of illness and other social maladies; e.g., as antidotes to or ingredients for curses; are not allowed to uproot, remove all leaves, or completely debark trees. Also, although harvesting of honey from the forest is permitted, the curring of trees or use of fire in to harvest honey is prohibited.

Plants and trees used during traditional rituals and ceremonies including *Olkiteng Loolbaa, Emowuo olkiteng, and Olamal loo nkituak* are highly respected and their harvest, regulated on account of their roles in the social and cultural reproduction of the Maasai society. Such tree species include Podo, Ficus, Olive, and

Phoenix reclinata. These tree species are hardly ever cut, and their usage is mainly for these rituals.

The regulations around the use of forest products as firewood and fencing materials are also spelled out. All the firewood used is from fallen deadwood and therefore nobody is allowed to cut standing trees for firewood. The same principles apply for fencing poles. Besides forbidding the felling of standing trees, sourcing of poles is also limited to particular species, in this case mostly cedar posts, which are durable and termite-resistant. For fencing of traditional homesteads, use of acacia branches (a tree found outside the forests on rangelands) is encouraged.

Water points are one other most regulated and protected forest sites. Water points are equated with human reproductive organs. They are sacred because they are means through which life is perpetuated through time and generations. Their value for livelihood in the downstream areas and as reserves for dry-season grazing and watering is recognized and as such, these areas are protected as well. Cultivation and grazing around the water points is prohibited. There are special points which the livestock can go for water.

Like all other forest's products harvesting of logs and timber-sawing for whatever purposes are strictly monitored and controlled by the village elders or the village forest committee. Although individuals are presently using timber for personal/family construction needs, constructions for community-related projects such as classrooms and administration offices takes the larger chunk of timber-harvesting from the Loita forest. Outsiders are prohibited from harvesting timber.

Grazing and cultivation are also highly regulated livelihoods activities. In the case of cultivation it is only practised close to the homesteads and prohibited in the forested areas. Forest grazing is open to all the local community members especially as dry-season grazing reserves.

The forest is generally central to all cultural and ceremonial practices within the community. The forest and its resources are necessary for the performance of the main rites of passage for community members. Some of these ceremonies are held in cer-

tain parts of the forest. For instance the meat-eating festivals of certain age groups are held in any place convenient to the group, whereas others are held in very discreet places known to just a few elders.

CLIMATE CHANGE, REDD+, OPPORTUNITIES AND CHALLENGES

The IPCC (Intergovernmental Panel on Climate Change) reports indicate and confirm that the Earth's climate is changing. Like other indigenous peoples around the world, indigenous peoples in Kenya are among the most marginalized, impoverished and vulnerable section of the population. Added to this historical vulnerability is the extra burden occasioned by the negative impacts of climate change within a context of minimal access to coping resources.

For indigenous peoples, climate change threatens cultural survival, exposes them to more unfamiliar risks, and undermines human rights with minimal opportunities for livelihood diversification. Climate change affects management and conservation of wildlife and forests, thereby affecting the customary uses of culturally and economically important species and resources. Policy makers often overlook the rights of indigenous peoples as well as their potentially invaluable contributions from indigenous' knowledge, systems and practices in the global the search for climate change solutions.

Increasingly, international and national climate change mitigation strategies such as REDD plus pose an additional threat to indigenous peoples territories and coping strategies through possible displacement, mono-cropping plantations for agro-fuels and exclusion from decision making processes by the newly established institutions to address climate change at all levels—local, national, regional and international.

The Loita case study, demonstrates that to indigenous people climate change is more than just a matter of physical climate changes in their local environments. It is, more importantly, a threat to their very existence. Beyond the negative impact on

the natural systems from which they derive their livelihoods, climate change may also result in erosion of social life, traditional knowledge and cultures, hence compounding vulnerabilities of indigenous peoples, worsening economic and political marginalization, land and resource encroachments, human rights violations and discrimination.

It is also evident that indigenous people are active agents of change in the context of climate change. Their dependence on natural ecosystems, which most often has been unstable and unpredictable, means that indigenous peoples have always adapted to changing environments. Therefore, they observe, interpret and react to climate in creative ways, drawing from the indigenous knowledge systems and practices to find solutions. However these adaptation strategies are hampered by limited resources, lack of technology, and various legal and institutional barriers (IIN 2008).

Indigenous Peoples and REDD+

REDD (Reduction of Emissions from Deforestation and forest Degradation) presents opportunities, risks and challenges to indigenous and local communities. The indigenous Loita Maasai community is no exception. Like many other indigenous and local communities; the Loita (rightly) point out that they have historically helped preserve and protect tropical forests long before the new REDD schemes were designed. Current REDD regimes, they assert, should therefore compensate them for their role in forest conservation. There is, for example, growing concern that REDD programs could undermine some of the ecosystem services that the forest provides locally, such as providing food, fuel and medicine to the millions of the poor who depend on forests. Some of the potential risks associated to REDD/ REDD+ include but may not be limited to the following:

- REDD could create incentives for states to restrict indigenous people's access to forest. The insecurity of land tenure for many indigenous and forest dependent communities, especially the case of Loita and its relation to the Council, may make them especially vulnerable to

this risk. This may eventually lead to violations of customary land rights and harsh enforcement measures leading to loss of access to forests for subsistence and income generation needs, land use conflicts and physical displacement;

- Marginalization through new land use zoning exercises may also occur, thereby negating any gains made towards decentralized community based forest management as provided by the Kenya Forest Act 2005 and new Kenyan Constitution;
- Decoupling forest carbon rights from forest management or ownership rights will result in blocking communities' legal rights to financial benefits accrued from new forest carbon programmes;
- Inability to participate in conservation payment programmes due to lack of property rights, lack of information, high implementation and transaction costs may ensue;
- Exploitative carbon contracts leading to uninformed acceptance of terms my result in unknowingly accepting terms that sign away land use rights, assuming liability for forest loss, or acceptance of payments that undervalue the true opportunity costs of land use and the concomitant effect of exacerbating food insecurity; and
- Absence or weak forest governance structures may precipitate the problem of elite capture.

However, as mentioned earlier, a well-designed and governed REDD+ mechanism may provide opportunities to enhance indigenous peoples' livelihood options by:

- Encouraging governments to secure and formalize land tenure for forest dwellers to provide incentives for conservations to those closest to the resource;
- Enhancing revenue generations which could be channelled to social services for local communities to address social inequalities such as in the areas of education, healthcare and water;

- Creation of new income streams for local communities and forest dwellers through their participation in the global effort as sub-national sellers in carbon markets, participants in conservation payment programmes, recipients of carbon funds distributions, or monitors of forest areas;
- Maintaining forests' regulating ecosystem services, which may enhance adaptive capacities in a changing climate where risks of extreme weather and diseases are projected to increase; and
- Maintaining forests' provisioning ecosystem services (fuel wood, medicine food), which may also help buffer communities from the shock of reduced agricultural risks and livestock losses, which are presently occurring due to climate change.

RECOMMENDATIONS

The Country's Vision 2030 recognizes not only the social and economic challenge presented by climate change in the context of weak national coping mechanisms; it equally underscores the fact that the country's economy is heavily dependent on climate-sensitive sectors, such as agriculture, tourism and livestock. The strategy paper observes that over 70 per cent of natural disasters affecting the country are weather-related (Gok 2009).

The stated vision for the environmental sector is "a people living in a clean, secure and sustainable environment" (Gok 2007, 127). Further, the policy document points at the determined government's effort to intensify conservation efforts to achieve a 10 per cent forest cover by 2030. However, the broader goal is to increase current forest cover by 50 per cent. Additionally, current environmental challenges arising from governance and institutional constraints are spelled out and a commitment has been made to enforce all environmental regulations and standards and to attract at least five Clean Development Mechanisms (CDM) projects per year in the next five years. For indigenous peoples in the country, the following areas of concerns

needs to addressed if mitigating climate change through REDD is to be beneficial to these indigenous and local communities.

Land Tenure

Security of land tenure is the single most important factor in the sustainable management of natural resources. Whether discussing management or ownership, the tenure regime will dictate the rights and responsibilities of the various stakeholder groups and any tenure that denies local communities assured access to the forest for the various goods and services they have been drawing from the forest will be received with great resistance. If such rights are not assured, this can result in loss of livelihood for the local indigenous communities who hunt, harvest honey in the forest and allow their animals to graze, rely on the forest as a water source, and for timber resources. The prevention of access to forest land in such a scenario can only contribute to an increase in poverty levels.

Our national policy and program analysis aspect of the research has demonstrated that Kenya's policies and legislation are often weak and conflicting when it comes to natural resources management and ownership. The subservient position occupied by customary law in relation to written English/common law as embodied in the Trust Land, Group Representative Act and the Constitution, is critical in the context of the REDD+ mechanism, particularly with regards to the Loita forest and community. In the Loita forest case for example, it is this inadequacy of policies and legislation that has partly contributed to the unusually long court litigation process, since the court can only interpret the customary rights under the Trust land Act, and the Constitution.

Securing the tenure of the forest and surrounding lands is vital for the future integrity of land use management and livelihood security. Efforts must be made to ensure security of land tenure for local communities whose contribution towards conservation of forests based on their customary law and value system has remained phenomenal. The only secure land tenure that the Loita Maasai can be accorded is the right to own and manage their resources, including the Naimina Enkiyio forest and the surrounding rangeland (IUCN 2002).

Benefit sharing

Benefits accruing from natural resources such as Naimina Enkiyio forest should be equitably distributed amongst all the members of communities living and protecting the area. Mogaka et al. (cited in IUCN 2002) reports that sustainable forest management needs to improve local economic welfare, and generate local economic benefits to sufficient levels and in appropriate forms to counterbalance the opportunity costs incurred. Any REDD mechanism targeted at the Loita forest should uphold these principles.

Non-economic uses of forests

The Loita forest case study has perhaps demonstrated the diverse and elaborate non-economic uses of forest by the local indigenous communities. It is clear that social, cultural and ritualistic uses of forests far outweigh the direct economic uses. The carbon markets ideology that only sees forests as tradable carbon stocks does not fully take into consideration the complexity of the relationship with the land as embodied in indigenous peoples' holistic view of nature. These indigenous uses of forests range from sacred sites and tree species for rituals and rites of passage; to sources of herbal medicine amongst others. It is made worse by the fact that the locations of some of the sacred sites are a closely guarded and kept secret with only one person per age-group being shown their location. These practices are at the core of the local community's social formation and identity. Any REDD intervention in this region must take account of these dynamics if it is to succeed.

Indigenous knowledge

A lack of recognition of the role of the indigenous knowledge, systems and practices in natural resources management at the local level, had contributed to the increasing tensions between the Loita community on the one hand and the stakeholders, including the local authority and other state agencies, development/conservation NGOs and researcher's/research institutions on the other. Thus, indigenous peoples are active

agents of change in the context of climate change. They often respond to climate changes in innovative ways, thereby accumulating knowledge and experiences in the process. This knowledge is passed on through the generations. Besides the knowledge generated and shared; the forest also acts as both a natural source and store of knowledge. REDD intervention within indigenous peoples' localities have to make deliberate efforts to seek synergetic and effective consultative approaches to tap into this enormous indigenous knowledge.

Capacity building is essential to enable local communities participate effectively in any REDD processes. There is need, for example, to carry-out resource mapping of Carbon stocks and Reference emissions levels, account for dry season grazing and identify and document cultural/sacred sites (non-economic uses). Additionally, there is need to recognize and strengthen indigenous peoples' institutions for negotiations in REDD contracting and for Monitoring, Verification and Reporting (MRV) (e.g., Council of elders, Oloiboni). Equally important is the need for codification of customary laws and regulation utilized by indigenous peoples in forest management.

Endnotes

[1] The blessings of both livestock upon returning from far distant grazing lands or blessing of a new homestead by Oloboini (spiritual leader).

[2] Also used to protect livestock against diseases such as foot and mouth under eanata oo nkishu ritual.

[3] Legal Notice No. 100 of 1969.

[4] A section of land hived out of the larger communal land and allocated to some members of the community as a private collective (group ranch in 1970s), with minimal, if at all, involvement of the greater population under the watch of NCC contrary to the Trust land Act.

[5] One of the myths around the origin of Iloibonok is that Kidongoe was found by warriors in meat feast encampment.

[6] Area of representation under the Local authority/Council; represented by a councillor.

[7] Trust land Act (CAP) 288 of 1968.

[8] A local non-governmental organisation that was started in 1968 as a joint venture between the Loita Maasai, the Catholic Diocese of Ngong and the Dutch Catholic co-financing agency for development programmes CEBEMO (now Cordaid).

[9] Key partner with MPIDO under the current NORAD project, especially the Case Study of Naimina Enkiyio Forest.

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ANNEXES

Annex A

Primary Stakeholder	Interest/Stake in Forest
Primary Stakeholders – individuals or organizations who have a direct interest in, or impact on, the Loita/Purko Naimina Enkiyio Forest	
The Local Communities: These comprise of the local people and their institutions who depend on the forest for their existence and as a source of livelihood. In Loita, these include various forest user groups, Local Maasai (Loita and Purko sections) community; Community-based organisations such as Loita/ Purko Naimina Enkiyio Forest Conservation Trust Company, Ilkerin Loita Integral Development Project, Concerned Loita Citizens, Inkidongi Development Society, Olmaa Development and Welfare Association, Middle Ground Group, Loita Women Council, Loita Youth Association, Osupuko Oirobi Development Group, Loita Council of Elders, and Sub centre Development Committees (six in total).	Ownership of the forest by the local community as provided for under African customary law; • Continued management having access and rights to, and being responsible for the forest as has been since time immemorial; • Uncontrolled access to the forest to practice their traditional and cultural ceremonies in the designated sacred sites, and protect them against any desecration; • Dry-season and drought grazing and source of water in the forest for their livestock; • Continued access to the forest for products such as grass, herbs, building posts, honey, etc. as regulated by their unwritten customary rules; • Benefit from the low-scale tourism activities presently taking place that are in harmony with their culture and traditions; • Conserving their forest • Continued regulation of the micro-climate by the forest, for instance, groundwater recharge which ensures flow of water to areas further away from the forest and for long duration over years; and • Preserving their cultural identity as their Deity lives in the forest for posterity.

Government: Both local and central, mandated with the responsibility of natural resources management policies formulation and implementation, and include the Narok County Council, Ministry of Local Government, Forest Department, National Museums of Kenya (The Kenya Resources Centre for Indigenous Knowledge), Kenya Wildlife Service Provincial Administration (Locational and Divisional Environmental Committees).	Revenue generation from tourism and logging activities; • Continued conservation and protection of the forest as an important water catchment, and a refuge for wildlife through gazettement; • Direct management of the Loita/Purko Naimina Enkiyio forest ("command and control" system) to ensure continued flow of revenue.
Secondary Stakeholders and Interested Parties - Individuals or organizations that have an interest in, or impact on, the Loita/Purko Naimina Enkiyio forest	
Non-Government Organizations, and donors: These can be categorised into three subgroups • International conservation organizations, e.g., IUCN – The World Conservation Union, The World Resources Institute (WRI), The African Centre for Technological Studies (ACTS); • Donors e.g., Bilance (presently known as CORDAID), UNESCO, and the EU; **Local conservation organisations,** e.g., Kenya Energy and Environment Organisations – KENGO; Bank Monitoring Unit, a policy research institution of the Africa Water Network in Kenya, East Africa Wild Life Society (EAWLS)	Continued conservation of the forest as a very important water catchment; • Biological diversity conservation; • Local communities benefiting from conservation and using such benefits to improve their conditions of living; • Involvement of relevant stakeholders in the management and conservation of the forest; • Funding conservation interventions; • Raising the capacity of involved stakeholders for the better management of their resources; • Raising awareness and lobbying (advocacy) for the rights of the local communities to manage their natural resources; • Improvement of gender relations to uplift disempowered groups within the Loita Maasai community such as women; and • Playing the role of mediators in case of conflicts between resource-users and decision-makers.

Private Sector: Commercial and Business oriented firms, mainly tourism companies and groups such as National Outdoor Leadership School, Africa Expeditions, Safaris Unlimited, and Nature Tour Guides.	High returns from eco-tourism as a result of the naturalness of the forest and the Maasai culture; • Some your firms support community-development projects out of the profits made from the eco-tourism in the Loita forest and environs; • Continued use of the forest for cultural activities attracts tourists; and • Banning and controlling destructive activities such as logging as these would keep away nature tourists who are environmentally-conscious.

Adopted from: IUCN 2002, 7.

Annex B

Chronology of the efforts made by the Loita Maasai community members against the gazettement of Naimina Enkiyio Forest, and the court case that ensued in 1993

DATE	EVENT/NEWSPAPER /PUBLICATION
Aug. 1992-	Letters, meetings, and communication between the Loita people (through their lawyer) and the Narok County Council, challenging the gazettement
Oct. 9 1992	Letter from the then Director of Forestry to the Ilkerin Loita Integral Development Project (ILIDP) suggesting a draft memorandum of understanding with the Forest Department
Dec. 24 1992	Articles of Association of the Loita/Purko Naimina Enkiyio Forest Conservation Trust Company were made and the Trust incorporated
July 31 1993	Supplement in the Standard Newspaper by Narok County Council concerning an amendment to the forest gazettment notice
Aug. 18 1993	A press statement by 28 Loita Maasai elders led by the Chief Laibon in the Kenya Times & the Daily Nation protesting the gazettment
Aug. 20 1993	Letter By the Loita Community's Lawyers to the NCC contending the gazettement
Aug. 24 1993	Article in the Daily Nation citing a letter from the Loita Community to the Narok County Council about the lack of consultation

Aug. 28 1993	Article in Kenya Times from a press statement by Loita elders petitioning the President of Kenya
Aug. 30 1993	Article in the Kenya Times on discussions about the forest in Narok and Loita
Aug. 31 1993	Letter by the NCC to the Loita Community Lawyers justifying gazetting the forest
Sept. 1 1993	Letter By the Olmaa Development and Welfare Association to heed the request by the Loita people to manage their forest
Sept. 8 1993	Article in the Daily Nation and the Kenya Times, based on KENGO statement to requiring the gazettement to be rescinded
Sept. 9 1993	A commentary of the Loita forest saga in the Kenya Times, .and article in the Kenya Times that highlights the instructions from the Loita elders to their lawyers
Sept. 10 1993	Article in the Standard and Nation Newspapers highlights the local importance of the forest to the Maasai of the area
Sept. 11 1993	Letters to the Editor Daily Nation) by the Middle Ground Group argues that the forest should be left under the stewardship of the local Maasai through a trust
Sept. 13 1993	Article in the Society Magazine by H. M. Lempaka, argues for better management of the Maasai Mara, and to discuss with the Loita Maasai on what the benefits would be
Sept. 16 1993	Article in the Kenya Times highlights the allocation of some Loita forest land in 1971 by Narok County Council, which was later sold on to foreigners
Sept. 17 1993	Letter from (Kenya Environment and Energy NGOs) KENGO to the Minister for Local Government arguing that Kenya is a signatory to the CBD (and in particular highlights articles 8j and 10c), which supports the rights of indigenous peoples
Sept. 20 1993	Issue and Facts Report by East Africa Wildlife Society that recommended that the Loita community be supported to own and manage their own forest
Sept. 21 1993	Article in the Kenya Times discusses some of the internal disagreements among the different groups in the Loita area
Sept. 26 1993	Article in the Kenya Times by the ILIDP highlights the role play by the Ilkerin Loita Integrated Development Project
Nov. 1993	Background paper, prepared for the EAWLS by the Middle Ground Group discusses the “pros and cons” of different arrangement for the management of the forest
June 1994	Statement by the ILIDP issued at second session of the Intergovernmental Meeting on the CBD

June 1994	Flyer/Newsletter issued by Loita/Purko Naimina Enkiyio Conservation Trust Company, second session of the Intergovernmental Meeting on the CBD
June 15 1994	Letter by Loita elders to the President of Kenya, highlighting their problems
June 29 1994	Article in Eco 5, June 29, 1994 argues that the Loita Case highlights what Article 8j and 10c is trying to achieve
1995	The Loita Ethnobotany Project as a community based research project under UNESCO
1998	The Loita Integrated Conservation and Management Project, Preparatory Phase to initiate a participatory management planning process for the forest

Adopted from: (IUCN 2002, 7).

2

THE TASBA PRI KUAKUAIL II COMMUNITY'S RELATIONSHIP WITH THE FOREST

By
Centro para la Autonomía y Desarollo de los Pueblos Indígenas (CADPI)*

***Research Team:** Dennis Mairena Aráuz , Edda Moreno B. and Waldo Muller L.

INTRODUCTION

The Center for Indigenous Peoples' Autonomy and Development (CADPI) of Nicaragua and Tebtebba (Indigenous Peoples' International Center for Policy Research and Education) – in the framework of the Joint Global Program "Ensuring the Effective Participation of Indigenous Peoples in Global and National REDD+ processes," —have undertaken a case study in the Miskitu community Kuakuail II, within the Tasba Pri indigenous territory, located in the North Atlantic Autonomous Region of Nicaragua. The study was conducted from October 2009 to May 2010.

This investigation was made with a rights-based approach, taking into account the UN Declaration on the Rights of Indigenous Peoples (UNDRIP). It also has an ecosystem and gender approach to facilitate the creation of a general framework that could serve as the REDD+ methodology in Kuakuail II.

This in depth case study aims to identify traditional knowledge and practices of the Miskitu people of Kuakuail[1] II about the forests, and to study, illustrate, and strengthen processes, mechanisms, and strategies for protecting and revitalizing the forests, especially to help mitigate climate change impacts.

Photo 1. Kuakuail II forest surrounding the community. D. Mairena. May 2006.

The objectives of this Case Study are:

1. To thoroughly study some distinctive practices of the indigenous Miskitu people within the particular Kuakuail II ecosystem that help reduce emissions from deforestation and forest degradation, help sustainable forest management and conservation, and improve carbon retention (REDD+). This is a way to illustrate their holistic and multifunctional vision of forest use (cultural, spiritual, biodiversity, food, medicine, etc.) and their relation to people in Kuakuail II;
2. To analyze in detail the Kuakuail II Miskitu people's exercise of traditional systems for governing forests and to demonstrate their viability and vitality;
3. To identify threats and obstacles that limit or impede the practice of traditional forest management and the transfer of those practices and knowledge to younger generations.

To attain the goal of the case study, a systematic process for preparing and applying methodological tools was developed. This implied:

- Exploratory visit to the community and region as part of a participatory observation process;
- Interviews with both men and women community leaders;
- Consideration of information arising from the CADPI Diploma Course held in Sahsa that relates to Kuakuail II;
- Collection of information from distinct public and private entities involved in offering services that aid agricultural, forestry, and fishing production in the RAAN;
- Meetings with groups of producers (focal groups) in the region in order to identify and analyze the demand for services in the productive chain of products defined in this study;
- Consultation of documentary information about Tasba Pri particularly in regard to the process of land demar-

cation and titling in this region where the Kuakuail community resides.

One must keep in mind the particular terminology and concepts used by indigenous peoples. In the case of Kuakuail II, they are not the same as those used by academics, state entities, or the general population. For that reason, we have tried to remain loyal to the forms of expression of people who participated in the investigation. Also to be noted is the importance of constructing a chronological flow chart to highlight important events in the community that indicate those moments of great importance regarding forest possession or use rights.

GENERAL PROFILE OF THE TASBA PRI INDIGENOUS TERRITORY AND THE KUAKUAIL II COMMUNITY

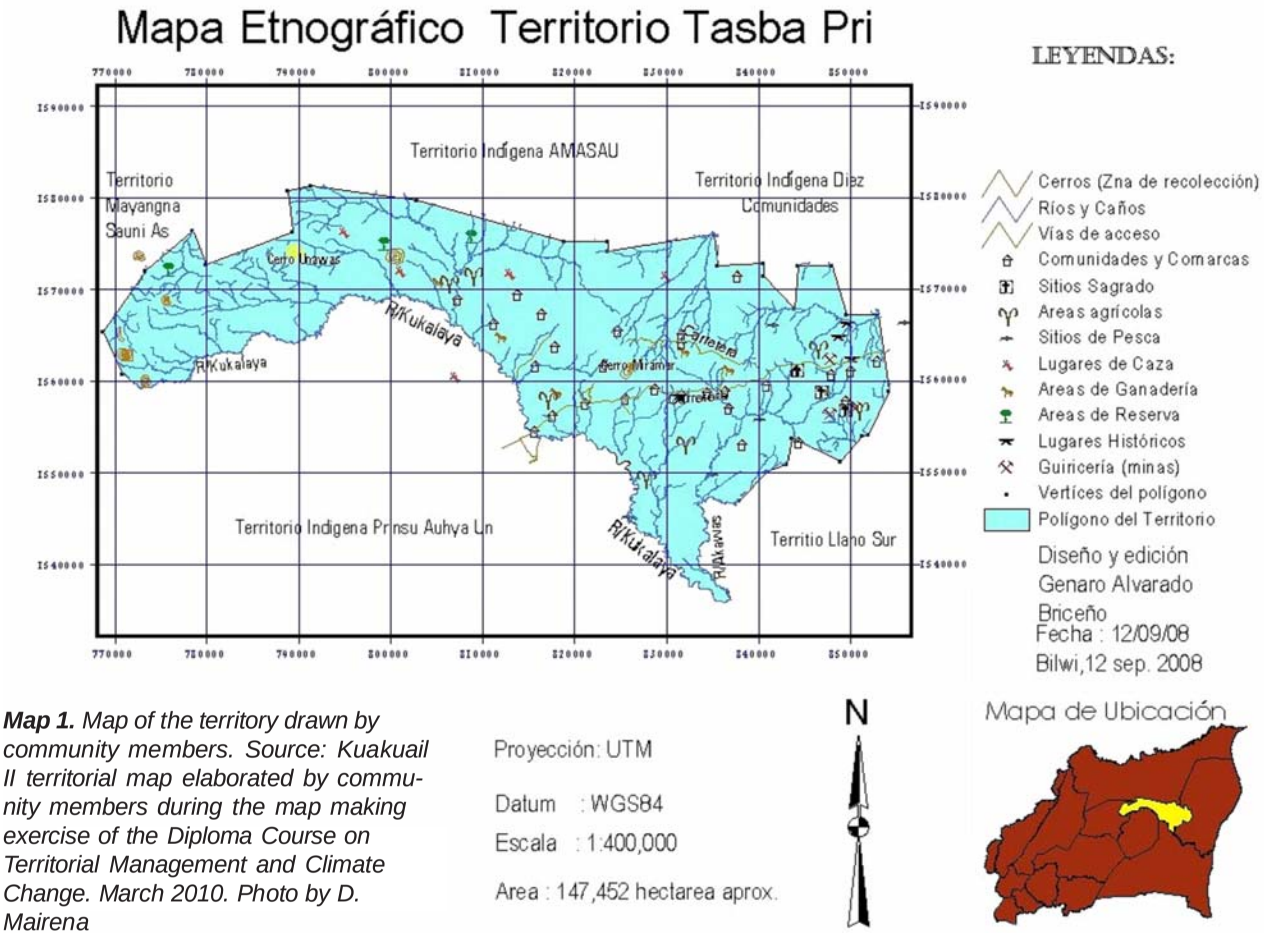
Kuakuail II belongs to a territorial block comprising 29 communities that make up the Tasba Pri indigenous territory. Most of those communities are located along the Puerto Cabezas, Rosita Highway. Tasba Pri belongs to the Puerto Cabezas municipality in the North Atlantic Autonomous Region (RAAN).

Tasba Pri has a humid tropical climate. Its soils are clayish, sandy, and swampy. Basic grains, tubers, and citric fruits are cultivated there. Cattle grazing is an important and growing activity.

The Kuakuail II communal territory is located in the Tasba Pri territory. It is registered under Title of the Instituto Nicaragüense de Reforma Agraria (INRA-Nicaraguan Agrarian Reform Institute), according to Decree 782 of July 19, 1981, a reform of the Agrarian Reform Law No. 14 of January 11, by Decree 38-91 published in the Diario Oficial *La Gaceta* No. 181.

According to this registry, the territorial area of Kuakuail II is 1,956 hectares, taking up 1.3 per cent of Tasba Pri's area.

The Kuakuail II territory borders on its north with the Sumubila community, on its south with the Akawas River and the Yatama group, on its east with the Naranjal community, and on its east with the *Uriel Vanega y Altamira* Collective.



Map 1. *Map of the territory drawn by community members. Source: Kuakuail II territorial map elaborated by community members during the map making exercise of the Diploma Course on Territorial Management and Climate Change. March 2010. Photo by D. Mairena*

Photo 2. A typical dwelling in Kuakuail II. D. Mairena. May 2010.

Population: At this time, Kuakuail II has 26 families of Miskitu people who have dwellings raised on stilts, with palm (*papta watla*) or zinc roofs, wood or bamboo walls and floors.

Communication routes: Kuakuail II can be reached in the dry season by vehicle on a trail that is in bad condition. In the rainy season, vehicle access is impeded by mud, and access is only by horse or on foot.

Basic Services: The community does not have piped water or a health post, and the school functions in a dwelling with a dirt floor and wooden walls in bad condition. Nor does the community have electricity.

During their Diploma Course on the Impact of Climate Change on Territorial Management that took place in Sahsa, the Kuakuail II participants elaborated the following chart that reflects the key felt problems of the community.

Problems in the territory

Social area:

Road access is in very bad condition especially in the rainy season; this situation reduces management and problem solving capacity.

Economic area:

There is a scant financial resource for families; therefore, productive capacity is reduced.

Political area:

Municipal and regional political authorities lack the will to respond to problems.

Environmental area:

Agricultural frontier and the practice of slash-and-burn land clearing are in advance. The presence of 77 families of colonizers who have settled near the communal forest reserve pose various problems and the threat to forest and soil, water contamination, and increased incidence of disease is looming.

Kuakuail II has elaborated its Forestry Action Plan (PAF) to guide utilization of its forest. It was approved by the National Forestry Institute (INAFOR) under its administrative Resolution 75-2007. The plan was made to take advantage of wood from 300 hectares of trees felled by Hurricane Felix in September 2007. It should be noted that, prior to Hurricane Felix, Kuakuail II had the largest forest reserve in the Tasba Pri territory.

KUAKUAIL II: HISTORY OF THE COMMUNITY

Prior to Kuakuail II being populated, its inhabitants lived in the community of Kuakuail Kuakuail, Wawa River or Plain. Both territories are part of the Moskitia. It was mainly characterized by pristine virgin zones, covered by forests of broad-leaf tree species and an abundance of animals.

With the arrival of mining, lumber, and banana companies, some foreigners entered the zone. Among them was a family of

three brothers with the surname Webster thought to be of German origin.

This family managed to influence the local Wihta (indigenous Judge) of the Wawa Bar community—a Miskitu man with the surname Piners—and obtained the Wihta's permission for them to live there. They later registered the site in their own name.

It is said that the permit was secured by exchanging the site for cows. In this way, the Webster brothers managed to be assigned 600 hectares. Meanwhile, the inhabitants of the Kuakuail Llano (Plain) began to encounter problems in being able to produce because the fertile lands had been conceded to the Webster brothers. Hence, they were obliged to plant on the banks of the Wawa River and constantly suffered crop losses due to massive flooding of the river. Confronted by this problem, six pioneer men—Henry Boork, leader of the group, and Norman Martínez, currently members of the Elders' Council; Emiliano Romero; Ezequiel Bent (deceased); Rafael Kristy (deceased); and Basilio Pérez—decided to set out to find better lands elsewhere. From Kuakuail Llano they went to the land which today is Kuakuail II.

To get there they had to go past Kilometer 43. That was the route used by Sumu/Mayagna indigenous people to transport tuno[2] to Puerto Cabezas. At that time the Sumubila[3] River was very deep. Near there lived a family who showed the six men the land where they could cultivate. At that time the Sumubila community as such did not yet exist.

On January 6, 1974, the six aforementioned men decided to settle on the current location of the Kuakuail II community. They were accustomed to spend 15 days hunting in the bush and to return to Kuakuail Llano with their catch. After some time, another 20 men and two women joined the new Kuakuail. Both women took charge of preparing food for the men who cleared land and laid down their land border markers. They remained for one month.

Two groups of men were organized to make up two shifts; one group did agricultural work and worked for companies in the zone. That way they obtained money to buy food and tools

needed in the bush. The other group prepared the grounds in the new settlement. That's how they took turns in the work.

Men carted plantain and guinea plants and seeds from Kuakuail Llano; they brought them in vehicles to Kilometer 43 and then carried them on foot to the new Kuakuail. A year later, when there were crops to harvest, the men brought other family members to the community.

That's how this territory was populated and Kuakuail II was born. Time passed without anything of note happening until the triumph of the Sandinista Popular Revolution on July 19, 1979.

The first two years of the Sandinista Revolution left communal life in the zone largely untouched. However, with the beginning of the counterrevolution and armed conflict between the Sandinista Popular Army (EPS) and armed counterrevolutionary groups, the Kuakuail community began to suffer.

These were times of war. The EPS had a military post in Sumubila from which they carried out military operations in the territory that included a population census of communities, including Kuakuail II.

At one point, the EPS reported the absence of six youth from the community. Because of suspicions that they had been recruited by counterrevolutionaries, the army decided to move the population of the community to another location. On November 16, 1983 the government decided to transfer the 32 families who inhabited Kuakuail II to the zone of another indigenous community called Sangnilaya. That's how they came to abandon the area and become war-displaced people settled in Sangnilaya where other internally displaced people from Kuakuail Llano had also been moved.

During that time, no inhabitant of Kuakuail II dared to visit their original community because of an army prohibition and also because the presence of members of the counterrevolution constituted a grave risk of being captured or of being killed during combat between troops.

These internally-displaced people from Kuakuail II stayed for 18 months in Sangnilaya. But later, the army moved them to Kuakuail Llano where they stayed on for two years.

Still later, the community members decided to request the authorities of the Nicaraguan Agrarian Reform Institute (MIDINRA) to allow their return to their community of origin, and they got a positive response. On this occasion, Mr. Norman Martínez and Mr. Emiliano Romero received a land title document and authorization to return to Kuakuail II.

At that time, the government paid compensation for losses endured because of the two year long displacement. The Sumubila community, located north of the Kuakuail II territory, assumed that the compensation was really a payment for the purchase of the property and hence that the territory thereafter belonged to Sumubila. That explains how the limits of the territory passed through the center of the community. When they returned to Kuakuail II, the former residents of Kuakuail Kuakuail and of Sumubila talked and negotiated, and succeeded in having Sumubila recognize the collective property rights of Kuakuail II over the land they claimed.

When the inhabitants of Kuakuail II decided to return, they were 42 families, but finally, only 13 families did. Today, there are 26 families living in 23 houses. Upon their return to their place of origin, the inhabitants discovered that it had been destroyed by the inhabitants of Sumubila. From that point on, Kuakuail II returned to a rhythm of community life without any major events impacting on the community.

COMMUNAL ORGANIZATIONAL STRUCTURE

The Kuakuail community has the following organizational structure.[4] Through them, the community manages its territory and resources.

The Communal Assembly constitutes the maximum authority of indigenous and ethnic communities. In Kuakuail, it is made up of 22 families. They elect the authorities who lead the community for a period of two years, in conformity with Law 455, Article 4. The communal authorities are responsible for legal representation of their communities. The functions of the Communal Assembly are: a) Designate the Executive Council (Junta

Directiva) that shall lead the community; b) Ratify and approve other members of the Junta Directiva; c) Approve special working commissions; d) Approve or reject social and economic programs and projects that they consider would go against the survival of the customs and ancestral traditions of the communities; e) Safeguard ancestral customs and traditions; f) Approve the admission of *Tringsar* (strangers) to the community; g) Approve or reject consultant recommendations regarding concessions that authorized entities make; h) Approve, reform, or reject regulations, forest management, community procedure, and training plans; and i) Designate the individuals who will participate in invitations to visit other communities.

The Territorial Junta Directiva is made up by: the Síndico and Vice Síndico; the Wihta/Judge and Vice Wihta, and the voluntary police. Other members are: a secretary, a treasurer, a prosecutor, and two spokespersons. It also counts on the participation of a Council of Elders, an education director, a health director, and a sports director. Women have their own organization that is active. Another important community actor is the Moravian Church pastor. The Junta also takes responsibility for organizing a fire brigade.

To assign posts in this organizational structure, the community holds general assemblies every two years. The nominees for Wihta and Síndico are elected in an open, free, and direct vote of raised hands in an assembly open to the participation of all families in the community. People who are not from the community do not have voting rights. But in the case of a woman or man who has married someone from the community, such person is accorded the right to vote after one year's residence in the community; and he or she can be elected as a communal authority after five years residence and with a record of acceptable behavior in the community.

The authorities can be ratified or re-elected once an evaluation is made in the Communal Assembly of their performance in their posts, and based on the results, the person can either be ratified or substituted for the post with another person,

In the past, the election was held in the presence of the Council of Elders of the community, but now it is held with the pres-

ence of a Regional Council member designated by the Executive (Junta Directive) of the Regional Autonomous Council of the North Atlantic Region (RAAN), in conformity with Law 445. This Councilor must attest to the transparency of the electoral process before the Regional Council. The elected authorities have eight days plus travel time to appear before the Regional Council Secretary to register the results to the Junta Directiva, and must appear with: a) the Minutes of the election meeting; b) a list of the participants with their signatures, and their identity document number, if they have one; c) the results of the election listing by name those elected to each position, and the length of their mandate as designated by the local assembly. Once these conditions are fulfilled the election can be certified.

The following chart shows schematically how community members themselves conceived their community's organizational structure during the diploma course sessions mentioned above.

At the second level, one will note that the Judges and the Communal Police share the same box. That is because they are considered to carry out their duties in close relationship. The same concept is operative in the case of the Legal Officer and the Elders' Council because they are deemed to carry out more of an advisory and social control function.

The following is a description of the positions of the members of the Junta Directiva.

The Síndico: This is the community authority designated to administer communal property and natural resources. Their mandate is for two years, and they are elected based on slates proposed to the Communal Assembly. The Síndico appoints the vice Síndico and forestry guards. One of the criteria used to elect forestry guards is that they be good hunters and have an excellent knowledge of ancestral territory. The Síndico is assisted by the Wihta to enforce established norms and, when these have been transgressed, to apply the sanction corresponding to the damage incurred or the *Saura daukan.*

The Council of Elders: This council is designated by the Communal Assembly based on their experience. In the Kuakuail II case, all men and women who arrived first and founded the colony form part of the Council of Elders; by the same dynamic,

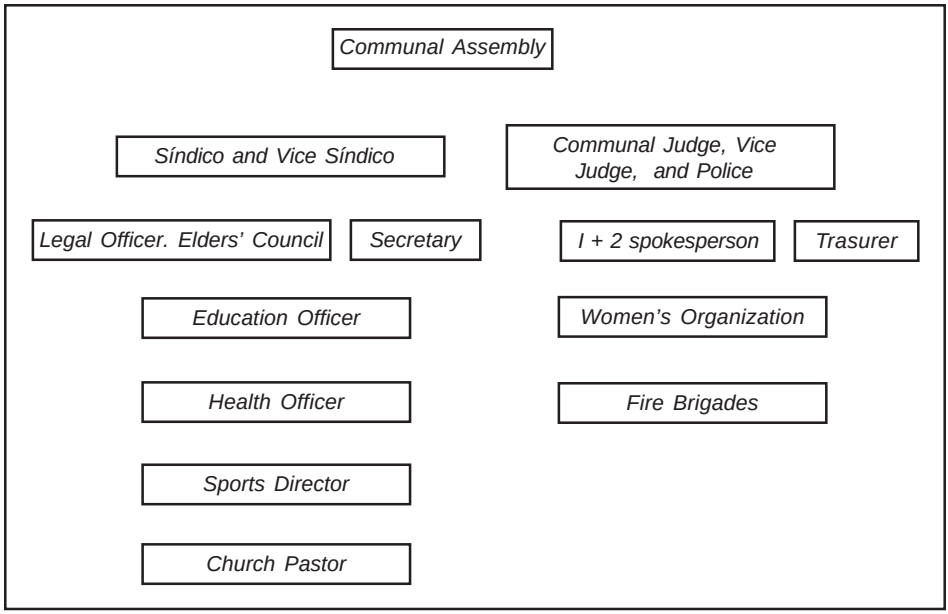


Chart 1. Administrative structure of the, Kuakuail II community of Tasba Pri.[5]

other men and women take on this role as they become grandfathers and grandmothers.

The Wihta/Communal Judge: This is the other post the Communal Assembly elects in Kuakuail II. This authority is mandated to administer justice and, in that capacity, to represent the community in community development negotiations and solicitudes. Within his/her jurisdiction, he/she is the highest authority over the administration of justice.

The Wihta, in conformity with Article 20 of the new Penal Code, is mandated to administer justice in cases of illegal actions, unless they are subject to special laws or if the corresponding penalty does not exceed five years imprisonment. Aside from that, the cases are heard and resolved within the communal jurisdiction.

In the case of murder, the accused are processed through the general justice system. Just as with problematic cases involving the *Tringsar* (strangers) and a member of the community, they are transferred to the Sahsa Police.

Persons who do not comply with community regulations for the first time are sanctioned with a fine and public work such as clearing school grounds, clearing roads, and participating in volunteer work brigades.

In the event of recidivism, the same norm is applied, but the penalty time is doubled, and this is done in a public manner. If bad conduct continues, the offender is expelled from the community

> There was an expulsion case in Kuakuail. It involved a family which only lived in conflict with other families. Three warnings were given and the established sanctions were imposed. As they continued with such behavior, the community met in plenary and expelled them. They were given 15 days to take down their house and leave the community. The Wihta took charge of making sure this sanction was met with compliance.
> E. Boork. Síndico, Kuakuail II.

When a community member cuts wood for sale without permission from the Síndico, the product is confiscated. To that end, the Communal Assembly meets and decides what to do with the confiscated wood.

In the case of tree cutting to build a dwelling, the beneficiaries request approval from the Síndico in detail, including the type of wood. This official will then authorize the activity in accord with the needs of the family. He can also authorize the cutting of a small amount of additional wood to be sold to obtain money for buying nails, hinges, door knockers, locks, and zinc for roofing.

The Secretary, the Treasurer, the Legal Officer, and the Spokesperson function as support for the Síndico, the Wihta, and the Council of Elders when so requested. They participate actively in the Junta Directiva's decision-making.

Other commissions carry out specific functions related to their area of responsibility, and in representing the community.

A listing of the community's norms and regulations is shown in Annex A. In addition, there are others that need to be added once they are validated by the Communal Assembly.

KUAKUAIL II COMMUNITY MEMBERS' OUTLOOK ON THE FORESTS AND RELATED PRACTICES

In the Miskitu language there are three words related to the concept of forest. They are used in function of the particular characteristics of the forests and their use. This shows a broad capacity to differentiate the dynamics that take place in nature. The terms are: *unta*, *unta tara* and *dus ailal*.

In Kuakuail II community and among the rest of the communities of Miskitu language territories, people, when they express themselves in Spanish, use the word *monte* (bush) to refer to the forest (*unta*, in Miskitu) or *montaña* (mountain, *unta tara*[6]). The difference between *unta* and *unta tara* is mainly that the latter refers to the presence of large, tall trees that are many years old. Another difference is related to the presence of wild life. In both cases, wild animals are present, but in the *unta* it is more difficult to hunt because the presence of humans drives the animals away; in the second case, more animals are present, but they are more removed from hamlets. In the *unta,* there are medicinal shrubs that are not found in the *unta tara* because shade from the tall trees does not allow small plants that need a lot of sun to grow.

This kind of classification affects forest administration. From the perspective of productive work, the *unta tara* is used only as a reserve—it is conserved. No slash-and-burning is done there. Lumber is not extracted. However, sporadic hunting takes place. There is no farming. In the *unta sirpi* (small tree forest) there are cultivated areas. There they plant and cut wood, but they do not make charcoal from wood.

There is an area called *Dus ailal* in the *unta tara* that refers to a very closed forest, rich in precious wood species. It has the same characteristics as the *unta tara,* but is a reserve area that is hardly accessible. This could be labeled a nucleus zone if we want to use the terminology of protected areas.

Utilization Characteristics of the Three Classificatory Forest Zones

Unta: This is the area used to cultivate basic grains and for the fields of the families living in the community. An area is designated for planting, and there are others for pasturing animals. Everybody knows where to work. There is also an area that no one is cultivating that is assigned to the youth so they can work as the new generation of the community. The community has designated only 350 hectares for cultivation. Everyone works in that area, and they all respect neighbors' plots.

Some plots have not been utilized for 20 years. Because these plots have not been improved, young people can use them for their own activities. The cultivable areas where no one can take over to work are those where there are improvements—this means areas planted with crops like palm, coco, orange, lemon, and other fruit trees that are the property of one family or another.

Unta tara: This is another area designated to be worked. From there, wood is extracted and later it is reforested. Community members hunt in this area, and it is not used for planting, only for hunting, fishing, and extracting timber for self-constructed houses. Wood is extracted for the market only when there is an urgent necessity in the community or for some family. It is also used to make *unuh* (pylons), *klasit* (latrines), *smalkaia watla* (schools), *prias watla* (churches), and *Kapin* (coffins).

Extraction of wood for sale must not surpass 10 per cent of the total amount of wood the community uses to survive.

All wood extraction for sale is undertaken under the control of the community Síndico with technical help from INAFOR.

Dus Ailal is the community's biodiversity reserve and has not been impacted by human beings. All the natural riches are found there—animals, medicinal plants, and precious woods. The whole community protects this zone. It is an area of restricted access because it has been taken cared of for a long time, and no one is permitted to damage it.

The Lagoon as a Reserve Capital Resource

Laguna Busukra is a small lagoon inhabited by many *Kuahipal/ Tuhra*, it is full of *turah* (*cuajipal*, a very small lizard). The lagoon is about 50 meters wide and 500 meters long. Many aquatic species live there, including the *ih* (turtle lizard), fish species like *Mas Mas*, *Klanki*, *bachi*, and turtle. People do not fish there because the community has designated it as a reserve.

Land and Forest Property Forms

The forms of land and forest appropriation in Kuakuail II can be those traditional to the area, but in a broader perspective it can also be said that they comply with the precepts of Law 28 of the Autonomy Statute of the Nicaraguan Caribbean Coast, and also Law 455 on the communal property regime.

From the general precepts of the National Constitution to the particularities of Law 445, the legal framework makes clear that the communal territories of the Nicaraguan Caribbean have an untouchable *(inembargable*), inalienable, and permanent (*imprescriptible*) character.[7]

Hence, property forms and their assignation correspond to the family which takes on a portion of land necessary within the area designated for agriculture and livestock. Joint responsibility, honor, and commitments are the complementary factors present in the affirmation that the "*unta is the area designated for agriculture and livestock, and everyone must work there."* That is an unwritten norm, but one assumed by each member of the community. "*Each member chooses a site that suits them, and locates there in the unta forever"* (Boork 2010*).*

That's why N. Martínez and E. Boork (2010) say:

> *here no one assigns plots for the families. Each takes a plot of land necessary for their work each year, at the most two hectares, or at least one and a half hectares. Everyone must always respect the crop rotation norms practiced ancestrally. The crops are destined for family consumption and also a percentage for sale to cover the basic*

necessities and sumptuary consumption of family members. This is an individual activity and produce appropriation is individual.

Both interviewees went on to say:

if the family is new and both spouses are from the community, the new family decides how to arrange where they want to work. The young man together with his father or uncles decides where his plot is to be located and its boundaries. The couple decides whether to work on their parents' plots or to take over a new area. Normally they locate on a new plot (insla) near their fathers' or uncles.'

In this system, land plots are not inherited. The sons and daughters simply keep on working them. No one else in the community attempts to take over this space as long as the sons and daughters keep on working them in an ongoing manner. Even if they have gone outside the community but the plot has improvements, no one will utilize this land. They can return at any time and again work their plot. The Síndico or any elder of the community can help them find their father's or mother's plot if they do not know its location. Relatives of the deceased are always welcomed in order to facilitate generation-to-generation transfer which is perceived as the continuity of work on the plot by sons, daughters and grandchildren. And so plots go with generational renewal. If any son or daughter wants to have his/her own plot apart from that of their parents, they only have to inform the Síndico about what space they want to work.

Property inheritance occurs in a tacit manner. It is regulated by convivial norms and norms for common use. Whoever needs a plot cultivates it. The rule is that no one can sell or donate any space on the communal land area. There are no fixed time limits.

Single mothers who have a mother and father in the community have rights over their plots but almost never make use of this right because they normally work on the plot of their parents. Women who marry a man from outside the community are assigned a plot. In that way their husbands have a place to work without disrupting the tranquility of their elders. In case of separation/divorce of the couple, the woman retains the patrimony and any improvements carried out on the plot. The man, in this case, cannot take anything away from the community

because he leaves as he entered the community with nothing.

A real problem exists not only in Kuakuail II but throughout the RAAN—the threat of illegitimate and illegal land sales.

The problem of land sales is serious because Tasba Pri is located along the so-called agricultural frontier which demarks the strong and constant eastward advance of emigrational populations from the Pacific, Central, and Northern Departments of Nicaragua. This emigration has had a negative impact through the illegitimate and illegal sale of lands by indigenous community members to Mestizo settlers. This misfortune happens because indigenous Miskitus try to make easy money from the settlers. Meanwhile, unaware of the legal circumstances regarding communal lands and territories, the swindled settlers say *comprar tierras* (buy land).

In many cases, there is a mutual understanding that what is bought and acquired is the right to usufruct and not ownership of the land. The problem gets worse when Mestizo settlers resell the acquired rights because the new contract is made between Mestizos in the belief that such land sales take place as they do in the rest of the country.

Photo 3. Kuakuail II Community. D. Mairena. May 2010.

During the Diploma Course that CAPDI offered for eight Tasba Pri communities, we were able to establish that Mestizo settlers believe in the land purchase-sale negotiation, and believe themselves to be the legal owners of these lands. It also became clear that the indigenous territorial communities do not follow, to the letter, territorial norms and regulations, nor do they make use of the power conferred on them by Law 445 to regulate such matters as deforestation is underway on their lands.

The Church and Cultural and Spiritual Values and Practices

The strong influence of churches among indigenous peoples is very well known, to the point where, in many cases, the cultural values, beliefs, myths, legends, and even the history of indigenous peoples have been undermined. The Miskitu population of the Nicaraguan Caribbean Coast is no exception to such influences.

When conversing with some Miskitu community members of Kislaya and of Waspam, we could appreciate that belief in the *liwa mairin* (mermaid), the *unta dukia* and elves (protectors of the forests[8]) is still current.

According to Professor Avelino Cox,[9] ancestrally, supernatural beings were recognized by Miskitus as protectors of the waters (*Liwa mairin*—mermaids) and of the forests *(unta dukia* and elves), but the churches have been transforming these values. Now most Miskitus on the Wangki River (Río Coco) think of them as malignant spirits or do not believe in them.

It was striking that, at one point, Kuakuail II community members said in interviews that because of contact with other churches and cultures, versions of the *Liwa mairin* and the *Unta dukia* no longer have much value. They recognized that it is the influence of the Moravian Church that had led to the loss of those values. They also said that they do not have any spiritual or sacred relationship with ancestors or supernatural beings in the *monte* (bush, forest).

Photo 4. Moravian Church in Kuakuail II. D. Mairena. May 2010.

However, in informal conversations, the same persons made reference to the *ulak,* to the *unta dukia* and to the *swinti/swinta* (elves). They even mentioned that the latter would make you lose *prahaku* (knowledge) if you entered the bush alone. They also said that the elves were *banditos* (mischievous jokers) who would bother and shock people. Regarding supernatural beings of the waters, in addition to the *Liwa mairin,* they also referred to the *Liwa assure* which mostly appeared in swamp zones. They said that their illness could only be cured with traditional medicine.

This contradiction makes it evident that although the influence of religious orientation from churches is enormous, some beliefs and fears still have roots in the people.

Cultural and Spiritual Values of the Community

Below, two narratives are related about experience with forest beings that reveal current cultural and spiritual values of the Miskitu people.

A Yala (Barbados Cedar tree) has grown in Walpole to about nine *brazada* (some 7 meters) tall. Its roots straddled a rock and reached into the soil. The space beneath the tree looks as if someone had cleaned it. When it rains, one can find shelter there. Lower down there are some small streams and many orchids; this flower is known as a lucky flower and there are other flowers that we don't have in our yard at home. I've gone there to hunt several times because many animals gather there; but I only hunt for necessity and maybe that's why no spirits have chased me.

When the hurricane passed over, this *Yalam* tree was not damaged. It's still there. Its immediate surroundings were also untouched. And so Kuakuail II still has its forest. Near Walpole, there is another round rock whose top seems to be sawed off in a circular way. And on top of it sits another round rock. If you climb on to it and look down you see a great abyss. The space around the rock is cleared; it seems that moss has never grown there like someone is always clearing it.

When the last tremor took place, people thought that the rock had fallen down, but the rock did not move at all. We climbed up to see from above. It is surrounded by precious wood trees, but no one logs them. The elders believe that if they are cut down, the community could be harmed. When the hurricane passed through, not even the flowers were affected. Their colors are yellow, white, rose, and purple. This place is about an hour's journey from the community.

One time when we set out to mark off our land limits, we took along a compass to know where we had reached. But it didn't work. Another time the gringos who wanted to find gold arrived but they too could not use their compass. Magnets would not work in that place. They said that it seems like some material was affecting it.

Forest-Related Rituals

The community has not developed any kind of ritual to protect the forest. However, they do tell stories to boys and girls about events they have experienced as a way to teach them the norms to be followed in their daily lives.

When *tuktan kuarika* (adolescents) are receiving a lesson, they place a woody vine on them known as a *kakamuc wakia/ usnun.* This vine has extensions that look like iguana hands. This vine is placed around the the neck and waist of children so that they will not see evil spirits. That is also done with visiting children and adults.

When one is going to navigate an unknown river for the first time, he/she has to wash his/her face and drink some water. This person can also bathe there. This is a sign of friendship with spirits who live in the water.

When someone cuts flowers or finds a clay vase on the way to *dus ailal,* they are obliged to leave an offering, something of value including even a shirt button. It is believed that not leaving an offering in return for what one takes home will make it disappear.

Among their prohibitions meant for protecting the forest, the most common is: Don't damage or touch anything forest spirits are protecting because this is their habitat. The forest is clean there are many animals; there are flowers of different colors and many green herbs. Often one hears whistles, cries, and clamors; these sound like children crying. When we are in a place like that, the healer runs through the community admonishing that no one should go there.

One time I was going to hunt at night. We were three men and we were lying down. One of the youths picked up the shot gun and was handling it. As we were looking for wari (pigs, wild pigs) we only had one dog that knows how to deal with them. The dog took off and then fled back to us crying. He lay down near us.

I got up to try to see the spot he had fled from. I returned and said to the youngster that there was nothing there so he shouted towards the spot and someone answered with an enormous scream that made everything move. Then the boy shot into the void and again someone shouted from a closer location. I decided to scold the boy to stop bothering because we could get into problems. We woke up the next day and caught six wild pigs and returned to Kuakuail II (Boork 2010).

Ritual for Entering the *Dus Ailal*

The respondents related that when they enter a sacred place or the area they call *dus ailal*, it is customary for them to wear a vine called *Usnun (dasin wahya baku, kiwa kum ba iwisa)*. It is a liana that looks like the leaf of a *malanga* vine that hangs from trees. This vine is also used to make *kwua* (food baskets). When worn, the vine is used to protect oneself from evil forest spirits. Once cut, it is wrapped twice around the *nana* (neck) and then fixed around to the waist like a belt as a form of protection from bush spirits.

In case a person is going to move from *the unta tara* to the *dus ailal*, he/she must take caution to protect himself/herself from/*piuta* (snakes). Tobacco and garlic are used for that. The tobacco leaf is moistened and brushed up and down the pant legs. The garlic is carried in a bag.

Normally, no one enters the *unta ailal*. Only the forest guards and the Síndico go there when they have to make their rounds to verify that no one else has entered the area.

The forest guard is a trustworthy person chosen by the Síndico. He supervises and monitors the forest area. In practice, he is chosen from among the hunters because they live walking in the forests and are informed of everything that happens in the *dus ailal*.

The Reserve is to be Protected, Is it Not?

Various myths exist regarding conservation of the *dus ailal*. It is said that a person called *Prahaku* renders unconscious someone who enters the forest making it impossible for one to get back home because of confusion. This makes the person hide in rock tunnels or among the roots of huge trees. Only after the healer has come and cured the individual can he/she return home.

They say that *Prahaku* is someone who, when walking, leaves behind footprints that appear backwards in relation to his direction of motion.

Other inhabitants believed to be in the *Dus Ailal* are the elves. They are supposed to be interceding for hunters, but sometimes they kill hunting dogs or make them disappear. To avoid this, the dog owner puts a red rag around the neck and one of the paws of the dog, or must put something distinctive on his ear lobe. Then the elf will not molest the dog. The belief is that the elf tries to hurt the dog to prevent it from hunting animals under its protection. It is believed that the animals protected by the elf (*Swimti* or *swinta/duhindu*) are: *duhindu ibihna/willa,* the *Tahira/cusuco* (toothless rabbit-like mammal), the *Sula* (deer), the *Buksa/sahino, wari* (wild pig), the *Kusu* (turkey), the *unta Klukumka* (wild ducks), the *wasakla/chachalacas* and others.

RECOGNIZED BIOLOGICAL DIVERSITY IN KUAKUAIL II TERRITORY

In Kuakuail II, an inventory of species and resources has never been done. The community members have only marked out the boundary limits of the territory. However, all adults know what exists in the forest where they go about daily. In the case of the *dus ailal*, the Síndico and forest guard are those who enter this zone each month to assure that everything is under control.

One mechanism used to establish if the forest is in better condition than before is to make comparisons. A simple description to ascertain the state of changes is in relation to the number of inhabitants. The community assumes that having more people creates more demand for wood and resources; therefore, the depreciation of resources is greater. Actually all the families of Kuakuail II together have managed to accumulate 150 head of cows which means that 130 hectares are dedicated to this activity to the detriment of the forest.

They have put down paths around the whole area where work is done and about 200 hectares is actually in use for agricultural production and livestock. Hurricane Felix affected more or less 700 hectares in the *dus ailal*. Meanwhile, in the *unta tara* everything was razed. Three years since, the forests are in the

process of recuperation. These forests are regenerating on their own because care has been taken so that no one sets fires in the bush.

Observation is another method used by community members to measure changes that occur in their community surroundings. The observation of *walpa* (rocks), *dus nani* (trees), and *daiwan nani* (animals) enables the Síndico, the forest guards, and the elders to take stock of the state of the environment. As Mr. Martinez put it:

> *The level of river water indicates whether summer or the rainy season (winter) has arrived. Normally when the water level is highest, it covers all the rocks, but when it turns into the dry summer season, those rocks are visible and women use them for washing clothes. In this season, the water turns clear and transparent; but in winter, the water turns muddy and swampy.*

Biological diversity in the Kuakuail territory is the big thematic preoccupation for community members because of existing threats in the current context.

The following list of broadleaf forest species is taken from the Forest Management Plan devised by the community following Hurricane Felix for taking advantage of timber it swept down.

Wood Type	Common Name	Scientific Name
Hard Wood	Come negro	*Dailum guianensis*
	Quebracho	*Guarea grandifolia*
	Nancitón	*Hyeronima alchormeiodes*
	Frijolillo	*Leucaena shannoni*
	Quita calzón	*Astronium gravedaus*
	Mora	*Vataire lundellii*
	Níspero	*Manilkara achras*
	Coyote	
	Granadillo	*Dalbergia tucurensis*
	Cortez	*Tabebuia chrisanta*
	Guapinol	*Hymenaea courbaril*
Semi-hard Wood	Santa María	*Callophilum brasiliense*
	Cedro macho	*Carapa guianensis*
	Guayabo negro	*Terminalia spp.*
	Leche maría	*Simphonia globulifera*

What Edgard Boork, Kuakuail II *Síndico*, says should be highlighted:

> *We do not have a forest inventory, but we know and know about what we have like the palm of our hand … if you come and ask me for a tree species, just walk around, and I will take you … I was born there and I know where the type of tree or plant you want to see is.*

There are other species in the area that either do not have scientific names or whose scientific names are unknown but these have been important for the community members. These are: *Tuno, Hule* (tása, rubber), *Nispero* (chichle, gum), *Puhlak* (guano) and *kakamuk wakia-tendon de iguana* (iguana tendon, a wicker vine for making baskets); there are others whose bark are used to make beds, houses, ceilings; there is a *bejuco* (wicker) used to tie constructions; it becomes very firm when it dries. In all cases, it is important for the community members to take into account the phase or state of the moon before they cut in order to assure that the material will preserve well afterwards.

Animal Species

The following list indicates the most well known forest animals in the territory but this list is not complete. In reality, there are many more species present in the bush. To each Spanish or English name, we have added the name in Miskitu.

Danto (*tilba*, American tapir); there are three classes of deer: *sula pihni* (white), *cacho peludo* (*sang sang*) and *venado pucu* (mountain goat – snapuka); *guardiola, guardatinaja (ibinah); cusuku (tahira); guatuza (kiaki); tíban* (rabbit); *wisti tin* (pizote*); (winku*) ant eater; y *winku tara; mapachín (suk suk); siwuaiku* (sloth); *waklin* (white face monkey); *gungun* (Congo monkey); *Urus or ruskika* (Spider monkey).

Tiger species that have been spotted are: limi bulni (leopard); striped tiger; limi siksa (panther); limi pauni (puma); limi kruhbu (cougar); lim wayata (gato de monte).

Other species are: chancho de monte (wari, wild pig); sahino (buksa); suki (flamingo); pavo (kusu, turkey); pava loca (kuamu); chachalaca (wasakla); gallina de monte (wankar); gallina de monte pequeño (suhar), oropendula (tulu), tucán (three kinds), rak, yamukla (urraca); plis, lapas (apawa, macaw); lora, (parrot, there are six types); chocollo (risku, three bird species); and many others.

Among the serpent and snake species are: *barba amarilla (piuta*…this word is used to denominate all types that slither; at least six poisonous species have been identified and other *maksiksa* (boas); *sulhkat, silviaru* (coral), *waula* (boa), *bull aikra (mata buey*, ox killer).

TERRITORIAL MANAGEMENT NORMS AND REGULATIONS

In order to understand certain ancestral norms that course through all indigenous peoples, one must know the underlying sentiment that moves community members to obey them in distinct economic, social, and cultural fields; how they give order and meaning to communal convivial relations which have enabled them to persist despite the adversities of cultural shock. What's important in any interaction process is to find the causes of strong collectively rooted sentiment that prevails in each community, and is transferred to the authorities to be followed in the exercise of their functions in a way that enables control and leadership for the system of community government.

Territorial management in Kuakuail II is ordered mostly through norms and regulations dictated by the Communal Assembly. Most of these norms are unwritten, but have force in a traditional way based on mutual understanding in the framework of a philosophy of life. Some of the norms that are cited below are not directly related to the forest but we have included them here to offer a more integral vision of the form of territorial government and the way of life.

Despite these existing regulations, the Mestizos of the neigh-

boring community of Sumubila ignore the norms. These norms are subject to validation in the community. Those discussed here are based on the input from the eight Tasba Pri communities represented in the Diploma Course on Territorial Management and Climatic Change referred to above (See Annex A).

Forest Resource use as a Traditional Practice

Kuakuail II inhabitants, like the majority of Miskitu indigenous communities, depend on the forest for the extraction of certain resources such as: wood for construction, remodeling, and repair of houses; logs for foundation of houses; firewood taken mainly from tree trunks or wood left over from other uses; and *nuhmista* (mango) to use with the pylon or to build the *wabul ka paika* to prop up banana branches, to make *kuala tus kaika* (washboards), *duri* (canoes) and *kuahi* (oars).

Traditional procedures also exist for cutting wood and lumber. This is done in tandem with the lunar cycle. Generational teachings show that cutting should not happen at the time of the new moon because, according to the teachings, all the insects

Most common and most utilized forest species in the Kuakuail II community, in order of priority

No	Most common forest species	Most valuable species	Most used species	Commonly used mostly for:
1	Yulu/caoba/ mahogany	X		For sale or for making coffins and furniture/ nuh/unuh/pilón
2	Yale/ Barbados Cedar	X		For sale, or for coffins and furniture
3	Granadillo/ Rusut	X		For sale, furniture. Not used for coffins because it is too heavy

4	Coyote	X		For sale to coffin makers
5	Cedro macho/sabá/ swa	X	X	House construction, boards, floors, and internal wall dividers
6	Guapinol/ lawah/lakah	X	X	House construction, but just for frames and beams
7	Krasa/ santamaría	X	X	Construction of protective covering, floors, and scaffolding
8	Laurel/sumh	X	X	Coffins, furniture, interior walls, and false ceilings
9	Nispero/iban	X	X	Posts for houses and for fencing pastures, axe handles, and also firewood
10	Comenegro/ slimh/tamarindo	X	X	Only used for posts, any structure requiring posts
11	Guayabonegro/ igincia	X	X	House construction and firewood
12	Ojoche Blanco		X	For making el nuh/unuh/rice basins, and firewood
13	Mora/tilba arkbaika	X	X	Houses and buildings
14	Kerosen/sahkal	X	X	Firewood
15	Nancitón/Kiaki dusa	X,	X	Wood boards, when dry are good for firewood.
16	Puslak/guano, Puslang/ capulin/Sihnak/ manga larga blanco		X	For making the travois to carry products out of the forest; also for making rope (*rup)* to tie up calves and pigs.

Source: Focal group in the Kuakuail II community in 2010. Many more species are found, but these are the most commonly used trees.

Traditional medicinal species. Some of the traditional medicines mostly used by community members to protect their health

Medicinal species	Utilization
Hombre grande/ Kina /Kunah/tahplira	For fevers (malaria), blood purification, pimples and skin blemishes, for chills and flu, they are moistened and made into flakes and mixed in a liter of water for 24 hours. The water is mixed with moonshine and you take three gulps a day.
Biltha/surhwa/zorrillo	Used to drive off evil forest spirits when they have possessed a person. This is mixed with a chili de gallina leaf; it is burned and smoked. Also used as a *kangbaia* (against) any kind of spell; it is burned and smoked (*baho*/but also *klami tahbisa*.
Planta de Chile de gallina/Kalila kuamia	Mixed with skunk urine, it is used to break spells (*kangbaia*).
Culantro/chicoria	A broad leaf, creeping plant used for food. It is mixed with skunk piss, chile leaves, and *asdura pata* to make a cure for group hysteria (*grisi siknis*), *tusky auhbaia*; it is ground and mixed with Florida water. Also used for asthma, seven boiled leaves.
Piuta dusa/palo de culebra	Used to cure snake bites. Bark is taken from all sides of the tree (facing, opposite, north and south); the bark is boiled in a small amount of water for five minutes. The tea is then imbibed.
Ahwath playa/yahal playa: Chaparro	The vine of the *chaparro* is used to cure snake bites, but after scraping off the roots. The shavings are placed in the bite wound and held there to take out the venom (snake teeth). This is repeated for three days during which time the person cannot be seen by pregnant or menstruating women. Also they cannot eat food prepared by women in those conditions.

Kuku Kura ma (coco tierno)	Used to treat diarrhea. Six small coconuts are cut crosswise, cooked, and the juice is imbibed. After one drink, the person is cured.
Kaisni pata	A soft vine. The bark of the guayaba and the culantro playa is a medicine used for gastritis and stomach aches. It is boiled and taken for eight days,
Sukul Wahya/hoja de varilla negra	This leaf is cut and ground, then applied to the wound for a day. Bleeding stops in less than an hour.
Kauput wakia	A broadleaf plant. It grows in razed or burnt out areas. The roots are scraped and shavings are placed in aching tooth cavities. The pain goes away within minutes.
Palo de Cebo, Bahnak maka laya	The sap is extracted from a hole drilled in the trunk. A rag is wetted with the sap and placed on a rotten molar cavity. It will then break off and fall out.
Sahkal talla/cáscara de Kerosin)	The bark of the Kerosén tree is scraped and the shavings are moistened with a bit of water. This is placed on skin bruises caused by falling and scraping.
Miskitu batana /Uhum dusa/ variety of African Palm	Used to straighten hair and make it grow, and to clean pimples for children and adults. It is a variety of African Palm.
Saba ma/semilla de Cedro macho	The cedar seed is pealed and fried in butter. The product is good for treating pimples.
Jobo/pahra dusa (Anacardiáceas family)	To treat chicken pox, the *jocote lobo* leaf is good to use when bathing. The bark is also boiled and used to get rid of mouth infection of recently born children.
Leche de banano blanco (Milk of the white banana)	Used for snake bites, to cure wounds, and for birth control. In the latter case, cut a piece of stem at ground level. It is boiled and imbibed. It must be taken after giving birth at the time of the first menstruation, or when one is still bleeding after giving birth. Each treatment lasts for a year.

Limi Mihta/mano de León	Used for diarrhea. It is liquefied (*klamisa*) in a container with one liter of water. It is ready after it becomes viscous. Drinking a liter is adequate for a cure.
Cáscara de Cortez/Auka dusa taya	Is effective to counter sexual impotence. it is boiled and taken for 15 days.
Aceite de Mono Congo y aceite de Cusuco	The pulp is fried and the grease is extracted. This is imbibed, and the breast of a child or adult with a cold or asthma is massaged. This treatment is taken for three days in succession.
Aceite de gallina	Used for colds and asthma. The same extraction procedure as the above is used.
El titil de la gallina/prukaika, el plástico que cubre el titil	It is dried with orange tree bark and boiled together, and then imbibed. It's effective for stomach aches and to strengthen weak stomachs when everything consumed does damage to it.
Saini Ruth/escalera de mono/Urus ulaika/mokey ladar, y cáscara de Guapino/ laka taya, lawah taya, cáscara de indio Desnudo/limpsi	Effective for anemia. It is all cooked together, Sugar and wine are added and it is taken as syrup.
Lih mahbra, el huevo de la tortuga de mar (turtle eggs)	They are dried and sliced, and placed into half a bottle of wine. Leave for three days and drink it four times a day to cure extreme sexual impotence. Until the treatment is concluded, the man should not have sexual relations with his wife.
Yauhrus wakia/trisba daukaika ba	The Yauhruz root is cut into slices, boiled, and imbibed for two weeks.
Mukula/Cuculmeca vine fruit	Good for purges and for snake bites. You take three or four pieces of the fruit for purges, but for snake bites you boil leaves and drink the tea.

Kuah Maka/Leche de higuerón o chilamate hembra	The chilamate leaves are broad and long. It is low-stemmed. The sap is extracted and strained, and is imbibed with coco or cow milk along with sugar to get rid of intestinal parasites.
Buksa Mahbra/ huevos de Sahino	Good for treating warts, You put a drop on the wart and it burns and falls off by itself.
Pabula tangni/Flor de Muerto/San Diego	Used to treat high blood pressure and convulsions, and fevers. Used a body rub, or taken internally in the case of high blood pressure.

Source: Brooks, Martinez and V. Downs, and the focal group (2010).

are laying their eggs or are being born. Just like humans, trees have parasites and worms. If you cut trees during a new moon and construct a house, a boat, some stilts, a table, or bed, whatever you make, will be eaten away by worms therefore, these will have a short life span. You will have to replace it within five to ten years depending on the wood species used.

Forest Use and the Food Security

In Kuakuail, the forest still yields food produce; the forest gives everything needed by humans to live like meat, fish, honey, and fruit.

Honey: These include *Nasma tara* (jicote honey) and *Mariola* (bee honey). Jicote honey is found in trees suitable for wood, while bee honey is taken from hives found in bamboo and some softer trees such as *guano* and *guarumo (planh).*

Fruits: Fruits found in the forest include: *zapote (kuri); granadilla de monte (drap); matra (calala); naranjuela, kisu (coyolito); sila (coroso); brit brit (guaba); Pahra (jobo); guanacaste de oreja; tuburus/ Slimwama,* (this is used for laundry soap); *kara* (used for sewing thread); *guapinol; uhum* (to make drinks—Miskitu batana), *batata, (tawa), piñuelo (ahsi)* is eaten with salt and used to make beverages and chicha; *Sakipa/bakankan (jocote de mico); Wauh Slauhka (palmito),* it is cut and cooked with a little salt; it can also be eaten raw with honey*; Sut Sut / Sutsutia/* (chestnut); *Kahka Ma* is a palm with many thorns, also known as the watusa shoe, and is

eaten raw like the coconut; *ahtak ma (Swita*/palmito seed) is eaten like corn kernels.

Plant crops: In Kuakuail, they cultivate root and tuber plants (sweet potato, malanga, banana, plantain, *yuca* (mostly sold or used for food); basic grains (rice, beans. corn); and sugar cane. Vegetables, tomatoes, and peppers are also grown.

Meat: Animals that are hunted for daily food also live in the forests, helping to sustain food diversity. These animals include: *sula* (deer), *cola blanco, wipusiana or snapuka* also known as colored deer; *ibihna/Guardatinaja/Guilla; tahira/Cusuco; buksa/Sahino; wari/Jabalí* (wild pig)*; Mono/Urus; wisting/Pisote; susuk* (raccoon); *tilba/danto; kakamuk/iguana; kiaki/watusa*. Also birds are hunted for daily food; they include: *kuamu* (turkey); *klukum* (duck); *wasakla/Chachalaca; rahwa* (parrot); *wankar* (wild chicken); *suhar* (dove); and *Pusal* (quail).

From the water are caught: *Inska* (fish), *kuswa* (turtles), *Siakwa* (broken breast turtles), *Kwiwi* (little black turtles), *wasi* (shrimp), *libang* (crab), *klistu* (clambs) and *cuahipal* (turah), among others.

Women and Forests

Women's relationship with the forest is shaped by the fact that Kuakuail II community members believe that they have equal rights to access the forest as men do. During the study, it was noted that in this regard, women face no normative or regulatory restrictions imposed from within the community. They go to the forests and take fire wood and medicinal plants at any time they need these. They also face no gender restrictions in the norms established to obtain permits to extract lumber for their own use.

Kuakuail II women have a direct relationship with the forest in all aspects of life. They relate to it regarding the practice and conservation of traditional medicine, gathering fruit for consumption, gathering firewood; and making food. They are involved in all interactions with the forest. Women identify with the forest through their relationship with the land which is typified by the planting of basic grains, understood as an economic activity. However, Cox: (2010) says that this is also spiritual at

the same time…"because in our cosmovision, the world is populated by spiritual beings, and hence, the plots must be planted in a spiritual way."

V. Downs (2010) said this in an interview: "We are citizens of all that exists in the land, and as we move, we maintain equilibrium in community relations and especially equilibrium with Mother Nature."

Because of the multiple activities women carry out in the home on behalf of their families, they do not have enough time to make the same use of the forest as men do. Gender equity is lacking in that regard.

The above description shows that women have a very relevant role in the transmission of knowledge about the forest—its use and species of animals and vegetation present.

The Stranger in the Community — the Tringsar

All strangers or *tringsar* can come to the community to hunt for necessary food, but once they have succeeded in the hunt, they must leave. During their stay, the community helps them when needed, following the principles of reciprocity that govern indigenous communities. Among indigenous peoples, *latwan laka* (generosity) is a quality that stands out for visiting strangers. This attention is the beginning of a sustained friendly relation. Any stranger arriving in the community must be reported to the communal Wihta.

Mestizos living on the other side of the river are not members of the community. When they cross over into Kuakuail II territory, they are questioned as to the purpose of their visit. When their business is finished, they must go back to the other side of the river.

The communal authority does not have any control or regulatory capacity over Mestizos from the other side of the river, but they dialogue with them in meetings, warn them about areas that they must not enter, and tell them about what they can or cannot do. For example, they must not cut trees or hunt deer. They must not enter sacred grounds and forests; they must not

touch the crops of the *Insla* (farm); they must not set fires in these farms and in the *unta tara*. They must not throw explosives into the rivers nor shoot deer. Violators are taken to the Sahsa jail. The community does not penalize them because they are not members. Hence, help is sought from territorial authorities.

THREATS AND OBSTACLES THAT LIMIT OR IMPEDE THE TRADITIONAL FOREST MANAGEMENT PRACTICE & THE TRANSFER OF THESE PRACTICES & KNOWLEDGE TO NEW GENERATIONS

The State as the Regulator of Natural Resources

Use of forest resources is also impacted by government natural resource norms and regulations. Although it is true that the resources and territories belong to indigenous peoples, the state maintains control over their use. Let us look at the following case:

Permit Logic

As Costeños (people of the Caribbean Coast), we see that we have resources like red and white trees, but we cannot log them because of the complexity and cost involved in obtaining a logging license.

We have elaborated a forest use plan (known as a PAF) where we referred to making use of trees knocked down by Hurricane Felix, but the authorities take too much time to approve it; meanwhile, the wood deteriorates and become useless.

Take a look at the process:

The Natural Resources Secretariat (SERENA) of the Autonomous Regional Government makes a technical inspection and issues a technical report which costs 3,000

córdobas (US$150); then the municipality sends in a technician to do a technical review which costs another three thousand córdobas ($150); then an 'Opinion Forestal' is required next and this costs 10,000 córdobas ($500); what follows is the formulation of a forest use plan (PAF) carried out by a forestry technician, a regent who must be paid $2,000; INAFOR approves the plan and an exploitation tax equivalent to $1 per cubic meter of extracted wood must be paid; the Mayor's office issues confirmation of this, and then INAFOR grants a permit to sell the lumber.

My plan is to extract 4,000 cubic meters. I have had this plan for two years, and by now the wood has deteriorated because it is strewn on the ground. Moreover, the process is expensive; I don't have the cash to obtain new permits. Hence, one has to find illegal ways to get the wood out.

The big lumber operators take advantage of this situation and offer to get the wood out and to obtain the permits. They pay for everything.

The authorities should be more flexible and they must facilitate the grant of permits. Then we could sell the little (fallen) wood that is left to us (in the forest).

After this entire process, the Ministry of Finance and Public Credit returns to indigenous territories 25 per cent of taxes collected from the sale of wood taken from the territory. A similar percentage goes to the municipality, the regional government, and the central government. That arrangement is set forth in Law 455.

Conversation in Sahsa between D. Mairena, Edgard Boork, Síndico of Kuakuail II in the Tasba Pri territory, and Rose Cunningham, owner of the Bawisa Farm in Waspam Municipality, May 6, 2010.

Traditional Knowledge Transfer from One Generation to the Next

One ancestral form of knowledge transfer is accompaniment. For example, a boy at ten years of age accompanies his father to hunt, plant, fish, visit sacred sites, and he participates in the *arbis* (making an *o*ffering). Fatherless sons accompany an uncle or grandfather in the same way. The boys are taught about what

trees are good for firewood or for lumber. They also learn how to use fishing and agricultural implements and how to find good hunting and planting sites. Furthermore, they are taught to distinguish the sound of a barking dog from that of the *tahira* (armadillo) which always puts its head in a hole and shakes when barking. When squealing w*ari/buksa* (wild pigs) are moving about, the dogs bark and chase them into an impasse until their owner comes to kill the animals.

Moreover, boys are taught how to make *trisba* (bow and arrows) that are used to fish, and the harpoon to catch large fish like the *snuk* (bass) and *sahsin* (guapote grande). In the forest, they are taught how to hunt at night with flashlights and how to aim accurately in daytime so as not to waste shots.

The mothers, aunts and grandmothers, on the other hand, teach girls to take on women's work such as cooking, washing, ironing, making clothes, hemming pants and dresses, and cleaning the patio and yard. They also learn to use traditional medicines to cure illness, to weed planted areas, to plant *yucca*, sugarcane, banana and rice, to extract bark and carry a pack made from the bark of the *Bumdil* (guana tree), among others. These girls are also told with all the oral history of the community.

Knowledge of traditional medicine is taught in the family of the healer who transfers his knowledge at no cost. For people outside the family who want to learn about traditional medicine, however, a fee from $10 to $25 is charged for each medicinal plant depending on its form of application. The cost also covers teaching diagnostic and treatment criteria.

At this time, knowledge transfer and traditional forest management practices are being affected by the high mobility of community youth. In order to carry out knowledge transfer, the youth must be present because all teaching in the community is carried out through on site practice and this will not be possible if they are not around.

The following account is an example of the loss of knowledge of the use of natural resources:

The Kuakuail II forest contains, in its inventory, tree species like caucho (rubber) and el chicle (gum), but people are no longer accustomed to the practice of extracting latex sap from them. In the period from the 1950s to the 1970s, the sap was taken to make rain coats and bags for their own use and for sale. This ancestral practice came from the Wangki (Coco) River but was later lost. Such loss is attributed to the war during the 1980s which prevented a generational knowledge transfer between parents and children. During the population displacement caused by the war, minors and the youngest members did not have the opportunity to learn sap extraction techniques from their parents nor how to process it because in their new location during the war, these species of trees were not found. A second reason for the loss of this knowledge is the abundance of synthetic materials and plastics which discouraged extraction of the natural resource.

The Agricultural Border Threatens Forests

We have the same custom of planting and harvesting as the Mestizos. The big difference is that they strip the mountains bare of forests in one blow (ellos botan toda la montaña de una sola vez[10]); we Miskitus rotate crops; we use lands for agriculture but also leave them untended for many years so they can recuperate.

As we see things, the mountain allows us to have more than just money. I don't give up the mountain for just two cows. The Mestizos go two or three hours walk into the mountains, put in land markers, settle, and invest money and work. For them, the land is a form of business. We have lived in Kuakuail II for 35 years. We were there before Sahsa and Sumubila existed; we lived without clearing the trees. But now, with the colonization, men come to explore and to stay. They begin to clear the bush and within a few months, their families come, and they bring in more people. They do not allow the bush lands to recuperate.

That's how some settlements have been created here. A parcel of land that practically belonged to no community, a vacant land, is where places like Altamira, Sahsa, and San Pablo got started.

We feel bad when talking about these things; some people know

how to conduct themselves. But people (colonizers) enter illegally and settle, and if you try to get them out, they pull out the pistol. If you let them stay a while, there will be five more families within a month. This should not happen.

But we also have Síndicos who have been selling lands. That is abnormal. The Síndico has legal papers at hand … but the one who intends to buy doesn't know that it is an illegal sale so they pay. They insist on paying, but they don't know the sale is illegal. That's ambition, but they should know the law and that such sale is illegal.

Interview with Kuakuail II community members. March, 2010 in Sahsa.

This study confirmed that buying and selling relations are not necessarily formalized with legal documents. These are rather upheld by verbal commitments supported by informal papers or manuscripts. Maybe this kind of relationship occurs precisely because some lawyers don't dare to formalize the transaction because they know that these lands are collective property, inalienable, and never subject to embargo.

The Hurricane Felix Experience and the Presence of Settlers

On September 4, 2007, Hurricane Felix reached the RAAN.

Photo 5. An example of razed land. Source: Sumubila Zone,Tasba Pri. D. Mairena. April 14, 2010.

It was a Category 5 hurricane (the maximum) with 260 kilometers an hour (kph) winds that slowed to 195 kph once it hit land. In Kuakuail, the families suffered damage to their houses and most of the trees were razed. Prior to the hurricane, this zone was recognized as the most densely forested and the best in the Tasba Pri territory.

An even greater threat that presented following Hurricane Felix was the arrival of 70 Mestizo colonizers who settled on a place very near the Kuakuail territorial limits. This represented a serious threat to their resources, to biological diversity, and to their way of life.

The Mestizo settler families are destroying the forests in nearby lands through practicing their particular model for agricultural production—the slash-and-burn method used to clear areas for cattle pastures

In the zone next to Kuakuail II territory, the banks of the river are already deforested. This instance violates the law that prohibits deforestation in a stretch of 50 meters on both banks. As a result, the Kuakuail II territory stands as an oasis of forest surrounded by attackers. These people are not settled in one population center but rather are spread out through the bush in the Zone called Nueva Esperanza, Akawas. This factor causes the deforestation to take place over a broad geographic area.

These Mestizo settlers are accustomed to toss dynamite or poison into the rivers as a method of fishing. The river carries the poison downstream killing even more fish than the people need and risking the lives of other people. They kill wild animals not to feed their families but for sport or for sale. They toss away the skins and innards of the animals they kill.

Most recently, these settlers have introduced pigs that are not kept in pens (chiqueros[11]) so these are left free to roam. These animals find their way to the beaches that form along the river banks in the dry season where iguanas lay their eggs and these pigs eat the eggs.

Another violation of environmental regulations is the use of a chemical product called Cypermethrin (piretroid insecticide[12]) that is thrown into the waters to poison and catch fish. There are also cases in which another product called Gastoxín (Alumi-

num Phosphate) is used. It is placed in the mouths of small sardines that were used as bate before. These treated sardines are then thrown into the river and when larger fish eat them, they are themselves poisoned. The product known commercially as Furadan (Carbofuran N-Methylcarbamate)[13] is placed in termite nests and then thrown into water bodies to kill fish that eat the termite larvae. Many of these poachers are Mestizos who come from Sumubila.

The Kuakuail II community has made a complaint to the Environment Ministry but nothing has been done. Community members fear a reduction in the iguana population, a species on which they depend to sustain their families.

> *No one can stop this…everything is disappearing. One side of the river is pure weed; there is no longer any bamboo, they cut it all … our side is made up of tall trees, but has been impacted by the hurricane…in 5-years time the river will dry up and there will be nothing.*
>
> Edgard Boork—Kuakuail II *Síndico* (Coordinator).

When speaking with community members, one notes a strong concern and feeling of impotence over how to stop destructive processes. The authorities in this sector pay no attention to the issue.

CONCLUSIONS

1. It is a fact that Kuakuail has been invisible to the institutions of the state;
2. This fact has isolated community members to this sphere whose limits are its 1,960 hectare territory, leaving them with few relations in the exterior;
3. Internally, the Kuakuail II community lives a communal dynamic marked by a subsistence agricultural system that does not produce a surplus for the market;
4. Until September 2007, the Kuakuail II forest was the

best conserved and managed in the entire Tasba Pri indigenous territory. At that time, the forest was greatly damaged by Hurricane Felix. Most of the 29 communities making up the Tasba Pri territory have a notable presence of Mestizo settlers who have a strong tendency to cause deforestation as a result of an external productive model based on extensive logging, slash-and-burn land clearing, agriculture, pasturing and cattle ranching. This model represents a threat to the Kuakuail II communal territory, its wood and water resources, its biological diversity, its soils, etc.;

5. The community has its own organizational structure in which the Síndico is the person mandated to protect and oversee the territory's natural resources. The Síndico has been monitoring the presence of groups of settlers who have squatted on land just outside the limits of the territory. This Síndico has the power, as does the community itself, to act on this problem, but does not use it. His weakness stems from not being aware of the force and opportunities he has, those given to him by the legal framework of Nicaragua regarding indigenous lands confronted by the threatening advance of the agricultural frontier;
6. To some extent, the fact of giving the Síndico the whole responsibility for administering forest resources could be interpreted as weak or high risk governance;
7. The community possesses a great deal of knowledge about available resources in the forest. Community members have divided the forest into three use categories based on their traditions and way of life. They know the medicinal plants and species good for wood. They know and protect biological diversity. They have their own forms for transferring knowledge from one generation to the next, although youth migration undermines this practice;
8. Community women have equal access with men to natural resources. They are the carriers and transmitters of much of the knowledge about forest use, boundaries,

and the characteristics of resources. The Moravian Church has tried to exert pressure against traditional practices related to the ancestors, spirits, and beliefs, and the population clearly manifests the practice of the religious norms of the Moravian Church. Despite that, certain rules related to forest spirits prevail. In the end, there is a certain undeclared coexistence between religion and traditional practices and beliefs;

9. Although the members do not deny the value of knowledge about Western medicine, traditional medicine is a much used alternative in this community. Both men and women make use of knowledge about the uses and care of medicinal plants;
10. The national system for regulating natural resources has impeded the community members in taking advantage of the trees knocked down by Hurricane Felix despite the fact that the community plan for this has been approved. The tax rates are relatively high and are collected prior to the extraction of wood from the field. Community members are often faced with having to act illegally in order to obtain some economic benefit from this activity;
11. It seems that the state has never considered relaxing controls and regulations in order to facilitate taking advantage of wood from trees knocked down by Hurricane Felix. The state has always stuck with its regulations and controls without any change in this regard. The Nicaraguan legal framework governing indigenous communal territories constitutes a strength that the community has not utilized because of lack of clarity. These laws could be the basis for an analysis to shape their approach to the REDD+. Territorial demarcation and titling is a strong instrument for the protection of the rights of indigenous people regarding the models of the REDD+;
12. Tensions stemming from resource utilization, youth migration, the advance of the agricultural frontier, and socio-cultural influence of settler colonizers constitute

the main challenges at this time. All those factors could make the community vulnerable in the face of REDD+ initiatives because they place the exercise of free determination at risk.

Endnotes

[1] According to Edgar Boork, the Community Síndico [Coordinator], the correct name of the community is Kuakuail II, and that is what we use in this document. However, most use the name Kuakuil II. This stems from the influence of the Spanish language which over time changed Kuakuail to Kuakhuil. (This thought results from research that Kuakhuail II community participants in the Diploma Course on Climate Change and Territorial Management, held in Sahsa, carried out in their community in January 2010).

[2] Tuno is a natural fabric made from the bark of a tree of the same name. In former times it was used for bedding and also clothing.

[3] Sumu bilka= Sumu route or way. It came to be called Sumubila following settlement (Edgard Boork, Kuakuail II, April 2010).

[4] Law 445, regarding the Communal Property Regime of indigenous peoples and ethnic communities of the Autonomous Regions of the Atlantic Coast of Nicaragua, established in its Chapter II – dealing with communal and territorial authorities with legal mandate, the following: Article 4 – The Communal Assembly constitutes the maximum authority of indigenous and ethnic communities. Legal representation of the communities corresponds to communal authorities. Each community shall designate which authority will represent it legally. The Territorial Assembly is the maximum authority of the territory and is called to meet according to procedures established by the communities that make up a territorial unit. Article 5 – The communal authorities are the administrative organs of traditional governance who represent the communities who elect them according to their customs and traditions. The territorial authorities are organs of administration of the territorial unit and represent them legally. Article 6 – Elections, re-elections, impeachments, and mandate terms of communal and territorial authorities shall take place following the customs and traditional procedures of indigenous and ethnic communities. Article 7 – The election of communal authorities shall take place in the presence of a member of the territorial authority, if it exists, and a representative of the respective Regional Council who shall certify the election of the corresponding authority. Article 8 – Elections of territorial authorities shall take place in the presence of at least one representative of the corresponding Autonomous Regional Council, as a witness delegated for such purpose

by the Junta Directiva of that body. The Secretary of the Regional Assembly shall certify the election in a period of no more than eight days following the election. In case of the absence of said witness, the territorial assembly shall remit the Minutes of the election to the Regional Council for its registry and certification. In the event that the Secretary [of the Regional Council] does not grant the Certification in the required time period, the President of the corresponding Regional Council must extend it de facto. Article 9 – Each Autonomous Regional Council shall maintain an up-to-date Registry of elected communal and territory authorities. To that end, it shall train an officer to be responsible for the Registry. That official must be fluent in at least two languages of the Region. In the event that all the regional authorities are outside the autonomous regions, a representative of the Regional Council shall attest to the election. The corresponding Municipality shall maintain a Registry of Regional Authorities and shall be responsible for Certification and shall do so in a period of no more than eight days following the election. The Regional authorities can also inscribe the Minutes of the election in the Registry of the corresponding Regional Autonomous Council. Article 10 – The traditional communal authorities can authorize the utilization of communal lands by third parties only if they have been mandated to do so by the Communal Assembly. Subsistence activities do not require such approval. When this involved natural resources in common use by the communities making up the territory, permission shall be granted expressly by the Territorial Assembly. The corresponding Autonomous Regional Council shall offer technical support to communities in the process of approving and exercising the rational use of their regional resources.

[5] This representational format of Kuakuail II organization is that presented by the inhabitants and does not necessarily correspond to a western form of organigram or hierarchical chart. The authors of this study have decided to go with the description as related by the interviewees without trying to match it to a western organizational scheme.

[6] *Tara* in Miskitu means tall. Thus, unta tara, means tall bush or bush where trees are tall.

[7] For the lands and territories of the Atlantic Coast of Nicaragua, the term *inembargable* means that the land involved is an assured capital for the communities, and is not subject to embargo from creditors who might move against the holdings of an individual or community. Inalienable holdings are those that cannot be mortgaged, or more broadly, cannot be transferred legally to third parties. "Inprescriptible" means that these territories will be communal lands forever and ever.

[8] Climate change.

[9] Notes by D. Mairena based on a presentation by Avelino Cox to a

workshop on Methodology for Creating a Framework for Cultural Values Bilwi. October 2009.

[10] The expression *botar la montaña de una sola vez* can be interpreted as: cut down everything all at once; another similar term used is tierra arrasada, scorched, razed or devastated land.

[11] Corrals or pens.

[12] Cypermethrin – a wide spectrum pesticide. See http://chemicalland21.com/lifescience/agro/CYPERMETHRIN.htm for an explanation of its chemical makeup.

[13] Furadan is the commercial name of Carbofuran. See http://en.wikipedia.org/wiki/Carbofuran for a description of its chemical makeup. It is extremely toxic for insects (bees and beneficial species), zooplankton, shell fish, fish, and birds. The latter can be poisoned when they feed on small animals that have been exposed to Carbofuran or have directly eaten grains of the pesticide that have a similar size and form to seeds. One grain is enough to kill a small bird which explains the eventual use of this compound as an avicide. It is moderately toxic to amphibious species and slightly so for invertebrates (worms) and mollusks.

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Persons interviewed:

Síndico Edgard Boork

Señor Norman Martinez, founding member of the community

Señora Juliana Martinez Retilio – community member

Señora Verónica Cirilo Downs - community member

Señora Judith Martínez – community member

Deeply probed interviews:

Síndico Edgard Boork

Señora Verónica Cirilo Downs Community member

ANNEX

Annex A. Norms for Social Conviviality and Social Administration of the Community

I.1. Communal work

a) Tasks that require unpaid communal work (churches, schools, health centers, infant eating areas, public drainage, commentaries, parks, and sports fields) will be programmed for the last Friday of each month and each family of the community has an obligation to provide at least one member to participate in the work. This applies both to communal works and to cleanup tasks;

b) Families that cannot participate in cleanup work shall provide materials (tools, sugar, snacks, bread, etc.) or make a contribution equivalent to C$20;

c) Each Saturday, every family has the obligation to carry out domicile cleanup (yards, patios, collection and burying of garbage);

d) For disposal of garbage (plastic, cans, animal wastes, etc.), there will be a community dump; it is prohibited to toss garbage in public places or in patios and yards;

e) Once a year on a set date, the community will do a cleanup of community gardens and land markers. Families that cannot participate in this work shall provide materials (tools, sugar, snacks, bread, etc.), or make a contribution

equivalent to two days of one person's work;

f) It is absolutely prohibited to dump garbage and dead animals into creeks, water sources, and rivers. In the case where a family or community member fails to adequately dispose of garbage, the judge will proceed to sanction them with a fine of up to C$XXX. Collected fines shall go to an administrative fund for the use of the governing board of the community. It will be used to cover community management costs in accordance with projects given priority by the communal assembly;

g) The community shall designate an area to be used exclusively for a community garbage dump.

I.2. Human health services (vaccination, epidemics, and pandemics).

a) The judge, together with health leaders, midwives, and personnel from government institutions shall coordinate work to carry our vaccination campaigns and follow up of cases of possible epidemic infections (H1N1, swine flu, avian flu, smallpox, anthrax, etc);

b) All community families shall go to the health post or place indicated to be vaccinated or to receive advice about vaccination as determined by communal authorities;

c) Health commissions, in coordination with the health representative and communal assemblies, shall vouch for compliance with health plans and programs, and shall report to the communal assembly;

d) Community members who are able and are prepared to participate in work parties shall do so voluntarily. Any person who refuses to participate shall be sanctioned by the community judge to do 15 hours of community cleanup in public areas. The community judge will oversee compliance with the sanction with the help of the community police. He or she will later report on this to the assembly and to the communal executive board.

I.3. Animal health work

a) The authorities of the communal executive board, together with authorities from the ministries of health and agriculture (MINSA and MAGFOR), shall coordinate the execu-

tion, planning, and follow up of vaccination campaigns (equine, cattle, swine, and canine) and epidemiological follow up;

b) Community members are obligated to reveal the existence of infections in family or community animals in order to prevent epidemics;

c) When a community member butchers a cow or pig, he or she shall pay C$50 in the case of cows, and C$20 for pigs, the amount to be paid to the community judge to create a fund for management work of the executive board.

I.4 The Community Executive Board (*Junta Directiva*)

a) All community members 16 years of age and above are members of the communal assembly. Their condition as community member shall be accredited through a list of assembly participants which shall register the name, surname, identity card number (in the case where one possesses a card), and signature;

b) The authorities who convene the communal assembly will maintain a minutes book that will contain: a list of participants, the beginning hour of the meeting, the agenda points, names of candidates, votes obtained in an election, and the posts to which persons are nominated and elected. The minutes should indicate if an election was by slate, or by individual;

c) To become a member of the executive board, one must have been a stable inhabitant of said community for at least six years, be at least 18 years old, and hold full political and civil rights. One must have knowledge of the community and its problems, and above all, demonstrate the will to be a leader;

d) The executive board must be made up of proportional representation of men and women, and must have a community youth member (18 to 30 years of age);

e) The executive board shall be elected for a period of two years and will have six members: the *Síndico* or coordinator, *vice Síndico* or vice coordinator, judge, secretaries, treasurer, legal officer, and spokesperson;

f) Not eligible to run for the executive board are those who have been found guilty of common offenses (robbery,

rustling, violent fights, and intrafamily violence);

g) An election shall be certified by a representative of the territorial government in the case where no representative of the Autonomous Regional Council is present. In the event that no representative of the territorial government is present, the results of the election must be presented to the territorial authorities within 48 hours. The territorial government, together with the delegate of the Regional Council and the community coordinator elected in that assembly, shall arrange for accreditation of said executive board by the Regional Council, in conformity with Article No. 7 of Law 445.

I.5.1. Traditions and customs

a) Upon the death of a community member, all community members shall help the grieving family, and no work will be done that day;

b) If an outsider wants to settle in the community, that person must obtain authorization from the communal assembly, at which time he or she shall be presented with the norms of convivial living and administration of the natural resources of the community;

c) To select representatives to workshops, training courses, seminars, etc.—the community executive board shall select persons to represent the community. They should choose those who have the capacity to carry out the goal of the given activity. When the activity is completed, the representative shall make a report to the executive board;

d) The rights to private and collective land holding shall be respected. In the case of outsiders settling on communal lands, they too shall be held to these norms;

e) When conflicts occur over property limits, the judge together with a judicial mediator, shall be the persons designated to resolve them. If the conflict is on community areas, the Síndico shall intervene to resolve the said conflict. The verdict dictated by the mediator must conform to the requirements of national laws.

I.6. Relations between communities

a) Communal authorities shall coordinate with authorities of

bordering communities regarding cleanup of shared paths, land makers, and roads;

b) With support from the executive board, the judge shall establish cooperative relations with authorities from surrounding communities and neighbors to fight delinquency, rustling, forest fires, and acts against public security. This collaboration shall be undertaken jointly with police authorities in the territory;

c) In the case of conflicts over land borders with other communities, those involved shall turn to the territorial government to resolve them.

I.7. Relations between the community and the territorial government.

The community recognizes the territorial government as the maximum representative and management body for the territory and, in that framework, establishes that:

a) The community will present to the representative of the territorial government, in the communal assembly, a profile of the community's priority projects, so that they can be presented to government entities and national and international cooperation agencies;

b) Community representatives to the territorial assembly will present to the communal assembly the results of the management of the territorial government, along with its demands and concerns;

c) The community will be able to make alliances with other communities to present joint projects for the consideration of the territorial government.

I.8. Community relations with the municipal government, the regional government, (GRAAN), the Regional Council (CRAAN), and with state entities.

a) In projects executed by those institutions in the community that require laborers, workers from the community shall be contracted according to their capacities;

b) Projects should be carried out in accord with the needs and priorities of the community, and in an equitable manner among communities;

c) The GRAAN jointly with the territorial government will

provide specialized advice regarding community interests, in accord with our demands and priorities. This is mainly in the case of issues related to the management and administration of natural resources;

d) The CRAAN should approve by formal resolution our internal norms and regulations through an initiative from our territorial government.

II. NATURAL RESOURCE ADMINISTRATION MANAGEMENT

II.1. Conservation areas

a) All men and women community members within areas declared to be conservation zones must protect standing forests, mainly in areas affected by Hurricane Felix—areas that are of vital importance to the community (water sources, trees, seedlings, habitat for endangered species, sanctuaries for migrating birds, fishing grounds, medicinal plants);

b) The community will do communal work to: maintain fire walls and set up fire brigades to prevent forest fires in the area;

c) In conservation areas the use of insecticides and herbicides is banned—whether natural or chemical—for purposes of fishing, obtaining firewood for market, or hunting animals for market.

II.2. Use of forest resources and their protection

a) For tree cutting for commercial or domestic use, the minimum tree diameter must be 18 inches, and height at least at chest (dap) level;

b) Trees cannot be cut along river banks for at least 200 linear meters from the bank on each side of the river;

c) Cutting of trees for commercial ends is prohibited for the following species: mahogany (Switwnia macrophylla), kapok or java cotton (ceiba petandra), chilamate (picus grande) and cedro real (Cedrela odarata);

d) For domestic use, each family is authorized to cut up to

3500 board feet, subject to authorization of the community Síndico and overseen by the judge of that community. Use of that wood is not subject to any tax or stumpage fee;

e) Any person making commercial or domestic use of a forest resource (trees) shall plant five trees for every tree taken, in order to guarantee the continuity and quality of the forest. This norm shall also apply to those who market firewood;

f) Commercial extraction of forest resources, either by community members or outsiders, must comply with all national norms and laws. Prior to initiating the process of drawing up documents (PGM or PAF) a proposal must be presented to the community. Once INAFOR grants permits a communal assembly shall be held where the results of the process and a plan will be presented, explaining how the project will be of benefit, and a contract shall be presented, in accord with these norms;

g) The unit of measurement for payment shall be in: cubic meters for logs and in board feet for sawed lumber. Prices to be paid are found in the following table:

II.3. Water resources

Species	US$/M^3	US$/Board Feet
Precious (mahogany, granadillo, cedro real)		
Semi precious (guapinol, cortez, cedro macho)		
Blancas (other species)		

It is a priority for the territory and the territorial government to guarantee access to water for human consumption to each and every community inhabitant in our territory—with the quality and quantity to meet their needs.

II.3.1. Surface waters (rivers, creeks, water springs and lagoons)

a) Use of water for human consumption is a PRIORITY for and a DEMAND of the community. For no reason can water use priority be given to animal, agricultural, or industrial consumption;

b) Areas designated by communities for supplying potable water to inhabitants can be declared to be for community

use even though they may be on private land. In that case, prior payment of no more the C$5,000 per hectare shall be made. No property owner can refuse to comply with what is stipulated in national water laws and the Constitution of the Republic;

c) Negotiations over lands declared to be of communal use between private owners and the community will be conducted through mediation by the territorial government;

d) It is strictly prohibited to clear areas to plant for agricultural purposes (corn, beans, rice, yuca, etc.) within 200 linear meters from the border of an area where water sources for human consumption are located. Such border areas can only be used for strictly forestry purposes or to be recuperated using agro forestry systems;

e) Using forest resources within 200 linear meters of both sides of riverbanks is prohibited;

f) Use of agrochemicals within 500 linear meters of water sources is prohibited;

g) Installation of auto mechanic shops within 1,000 (one thousand) linear meters of river banks is prohibited;

h) In communities with potable water systems, the CAP shall be the guarantor of compliance with these norms and application of sanctions established in this document;

i) Non compliance with any of these norms shall be sanctioned in accordance with the stipulations of this document.

II.3.2. Subterranean waters (wells dug or perforated with machines)

a) The use of community wells gives priority to human consumption and their management shall be in charge of members of the executive board or a person it appoints to that task;

b) Agricultural activity is prohibited in an area of 200 meters surrounding a well used for human consumption;

c) The executive board shall guarantee weekly cleanup of the area around the well to a distance of 200 lineal meters from the rim of the well;

d) If a well lacks sufficient water to assure the full needs of the

community, the executive board shall take charge of instituting a rationing system that includes access for all inhabitants, with priority given to children, the elders, pregnant women, and water used for cooking;

e) Cleansing of community wells (water testing and disinfection) shall take place at least once a year at the beginning of winter (rainy season), and the executive board shall guarantee availability of the materials needed for this work.

II.4. Mineral resources (gold, select materials, etc.) and other geological resources

II.4.1. Gold exploitation

a) Any community member dedicated to artisanal gold exploitation (panning or sluicing) must have a community permit extended by its *Síndico*;

b) In the exploitation of open air gold areas the use of equipment that causes any kind of contamination of the community's ecosystem is prohibited, especially of its sources of water;

c) Regarding exploitation of gold in community areas: a community member who utilizes this resources must pay a fee of C$ XX per gold penny extracted, payable to the community *Síndico*. In the case of exploitation of private areas, this activity will be controlled by community norms and shall require a permit from the community executive board. The person exploiting these areas will pay a fee of C$ YY per gold penny;

d) Each community member and outsider dedicated to gold exploitation shall respect the laws and technical norms associated with this activity (environment and natural resources laws, mining laws). The community judge shall be in charge of overseeing compliance of these norms in the community;

e) Exploitation of gold mines by companies and private persons outside the regime of artisanal exploitation shall be regulated by these norms, the Mining Law and Law 445.

II.4.2. Other geological resources

The use and exploitation of other resources shall comply with pertinent laws, the Environment Law, laws on natural resources, and the Mining Law.

II.5. Hunting of forest wild life

Hunting of endangered species is prohibited, according to the list stipulated by MARENA, and in respect for the seasonal closures and bans established by that institution.

a) Prohibited are:
   - Capture of living forest animals;
   - Use of explosives and agrochemicals or natural materials that contaminate water for fishing;
   - Capture and transport of parrots and macaws in the month of May;
   - Use of fishing nets in rivers and lagoons

b) The executive board shall establish family fishing and hunting quotas;

c) Sites where iguanas, lizards, and turtles lay their eggs shall be conservation areas;

d) Fishing can only be done with harpoons, hooks, and arrows. Other fishing methods are prohibited;

e) The *Síndico* or judge, under mandate from the communal assembly, shall regulate the exploitation of natural resources.

II.6. LAND TENANCY, RENTING AND LEASING, AND PAYMENT OF STUMPAGE FEES

II.6.1. Land lease contracts

a) In community lands, any outsider who wants to settle in this community shall pay a rent for the quantity of land to be exploited. This rent shall be set by means of a contract that will establish: the area to be exploited, intended land use, duration of contract, general laws that apply to the lessor, and clauses imposed by the community;

b) The measurement unit in the case of land lease shall be the hectare, and will have an annual rent that depends

on the activity to be undertaken (commerce, industrial, mining, agricultural, ranching), but will be set at a minimum of $4.50 per hectare at the official exchange rate;

c) The list of community norms shall be annexed to the contract, and the lessor shall commit to comply with them to the letter;

d) For leasing areas to state institutions, and national and international firms, the community shall obtain advice from the territorial government. Its approval is required to sign any such contract.

III.7. SANCTIONS

III.7.1. The following sanctions are established

a) Damage to natural resources shall be classified as slight or grave;

b) Slight damages are: hunting over the quota assigned by the executive board of the community, allowing a fire to reach other land parcels when burning agricultural areas, cutting down trees of great value to flora and fauna, using fire to collect honey comb, extracting iguana or turtle eggs, using fishing nets in rivers or lagoons, dumping garbage or animal waste into water sources;

c) The community member who commits a slight damage shall be sanctioned with a C$100 fine, and ten days of community work;

d) Grave damages are: burning forests, agricultural burning that damages private property, contamination of any water source, hunting endangered animal species, using explosives when fishing, and non compliance with norms established in this document;

e) A community member who commits grave damage shall be sanctioned with a C$5,000 fine and 30 days of community work;

f) If damages are greater, the judge shall proceed to present a complaint with the competent authorities (civil and military).

3

THE DAYAK JALAI PEOPLES & THEIR CONCEPT OF DAHAS IN KETAPANG DISTRICT, WEST KALIMANTAN, INDONESIA: A CASE STUDY

By
Institut Dayakologi (ID) & Aliansi Masyarakat Adat Nusantara (AMAN)*

***Research Team:** Frans Lakon, Paulus Unjing, Vitalis Andi, Elias Ngiuk & Sujarni Alloy

INTRODUCTION

This research project was conducted to understand the role of indigenous peoples in forest management. Despite being regarded as out of date, unrealistic and even unintelligent, indigenous peoples' traditional knowledge and wisdom on forest management turn out to be exceptionally beneficial to efforts at reducing global warming. In recent years, the experiences, knowledge and wisdom of indigenous peoples have attracted the world's attention, especially those that have significant contributions to reducing emission from deforestation and degradation. There is a need to document these because most of these knowledge and wisdom continue to be orally passed on to future generations.

The findings of this research show that the concept of natural resource management among the Dayak Jalai people of Indonesia is based on the principles of togetherness and sustainability. Natural resource management is reflected in the traditional wisdom and local initiatives of these indigenuos peoples and embodied in their concept of Dahas. With the purpose of effectively managing the forest, the concept of Dahas reflects the culture of the Dayak Jalai people and their views about their natural environment. It serves to maintain the balance and the completeness of the forest, thus protecting it from the growing threat of capital expansion.

Thus, the concept of Dahas reflects the rights that the Dayak Jalai people have in managing their natural environment. It is mandatory for everybody, including the states, to ensure that these rights are legally protected, recognized and respected. The 2007 United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) guarantees as much.

RESEARCH BACKGROUND

Research Background

The remaining tropical forests in developing countries have long been owned and managed by the indigenous peoples. They have struggled to protect this important resource, and have fought against government programmes and policies that will remove them from their own territories, away from the forests which are key to their survival.

The way indigenous peoples relate with the forest is rooted in their historical relationship with their lands and territories. Such a relationship defines and provides the basis for the spiritual, cultural and socio-economic life of the people. Much of the indigenous peoples' knowledge and wisdom about their natural environment is born out of this relationship, persisting despite modern society's efforts to undermine them.

Case studies on indigenous sustainable forest management practices are important to increase the confidence of indigenous peoples to continue such practices. At the same time, these case studies provide evidence to governments, donors and multilateral organizations on how indigenous peoples can contribute to the success of REDD+.

By documenting the in-depth knowledge and sustainable practices of indigenous peoples in forest management, this research hopes to strengthen indigenous peoples' campaigns and advocacies on climate change and REDD+ at the national and global levels in relation.

Objectives

a. To document indigenous peoples' practices in particular forest ecosystems that contribute to reducing emissions from deforestation and forest degradation, sustainable forest management, forest conservation, increased carbon reserves, and promotion of cultural diversity and biodiversity;

b. To describe in a comprehensive manner the multifunctional uses of the forests (in the context of the cultural, spiritual, biodiversity, food, medicines, etc.);

c. To analyze the implementation of existing customary and indigenous tenure[1] systems;

d. To identify specific strategies used at the village level to strengthen[2] indigenous knowledge, practices, and customary systems of governance in forest management; and

e. To identify various threats and barriers that impede sustainable forest management and conservation practices, as well as hinder the transfer of knowledge to younger generation.

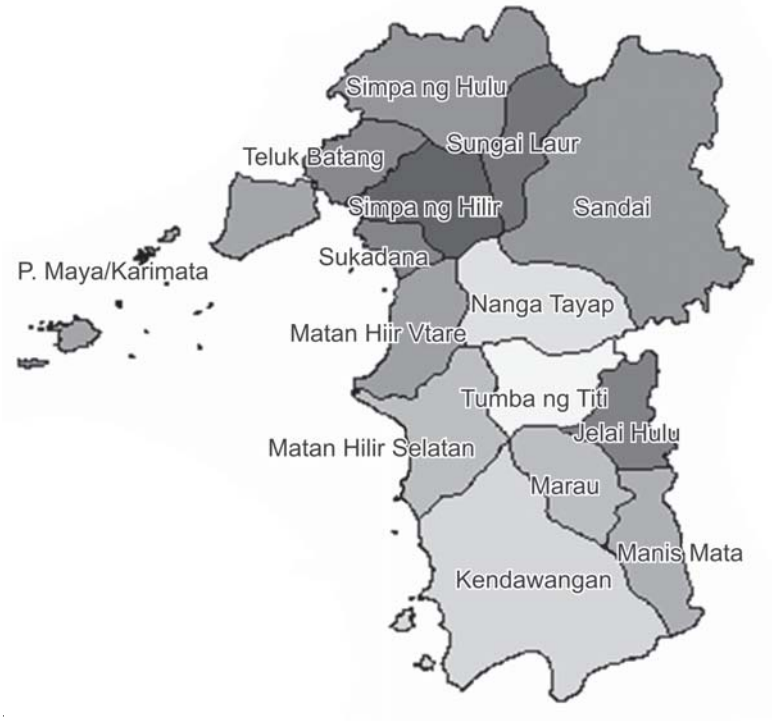
GENERAL PROFILE OF THE RESEARCH SITES

Profile of Ketapang Regency[3]

History of Ketapang Regency

During the governance of The Netherlands, Ketapang Regency was one of Afdeling regions that formed part of West Kalimantan Residency (Residentis Western Afdeling Van Borneo) with its capital located in Pontianak. Ketapang Regency was divided into three Onder Afdeling (Onder Afdeling Sukadana in Sukadana, Onder Afdeling Matan Hilir in Ketapang, and Onder Afdeling Matan Hulu in Nanga Tayap). Each Onder Afdeling was led by a Wedana. Later, these Onder Afdelings were subdivided into several Onder Distrik; each Onder Distrik was led by a Deputy Wedana.

Ketapang Regency remained under Afdeling status even after the governance of The Netherlands ended due to the arrival of Japan in 1942. This was later refined pursuant to Stard Blood 1948, No. 58 which recognized the existence of swapraja governance. Ketapang was divided into three swapraja regions, namely Sukadana, Simpang and Matan. Those three swapraja regions were then incorporated into a federation. During the governance of RI, by virtue of Law No. 25 year 1956, Ketapang



Area	35.809 Km^2
Number of islands	108 (52 unoccupied islands)
District	15
Sub-district	5
Village	159
Hamlet	651
Population	452,554
Population ratio	107
Population growth	3.18%
Economic growth	2.85%
Regional Income per Capita	Rp 3,098,481.69 (applicable)
	Rp 1,499,314.89
* Information based on *condition in 2002*	

Regency was granted status as part of the autonomous region of West Kalimantan Province, under the leadership of a Regent.

Geographical Location and Size of the Region

Ketapang Regency lies on the south of West Kalimantan Province, at a position of South Latitude 00 19′ 00′′ to 30 05′ 00′′ South Latitude and 1080 42' 00′′ East Longitude to 1110 16′ 00′′ East Longitude. It is adjacent to Kubu Raya Regency and Sanggau Regency on the North; the Java Sea on the South; the Central Kalimantan Province and Sintang Regency on the East; and the Natuna Sea on the West.

Ketapang Regency is the largest Regency in West Kalimantan with an area of 35,809 km^{2,} with the size of land approaching 92.74 per cent, or around 33,209 km^2. Out of 25 districts, by the end of 2005, Kendawangan District has the largest area (5,859 km^2, or 16.36% of Ketapang Regency's area) while Delta Pawan is considered the smallest district (with an area of 74 km^2, or 0.21% of Ketapang Regency's area).

Topography

Ketapang is divided into two areas, the coastal area and the upstream area. The coastal area runs from North to South, mostly land and swamp. This area includes Teluk Batang, Seponti, Pulau Maya Karimata, Simpang Hilir, Sukadana, Matan Hilir Utara, Delta Pawan, Muara Pawan, Matan Hilir Selatan, Benua Kayong, Kendawangan and Manis Mata.

The upstream area is usually hilly and partially covered by dense forest. This area includes Simpang Hulu, Simpang Dua, Sungai Laur, Sandai, Hulu Sungai, Nanga Tayap, Tumbang Titi, Pemahan, Sungai Melayu Rayak, Jelai Hulu, Marau, Singkup and Air Upas Districts. Similar to other regions in West Kalimantan and overall Kalimantan, Ketapang Regency also has substantial rivers traversing the area. The longest river that flows through Ketapang Regency is Pawan River connecting Ketapang City in Delta Pawan District with Matan Hilir Utara, Muara Pawan, Sandai, Nanga Tayap, and Sungai Laur Districts. This river is an artery that bridges economic activities between rural society

with those in the capital of district and Regency. In addition to Pawan River, there are other rivers that move across Ketapang Regency.

Islands

Ketapang Regency has 114 islands but only half of them are occupied. Some bigger islands are Karimata Island, Maya Island, Penebangan Island, Bawal Island, Gelam Island, all of which lie along the waters of Karimata strait. Some of these islands have been designated either as a National Park, a preservation or conservation area.

Population

In 2006 there were 486,792 individuals residing in Ketapang Regency, and with a total area of 35,809 km^2, this gives a population density of only 14 persons per km^2. The population has not been evenly spread across Ketapang (for example, the population density of Delta Pawan District outnumbers the other districts with 840 individuals per km^2; another district, Benua Kayong, has 87 individuals per km^2, while Hulu Sungai District has the least population with 2 individuals per km^2). In 2006, sex ratio or gender comparison between male and female population in Ketapang Regency was recorded at 107, which means for every 107 males in the population, there are 100 females. The rate of population growth in Ketapang Regency for the period of 1980-1990 was 2.58 per cent. This went down to 2.20 per cent for the period 2000-2006. Population growth by district in 2000-2006 shows that districts Sungai Laur and Sukadana had the highest rates during this period (4.61% and 3.84% respectively). High population growth rates in these two districts resulted from in-migration due to the establishment of the palm oil industry. In terms of age, the Ketapang population may be considered young, with 32.56 per cent of the total population belonging to the "below 15 years old" age group; on the other hand, only 3.27 per cent of the population are over 65 years old.

Economic Situation

The economy of Ketapang Regency is highly dependent on the rich natural resources in the area. The agricultural sector produces rice, food crops (like corn, cassava, sweet potato, peanuts, soya beans and green beans), and fruits (like banana, rambutan and durian). This sector has been growing through the years and is expected to generate food sustainability in Ketapang Regency, making it a self-supporting region.

However, plantation of various crops in the region decreased in 2006 except for coffee. Oil palm as a plantation plant has potential for growth, but the availability of appropriate soil for oil palm plantation has been a problem. Domestic and foreign investors are needed especially those who can develop oil palm plantation in Ketapang Regency.

The livestock industry in the region include cow, buffalo, and poultry, while the potential for fishery has not been well developed considering the fact that the region consists of waters, with sea and rivers flowing across different districts within the territory of Ketapang Regency. The region is considered to have good potential for developing the fishery sector, whether marine fishery, general fishery or cultivated fishery.

The vast territory of Ketapang Regency and the substantial number of forests are valuable assets to this region. Unfortunately, these assets have not been fully maximized for the people's welfare. With logs and processed wood as the most in demand forest products, investments are not managed well and only a few parties benefit. Illegal logging is also rampant in Ketapang Regency but culprits seemed to be immune from legal consequences.

In general, Ketapang Regency is one of the developing regions in the country whose agricultural sector, once considered the region's main source of livelihood, is now being gradually replaced by the industrial sector. The industrial sector itself has just started to grow in Ketapang Regency, as indicated by the presence of mostly small and handicraft industries, and with only a number of medium and big industries. In 2006, these companies employed 3,890 laborers consisting of 3,286 males and 604 females.

Social Condition

In the education sphere, one favorable development in the Ketapang region is the increasing availability of physical and non-physical infrastructures, due to efforts of the government and private institutions. The number of schools, state-owned and private, increased in all levels, as well as the number of students who are accommodated, especially in private institutions.

When it comes to health services, in 2006, there were 927 medical workers in Ketapang Regency, most of which were nurses (341) followed by midwives (154). Data on the number of Posyandu (integrated service unit), active cadre, and the existence of folk midwife require more concern—the number of posyandu does not increase accordingly with the increasing number of cadres. In general, the number of medical workers in health services is generally decreasing. At the same time, there has not been any change in the number of medical infrastructures that are managed by the government compared to those managed by private institutions, with two (2) hospitals operating in Ketapang Regency with 191 beds. According to types of disease, more patients suffer from acute infection on upper respiratory tract, clinical malaria, and disease on muscle system & connective tissue.

In terms of religion, one of the most important points in Pancasila and 1945 Constitution is that the State guarantees religious life and will always promote harmony between the various religious and beliefs communities. In 2006, the Office of Religion Department of Ketapang Regency has recorded the following religious buildings in the region: 388 mosques, 429 surau, 70 churches, 152 chapels, 67 protestant churches. In that year, there were 90 Moslem clerics, 29 pastors, 12 catechists in Ketapang Regency.

Jelai Hulu District

The Jelai Hulu district (1,358 km^2, or 3.79% of Ketapang Regency's area) is where we find the Dayak Jalai communities, distributed over the three areas of Kampung Tanjung, Kampung Kusik Pakit, and Kampung Pangkalan Pakit.

Profile of Kampung Tanjung

History

The tribe's elders in this village narrated the Dayak Jalai in Kampung Tanjung. Manjing and Tarah were the pioneers of Kampung Tanjung. Based on the genealogy, there were only 10 Damong (tribal chief) as far as the tribal elders can remember. Manjing and Tarah themselves are believed to be originated from Laman or Kampung Patai Patah in Delang-Lamandau region in Central Kalimantan. Manjing and Tarah are assumed to be descendants of Tuluian who ran away from the slavery of the nobles in Central Kalimantan. Manjing and Tarah were two siblings who initially set up a house opposite Kiriq River (from the centre of Kampung Tanjung), now known as Sitarah (Sitarah is currently unoccupied and considered a sacred place).

According to the village elders, after Manjing Tarah passed away, his descendants wanted to move opposite the river where there had been a Kampung Sengkuang people's haven—a place to stop by when they went back and forth towards Tumbang Titi. The Sengkuang people demanded tribal sanction of 2,5 kgs of iron but the descendants of Manjing and Tarah only had 1.875 kgs. The remaining 625 grams have not been settled up to now.[4]

After the population started to grow, they set up more houses at Tanjung that protruded at the end of the village. This area has come to be known as Tanjung.

Geographical Location

From the participative mapping that was conducted, the area of Kampung Tanjung spans the size of 300 km^2. Tanjung is adjacent to Kampung Arai Duaq on the East, to Kampung Riam Kusik on the West, to Kampung Kekuraq on the North, and to Kampung Perigiq on the South.

Population

In 2009, the Kampung Tanjung had a total population of 1,840 people, with 95 males and 889 females.[5] Ethnically, Kampung Tanjung consists mainly of the Dayak Jalai sub-tribe with a few immigrants.

Topography

Kampung Tanjung is a hilly terrain, with abundant natural resources. Until today, Kampung Tanjung has not been visited by big-scale investments, even though nearby villages in the vicinity have already been exposed to mining industry. Kampung Tanjung lies in the upstream area having Kiriq River as a source of clean water. This river also serves as an alternative transportation route by the people along the stream[4] to market their resources.

Dahas

The local wisdom that is possessed by the community of Dayak Jalai in Kampung Tanjung is in the form of dahas. The existing dahas in Kampung Tanjung are the following:

Occupied Dahas Tuhaq

1. Situbaq	2. Bajur	3. Sungai Hundang	4. Sungai Sagaq
5. Siambang	6. Palmaram	7. Setajam	8. Daukan
9. Titi Karanjiq	10. Sungai Pauh Hilir	11. Buluh Gading	12. Sungai Pulai
13. Semehalir	14. Hantasan	15. Pelancangan	16. Batu Rayaq
17. Sungai Kemuyang	18. Kempaning	19. Kusik Sapar	20. Sungai Hitam
21. Sipuh Hulu	22. Barangam	23. Kebalahan	24. Sungai Tanang
25. Lubang Labuh	26. Jambatan	27. Sebadung	28. Selimau
29. Sungai Pauh Huluq	30. Patuk Sing	31. Siawaq	32. Tumanang
33. Sungai Nangkak	34. Kelupak Patai	35. Jumpung Sanggau	

Dahas Lambat

1. Tanjung Layang	2. Karangan Naik	3. Sembakah	4. Begutal
5. Batu Patih	6. Sesapit	7. Paring Ayang	8. Riam Baguq
9. Pemaungan	10. Pelantaran Batuq	11. Tempajak	12. Selimat
13. Sekubangan Rabat	14. Tengkiding		

Dahas Basar

1. Batu Rayak	2. Penyiuran Bintiq

Dahas Mudaq

1. Sikambingan	2. Kepalaq Sawaq	3. Sempupuan	4. Titiq Linggis
5. Sungai Pulai Mudaq	6. Lubuk Tempurung	7. Panggung	8. Muara Situkar
9. Danau Idar			

Profile of Kampung Kusik Pakit

History of Kampung Kusik Pakit[6]

In the beginning, Kusik Pakit was a jungle. Ten years ago, someone named Bingis from Dahas Limau Purut, Benua Kelukup Lantak, moved to the area of Sungai Kusik Pakau. Bingis moved to Kusik Pakau due to personal reasons—he had an affair that brought him shame, so he moved away and set a new field at Sungai Kusik Pakau. This eventually became a dahas with 80 households, and the first Damung was Bingis himself. Years later, the dahas grew and the community kept increasing in number. Now it is named as Kampung Laman Baru.

During the leadership of Bingis as Damung, the village was in good, peaceful and secure condition. During the reign of Limpar, the 9th Damung, intense disputes for the Damung position eventually caused the people to move to a village nearby. There were also those who moved to start their own dahas like Gemalaq Berdiriq, father in law of Supir. He opened his own field in a forest and then turned it into a new dahas, the Dahas Rangga'k.

At that time Dahas Rangga'k people had started to assimilate with natives from other villages such as Kampung Belatuk and Tanjung who also found their spouses in Dahas Rangga'k. This dahas also grew so much in population that it eventually became a village. Some members of the village then moved to Dahas Uju'k which was not too far from Rangga'k. This was under the leadership of Damung Sol. A *belakau* activity was then conducted around 1968 and they named the dahas Titiq Ujuk. In 1976, a traditional village was established called the Sungai Kiriq Village, which was a blend of several dahas, namely Dahas Silimau Purutan, Rangga Intan and Titiq Ujuk. Kampung Laman Baru was still part of Rangga Intan at that time while Dahas Silimau Purutan was derived from Kampung Arai Duaq. This village eventually became known as Kusik Pakit after a Kusik tree which stood side by side with Pakit tree in the middle of Titiq Ujuk village.

Administrative Location of Kampung Kusik Pakit

Kampung Kusik Pakit is adjacent to Kampung Benatuq on the East, to Kampung Semelahuq on the West, to Kampung Pasir Mayang on the North, and to Kampung Lamboy on the South.

Size of Area

Kampung Kusik is the center of Rangga Intan Village administration with an area of 2,013 hectares. This size includes the area of villages (24.40 hectares), residences (5.69 hectares), rubber plantation (1,087.214 hectares), paddy field (71.80 hectares), Sungkai plantation (7.16 hectares), coffee plantation (1.40 hectares), and forest/jungle (219.40 hectares).

Population

In 2009, Kampung Kusik Pakit had a total population of 378 people, with 189 males and 189 females. There were 110 head of households. Majority of this population were Dayak Jalai who belonged to the Roman Catholic church.

Topography

Just like Kampung Tanjung, Kampung Kusik Pakit lies on hilly terrain and with abundant natural resources. There are no big-scale industries like plantations and mining companies, the entry of which they have opposed because of their perspective

that nature is an inseparable part of their being. Kampung Kusik Pakit is also traversed by Kiriq River; and just like in Kampung Tanjung, this river is used to transport economic products from nearby communities Sidahariq Village (Kampung Lamboy) and Tanggerang Village (Kampung Tanjung).[7]

Dahas [8]

1. Occupied Dahas Tuhaq are as follows:

Selimau Purutan, Keminting Sebatang, Riam Bangkul, Riam Temiang, Tudaway, Sepanjauan, Batang Sagaq, Segulang Pukah, Perumahan Kapal, Sugih Bedarah, Sungai Gamang, Semaram, Si campui, Keyantak (14) pieces.

2. Dahas Tuhaq Lambat:

Rangga'k, Hiang Lakik, Sungai Pulai, Sembulungan, Pemberusan, Lubuk Lingis, Pematang, Titik Ujuk, Pauh Manis, Gudang, Pengembayauan, Riam Tamang, Selambangan, Paoh, Dahas Galau, Sengkurip, Abihan (17) pieces.

3. Dahas Basar:

Selimau Purutan.

4. Dahas Mudak:

Kampas, Tubin, Sungai Pangkal, Kebaran, Pembiruan, Danau Rangat, Dahas rimba, Labay, Sijia, Sungai Anak, Lubuk Putat (11) pieces.

Profile of Kampung Pangkalan Pakit

Kampung Pangkalan Pakit is lies between Jelai Hulu District and Tumbang Titi District of Ketapang Regency. Kampung Pangkalan Pakit is 38 km away from the center of Jelai Hulu District. One can travel by land to reach this village from Ketapang City through Pelang-Tumbang Titi, around 4-6 hours by motorbike.

History of Kampung[9]

Early settlers in Kampung Pangkalan Pakit were the Tanjung people who started farming in the area. The first person who set up Kampung Pangkalan Pakit was Upui Tongai, who established dahas at Pelontaran Batuq.

In 1921, Pakit became a benuaq or a village. Its first Damong was Kitan. In 1988, the structure changed from benua Pakit to Pangkalan Pakit Hamlet, and later merged with Tanggerang Village (Kampung Tanjung). As a hamlet, Kampung Pangkalan Pakit was led by a chief named K. Mundis who was in charge for 10 years. Current chief is named Rusmanto.

Population

Kampung Pangkalan Pakit is a typical model of a Dayak Jalai community—there are not so much inhabitants. Below are details of the population:

No.	Description	Total
1	Head of household	137
2	Total population	496
3	Male	255
4	Female	241

Source: Tanggerang Village (2009).

In terms of land area, it has a size of 2,581.30 ha, with the following distribution:

KAMPUNG	PURPOSE OF LAND	AREA/Ha
Pangkalan Pakit	Bawas	737.44
	Rubber Plantation	1,263.61
	Villages/Dahas	50.27
	Settlement	7.22
	Jungle	491.27
	Payak	31.50

Source: Participative Mapping (1988).

Dahas

The total number of dahas in Kampung Pangkalan Pakit keeps increasing from year to year, as shown in the following table:

YEAR	SOURCE OF DATA	NO. OF DAHAS
1998	Participative Mapping	50 Dahas
2006	Social Investigation	67 Dahas
2010	Research on Dahas	78 Dahas

Source: Participative Mapping (1988).

The increase in the number of dahas, while gradual, is a positive development. It also reflects the very long process of forming dahas, which requires intense management by the indigenous people. The table in the next page are the current dahas in Kampung Pangkalan Pakit.

THE CASES RELATED TO THE FOREST

Problems, Roles, and Functions

European colonialism signalled the arrival of capitalism which created a practice called *exploitation de l'homme par l'homme* or the exploitation of humans by other humans. In Ketapang Regency, the repressive manifestations of capitalism which started in 1993 continue until now, in the form of enterprises such as oil palm plantations and mining companies.[10]

The region of Ketapang Regency has been pawned to the investors. This is probably the most apt expression to describe the reality of what is happening in Ketapang now. The entire indigenous territory, which mostly belongs to the indigenous peoples, has been divided into lots for large scale investment licensing. Some of the licensed lots even overlap with the protected forest and production forest. With the coming Regent election on 19 May 2010, the indigenous peoples in the region are faced with issues that would adversely affect them. Their lands are parcelled for licensing without any coordination and without their consent. There are constant threats of seizure of, and eviction from, their lands and territories. The rights of the indigenous peoples are denied and violated because of greed and for the sake of so-called economic progress.

Such violations of indigenous peoples' rights are unfortunately perpetuated by local rulers and the government, as embodied in policies that benefit only the capitalist investors in the region. One such government policy is the Regent's Decree No. 247 of year 2001 on the Mechanism and Requirements of Large-Scale Plantation Business License in Ketapang Regency. The local government uses this policy to intimidate the indigenous

1. Sungai Samping	1. Kurungan	2. Sungai Muntai
3. Sungai Kusik	4. Selimah	5. Sungai Tanang
6. Sungai Pauh	7. Sempakuk Satu/ Sakun	8. Sempakuk Dua
9. Sekalangan	10. Sebambanan	11. Meraras
12. Selandai	13. Pancur	14. Petalian
15. Sedawak Garak	16. Pandaman Pintor	17. Puluran
18. Selandai Dua	19. Perentibangan	20. Senjenjamuan
21. Batu Pucung	22. Silubangnagakan	23. Sirip
24. Pulak	25. Sungai Nangkaq Satu	26. Sungai Nangkaq Dua
27. Sungai Nangkaq Tiga	28. Pesahangan	29. Sebunut
30. Danau Idor	31. Danau Idor Mudaq	32. Sepapal Tuhaq
33. Sepapal Mudaq	34. Pulak Satu	35. Pulak Dua
36. Pulak Tiga	37. Urauan Jambul	38. Seberuangan
39. Sekalangan Mudaq	40. Jelamuq Gudang	41. Semarak Sekaroh
42. Sebehuban Tuhaq	43. Sebehuban Mudaq	44. Batu Tunggal
45. Perasaan Badak	46. Sesawak	47. Sesawak Karui
48. Sesawak Mudaq (hilir dan Hulu)	49. Natai Jelutung	50. Pemanggungan Dinding
51. Murak Peratakan	52. Sungai Pauh Bebauk	53. Kebalahan Tajau
54. Pengetilaan	55. Perapas	56. Tetumpuk Tuhaq
57. Tetumpuk Mudaq	58. Bepinsang	59. Bukit Lawang Tuhaq
60. Bukit Lawang Mudaq	61. Sungai Ujuk Tuhaq	62. Sungai Ujuk Mudaq
63. Seriap Mudaq	64. Runtuh	65. Pelantaran Batuq Tuhaq
66. Pelantaran Batuq Mudaq	67. Beliun	68. Tabak Batuk
69. Sebatuan Tuhaq	70. Sebatuan Mudaq	71. Sebatuan Bukit
72. Separangan Tuhaq	73. Separangan Mudaq	74. Pandaman Seberuangan
75. Sereriaman Huluk	76. Sereriaman Ulak	77. Sereriaman Sanak

peoples, even as investors engage in massive campaigning for projects like oil palm plantations and mining companies in the region's hinterland where the indigenous peoples live.

The people face difficult options. Oppose and they are threatened physically, psychologically and economically by certain interested parties who are for the projects. Endorse the projects and they have to contend with the bitter experiences of poverty, crime, oppression and exploitation of those who live in mining communities and oil palm plantation areas.

Investors of these large scale projects conspire with bourgeois compradors to deceive the people with promises of employment, income augmentation, and alleviation from poverty. They employ divisive politics by buying off certain communities or individuals and turning them against those who have strong opposition to the projects, deliberately destroying the cohesiveness and togetherness of the people.

The Expansion of Oil Palm Plantations

The first plantation company operating in southern Ketapang Regency is PT. Harapan Sawit Lestari (PT. HSL), which began to operate a hybrid coconut plantation in Manis Mata. As the demand for palm oil increased in 1992, the company obtained a license to develop an oil palm plantation in the same location. In 1997, PT. HSL went bankrupt, which led to its acquisition by the Commonwealth Development Corporation (CDC), a state-owned British company. The company was later named PT. HSL-CDC. The company, whose share was owned by CDC, was under the British Foreign Development Ministry. CDC controlled the oil palm plantation in Southeast Asia through Pacific Rim Palm Oil (PRPOL) with total area of 730,000 ha in PNG, Indonesia; CDC oil palm plantation included Polimba, PNG, and Copra with an area of 160 sq km; oil palm Milney Bay in PNG with an area of 10,000 ha; HSL in Ketapang with an area of 25,000 ha, Asiatic Jambi with the area of 20,000 ha. In its next development, PT. HSL was acquired by Cargill (75%) and Temasek Singapore (25%). The oil palm plantation company owned by PT. HSL started its operation in Manis Mata District in 1993.

The company's first operation was located in Kampung Beriam Desa Manis Mata through the Rural Level Cooperative Bering in Jaya. As the company expanded, it dominated half of the total area of land owned by the people of Manis Mata District with its oil palm plantations in Kampung Air Durian, Gajah, Belian Sunsang, Bagan Kusik, Labuk, Hampul, Jangkit-Jangkit, Keladi, Kuala Asam, Asam Besar, Beriam, Tarahan, Seguling, Manis Mata. The company adopted Koperasi Kredit Primer Anggota (KKPA)—a type of cooperative, with areas of oil palm plantation in Bagan Kusik with location license covering thousands of hectares.

Since the beginning of its operation in 1993, PT. HSL has caused a lot of problems with the Manis Mata society, such as the seizure of land by evicting the people, burning the forest at night, the manipulation of the data of KKPA members, and the intimidation of the people. During its operation, the company did not pay the people compensation for lands that were occupied, and yet the plantation area kept expanding; the company also recruited more workers from outside the region, eliminated people's access to clean water sources, ignored the produce of local farmers, and in general, neglected the development of the communities around the plantation.[11]

Starting in Manis Mata, oil palm plantation companies expanded to other areas in southern Ketapang Regency region including the Districts of Marau, Kendawangan, Jelai Hulu, and Tumbang Titi. In Jelai Hulu District particularly, the introduction of oil palm plantation companies involved the seizure of the people's land on the strength of a license issued by the regency administration without any direct coordination and consent from the people.

For the Dayak Jalai people, large-scale plantations of a monoculture crop–the oil palm–will destroy biodiversity, thus threatening their livelihood and their identity which are both greatly dependent on a diverse, balanced, and healthy natural environment.

Mining Company PT. KWAM (a subsidiary of PT. HARITA)

The PT. Karya Wijaya Aneka Mineral (PT. KWAM) Group is an iron and ore mining company which has several operation areas by virtue of a concession given to them by the regency administration for operation in Jelai Hulu District, Ketapang Regency. The operation areas include Desa Limpang, Desa Kusuma Jaya, Desa Riam Danau Kanan, Desa Pangkalan Suka, Desa Air Dua, Desa Teluk Runjai, Desa Tanggerang, Desa Sidahari, Desa Deranuk, and Desa Periangan. This company is a subsidiary of PT. HARITA Group, and its headquarters are located in Kampung Tanjung, Desa Tanggerang.

During its early operations in this region, PT. KWAM approached the local people and engaged them in social activities. The company provided cars to fetch or take the sick from and to the hospital; donated cash or sponsored sports events; and facilitated the establishment of clean water sources for the villages. They also did many other activities that were intended to win the people's approval in areas where the company will be exploiting.[12] However, the people saw through the intentions of the company, fearful that the company will take their land if they allowed its operation in their areas. Most of the people still regarded this company as a threat to their land and their forests. However, in some areas of indigenous peoples, the company's strategy of social engineering proved effective and it was able to do large-scale exploration and exploitation of the forest.

The destruction of primary forest in the indigenous territories of Village Arai Duaq by the KWAM company.

Peoples of Kampung Tanjung and Arai Duaq jointly pioneered the village boundary line location is in Dahas Tumanang.

The plank board serves as the boundary between the indigenous territories of Kampong Tanjung and Kampong Riam Kusik. Majority of the population of the latter accept oil palm plantations.

Indications of Climate Change

Like in many parts of the world, the indigenous peoples in southern Ketapang Regency region are experiencing the effects of a changing climate. They say that the periods of both the dry and rainy seasons have changed that their occurrence are now difficult to predict. They also experience extreme weather conditions. When rainy season comes, the rivers overflow and flood the surrounding and downstream areas. During the dry season, the heat is getting more intense compared to previous years. They say that the duration of the dry season has also become unpredictable. Changes in the climate are more apparent every year, becoming a problem for the Dayak Jalai traditional communities.[13]

There are other emerging problems which they attribute to climate change. They say that it has become more difficult to hunt wild animals in the forest because the area of forest continues to diminish. Rivers are becoming polluted as the result of

the growing population. In farming, people have abandoned indigenous customs and traditions, resulting to more cases of blight. For example, the region has experienced locust infestation, which destroyed the crops for several years. Local people are now using more pesticides than ever before to manage their farms, which is in contradiction to their previous beliefs. Then there is the problem of forest fires which occur almost every year. As a result, some of the primary forest, *presasak* garden, *lakau mudaq, panggarak* and *pedahasan* forest have been burned leaving behind bare patches of land covered with tall, coarse grass.[14]

Forest fires occur almost every year during the dry season.

THE PERSPECTIVES OF DAYAK JALAI ON THE FORESTS

The Dayak Jalai Peoples

According to a research carried out by Institut Dayakologi, Dayak Jalai is a sub-ethnic of Dayak, which has its own language. They are distributed in three districts, namely the Jelai Hulu District, the Marau District, and the Manis Mata District in Ketapang Regency.

The Jalai peoples have never identified themselves as a part of any larger ethnic group, and their spoken history has not mentioned their relationship with any larger ethnic group either. They use the term *Jalai* to refer to themselves. Most of the *Jalai* who live in Kampung Tanjung and its surrounding areas are still relatively young, and they must have come from the older villages in the districts of Tumbang Titi, Marau, Manis Mata and even from Delang in the Central Kalimantan Province.

The geographical proximity of the communities of sub-ethnic groups Dayak Delang and Lamandau in Central Kalimantan and the Dayak Jalai may explain the former's influences on the language, beliefs, and customs and traditions of the Jalai peoples. In fact, the closer the villages of Dayak Jalai are to the center of these two communities, the more obvious are the cultural influences. This can be seen in the villages of Kampung Semenjawat, Pasir Linggis and Karangan Dangin, where the cultural influences of the two sub-ethnic groups are obvious. In Kampung Semenjawat, for example, there used to be a tradition called *mengayau*, a feudal administration style in the village, which is acknowledged as an evidence of a strong influence from Delang. This influence later spread to other nearby villages, especially those located along *batang arai* of the Jalai Kanan River.[15]

Kiriq Jalai River, a source of livelihood for Dayak Jalai communities at the Jelai Hulu District. The water empties into the Jalai River.

The Dayak Jalai peoples value their relationship with nature very highly. To them, their relationship and interaction with nature is like the two sides of a coin: one depends on the other; one's identity is determined by the other; the two relate with each other; and both have a vital role to play in their survival. They have a principle in life that has been passed down to them by their ancestors. It is a principle that speaks of ecological existence. The principle is *Hutan bajaluq, arai baikan, sasak bahundang*. It affirms that the existence of the Dayak Jalai peoples depends on the preservation of nature. The balance of nature according to the Dayak Jalai is how the *hehutan* (the forest) is preserved, ensuring the availability of livelihood sources such as medicine, food sources, beliefs and traditions among others.

Alius, a Dayak Jalai whose daily activities could not be separated from the forest.

The Local Wisdom of Dayak Jalai in Managing the Forest

Clearing the forest for agriculture is an important wisdom that continues to be practiced by the Dayak Jalai communities. They have followed the wisdom for generations without destroying the ecological balance.

The Dayak Jalai's use of the forest is based on the following classification: (1) Rimba matuq Forest (reserve and conservation area); (2) Jumpung/Papulau Forest; (3) Pesapingan Forest (the border of people's *lakau*); (4) Lakau Mudaq Forest (used farmland); (5) Lakau humaq (the farmland which is being cultivated); (6) Panggarak Forest; (7) Kebun Presasak Forest (rubber plantation, coffee plantation, etc.); (8) Pekampongan Forest (fruit plantation); (9) Dahas; (10) Pamaliq Forest (sacred forest); (11) Itung Arai (river spring area); and (12) Pasar Pandam Forest (cemetery).[16]

1. Rimba Matuq Forest

This forest is also called the Jungle Expanse. This is the type of forest that has never been exploited and is still very vast. In this *hutan matuq*, there are various organisms, which live and breed freely, and become parts of the abundant natural resources. This *Rimba Matuq* is a conservation area, reserve forest, hunting area and building material source area. This forest is also referred to as *Rimba ruyun rimba matuq* by the Dayak Jalai peoples for its vast area.

Rimba Matuq Forest located in Dahas Tumanang.

2. Jumpung/Papulau Forest

This forest is also called Jungle Island. This Jumpung forest is the jungle that is made to resemble an island by the indigenous Jalai peoples. The forest is usually surrounded by *lakau mudaq* (used farmland). The Jalai peoples create this forest as the conservation area, agricultural field, and source of wood for housing, and which is reserved for future generations. This forest is usually located in hilly land (*mungguk)*.

Jumpung or Papulau Sigaraman Hill that is preserved since it contains abundant natural resources.

3. Pesapingan Forest

This forest is also called Jungle Island. This type of forest is deliberately left intact or reserved to mark the border of one's own farm or the border between one's own farm and other people's farms. If the location of *pesapingan* borders other people's farms, it only occupies a small area it being a boundary.

This forest serves as a divider between farms.

4. Lakau Humaq

Lakau is the farmland where people plant rice and other crops such as corn, *jawaq*, sweet potato, cassava and other kinds of vegetables. The shoots of some trees in a Lakau can also be used as food: bamboo shoots, *jengkol* (Pithecolubium) shoot, *leban* shoot, *jelayan*, etc. Rubber is planted in Lakau, which is expected to turn into a plantation. Lakau or farm is at the heart of Dayak Jalai's economy and culture because it serves not only as the source of subsistence crop but also as an important ritual site in the Dayak Jalai culture.

As the economic resource, the farmland is the starting point of long-term and short-term farming activities. Short-term farming is intended to fulfil the need for rice and vegetables. For long-term farming, the farm will develop into rubber plantation, fruit plantation, and investment forest like *lakau mudaq*, *penggarak* forest, and *pedahasan*. New communities evolve out of the farmland. Even the history of *kampong benuaq* in the Dayak Jalai peoples began with this farm.

A Dayak Jalai woman is harvesting in her own farm.

In determining their farming location, the Dayak Jalai peoples strictly adhere to tradition and their local knowledge—they have a set of criteria or rules that they follow in determining an ideal farming location. Decisions are made based on the following considerations:

a. The forest that will be converted into farmland must not be the area of *pamaliq* forest (sacred forest), fruit plantation (*kampong kayuan*), rubber plantation and other people's *lakau mudaq*;

b. The forest that will be converted into farmland is a jungle, either an existing *rimba matuq* forest or *rimba jejumpong* or *pepulau* forest, reserved for farmland;

c. The forest that will be converted into farmland is the *panggarak* forest which almost grows into a dense forest, but does not have various productive crops such as fruits and rubber. This forest is reserved for a farmland area;

d. The forest that will be converted into farmland is also a *lakau mudaq (bawas)* forest, which does not have various

productive crops such as fruits and rubber. Usually, the activity of farming in this forest, which is about 3 to 5 years old, is called *menikas* (farming in *lakau mudaq*). But when the forest is older than 5 years, the farming activity is done by following the usual indigenous farming ritual procession.

Sanjaliq plants grown together with rice in the fields.

5. Hutan Lakau Mudaq

This forest is also called *bawas* forest. This type of forest is the location for recyclable farmland, which is being cultivated or in recess. The Indonesian government, academicians and non-Dayak peoples call it shifting farming, an ethnocentric terminology which insults and hurts the feeling of Dayak peoples. This *lakau mudaq* forest can be classified into three phases:

a. Lakau mudaq berahuk. This type of forest is between one and three years old. It can be recognized from the kinds of plants that grow here. The plants are still very young and most of them are those planted when people first cultivated the farm, such as sugar cane, ginger and sweet potato. This forest is called *menikas* once it is cleared for farming purposes.

b. *Lakau Mudaq Mamat.* This type of forest is between three and five years old. The plants in this forest are young and begin to grow taller and bigger; bush (*mamat*) can still be found in this forest;

c. *Lakau Mudaq Garas;* This type of forest is between five and 20 years old. The vegetation in this forest has grown fully, and with no bush growing on the ground (*garas*);

Mamat Mudaq Lakau forest conditions that are still bushy.

6. Panggarak Forest

This type of forest has never been cultivated as farmland by the Dayak Jalai peoples, and it is not planted with productive crops. This forest is not cultivated by its owners because it is meant to be a reserved farmland. Usually, when its age has reached 20 to 30 years, it will turn into a moderately dense forest, and eventually become *Rimba Matuq*. There is a saying which goes "*lakau mudaq* has passed, yet *rimba* has not arrived." For the Jalai peoples, this forest has very good soil fertility, which produces abundant crops once turned into a farmland. Aside from soil fertility, the proximity to the village is another consideration.

A panggarak forest that will evolve into a jungle.

7. Kabun Presasak Forest

This forest is a new concept which was first developed at the time of Dutch colonization and the introduction of Christianity into Kalimantan. It is not clear when the development of rubber plantation began and who started it in the Dayak Jalai region, but it is from that point in time that the Dayak Jalai peoples started to develop this commodity crop. Rubber is planted to provide the people with money for their daily needs. This crop is planted after the work for main crop has been completed. Then after the harvest, the people will just need to take care of this plantation crop. The rubber plant can be planted on the same farmland as the other plants, so that it is called *kebun prasasak* (multiculture). Natural rubber can grow together with other plants grown by humans or from the forest itself. Nowadays, natural rubber has become a commodity and an economic resource for the Jalai peoples.

Presasak plantation forest. Natural rubbers grow together with various other plant species.

8. Pekampongan Forest (Kampong Kayuan)

This forest is also called fruit forest. The villages are part of the land, which is planted with a number of vegetation (various types of fruit trees). In the tradition of Dayak Jalai, when they cultivate a particular area, they will build temporary huts. The huts will be surrounded by fruit trees—either short-lived or long-lived ones—which they plant. This type of fruit forest also evolves, along with other types of vegetation.

Kakaliq fruit plants that grow in the pekampongan forest.

Mentawaq fruit (durian trees are a symbol of the main fruit in the pekampongan forest).

9. Dahas

This area is used as a settlement area. Besides houses, there is also a *jurung*, i.e., the land used for building rice barns. These barns are usually separated from the houses. Also in some parts of this area, there are cages for animals like pigs and chickens. In the past, these cages were located under the house; now they are located behind the house, 10 to 20 metres away. In this settlement area, one can find rice mill machinery, a generator and rubber mill machinery. These are located away from the dwelling houses. Also in the *dahas* area, there are *pekampongan* forest and *kebun pesasak*. This *dahas* area becomes the centre of forest area management by the Dayak Jalai people, a source of their livelihood and integrated in their economic, social, and cultural life.

Dayak Jalai living in dahas Tumanang.

10. Pamaliq Forest

This is also called the sacred forest. This forest contains sacred things, which can take many forms such as the forest area, rocks, wood, and the bay in the river, and so on. Regarded as a holy place, this forest must not be cultivated or exploited. Inside the Pamaliq forest, plants grow freely like in the jungle. This forest is the centre for prayers and offerings. It is preserved and must not be cleared for farmland. People who do not obey and cultivate the forest will meet tragedies and disasters.

Forest Pamaliq Silatakan, considered haunted by the Tumanang Dahas community.

These bekukup stones are considered sacred and are believed to have mystical powers by the Tumanang Dahas community. The forest where these stones are found is preserved.

11. Itung Arai Forest

This forest has an abundant source of water in the form of springs. It is forbidden (*pemaliq*) to use this area as farmland. Converting it into a farmland will disturb the ruler of heaven and earth, and disturb the balance of nature, and the farmland will not give high yields. Like the other communities, the Dayak Jalai peoples use the spring or river as the source of clean water—for drinking, bathing, washing and fishing.

An Itung Arai Pebatuan forest in Dahas Tumanang.

12. Pandam Pasaran Forest

This forest is used as a cemetery. It has been the tradition of every community to have a cemetery in the settlement area. The cemetery forest is located near the settlement centre, and it must not be used for other purposes. There are a lot of big trees in the cemetery, which is a highly respected place for the Dayak peoples.

DAHAS AS A CONCEPT OF INTEGRATED NATURAL RESOURCE MANAGEMENT

This chapter discusses dahas as an indigenous system of integrated natural resources management. It is a reflection of the Dayak Jalai peoples' wisdom in protecting and conserving nature. This system has been practised long before the state of Indonesia was formed.

The Dayak Jalai refer to dahas areas as pedahasan, indicating that the area is a centre for agricultural and economic activity for its owners, characterized by the presence of many different types of fruit trees and other beneficial trees. Because of this, a dahas becomes an alternative residential settlement place for a family (who also lives in a kampong). Thus, semi-permanent structures for shelter or places to stay are built because of the farms. When they settle, the dahas owners normally bring pets with them.

The concept of dahas shows that Jalai people do not engage in shifting agriculture. The Jalai people tend to settle in pedahasan area and conduct agricultural activities that are integrated with other economic activities. This pedahasan is permanent, and is passed on from one generation to the next. A younger generation may opt to farm and open a new dahas somewhere, but they are expected to continue to maintain the old dahas. In case family ownership becomes unknown, the dahas will belong to the people of the entire village.

Dahas also integrates the spiritual life of the Dayak Jalai. Ritual is performed in every stage of forest management in a dahas. For the Dayak Jalai, forest, soil, and water are natural elements, each of which has its ruler; therefore, indigenous rituals must be performed in order to avoid the worst possibilities that may happen to them. The Jalai people strongly believe that this is one way of maintaining harmony between human beings and the universe.

Process of Dahas Formation

The formation of dahas is a mixture of natural concepts and the will of man. It is a long process and not an easy one, as described below:

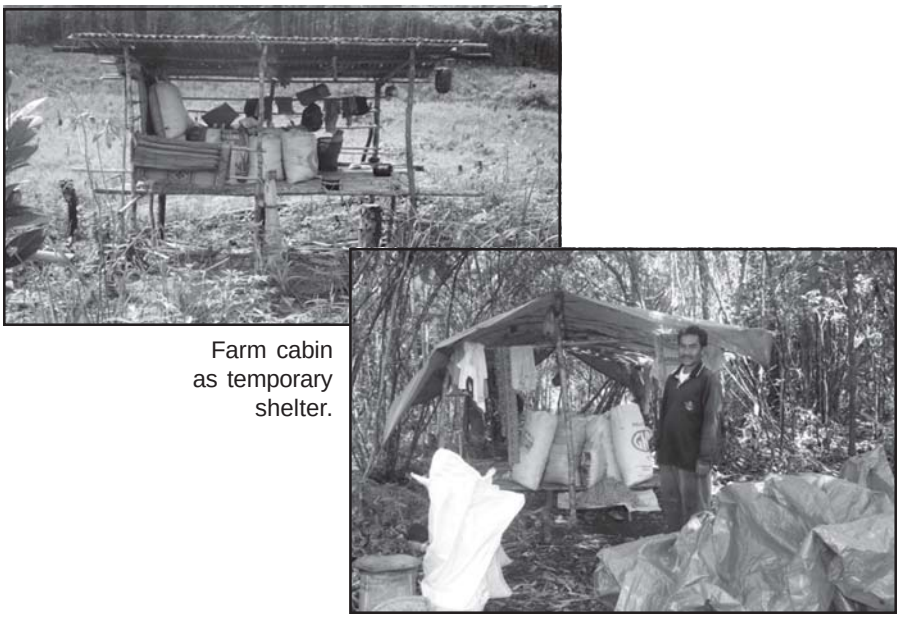
1. Ladang (Lakau Humaq)

The process always starts with the clearing of a forestland for farming, called *Belakau Behumaq*. This lakau later becomes the embryo for the establishment of dahas. In the process of clearing land for farming, they perform a ritual (menyandam) to ask for blessings from Duataq (God). The ritual also provides some time for others to make any claims on the land. Duataq's blessing is determined from clues or signs (good or bad) from the natural surrounding while clearing the land. A good sign means they can proceed with the clearing the land for farming. In lakau, the main crop grown is rice. Traditionally, the Jalai people grow the following rice species: Pengalaran Rice, West Rice, and Head Rice. However, there are many varieties of these rice species. Other crops are also planted. Examples include rice and local cucumber, baluh (water pumpkin), long beans, sensabiq, corn and many more.

Fields are economic and cultural expressions for the Dayak Jalai.

2. Cabin of Farm (*Punduk Lakau*)

When lakau is being *ditugal* (planted) with rice seed, the owner of the field will make temporary cabin. This cabin will remain there until the end of the harvest season as a shelter. Usually, the owner of the farm builds it in strategic places, like near a water source (river/lake); it can also be at the edge of, or at the middle of the rice field. While waiting for harvest season, the owner plants various types of productive plants, such as *areca nut, betel leaf, banana, pineapple, coffee, coconut, durian, rambutan, langsat, kusik, sedawak, pekawai, teratungan, fruit saniq, paoh acid, kalimantan, hambawang, tengkabang, Satar, tabadak, warts, Sanggau, sibau, kariataq, duku, mentawaq, kapul, kakaliq, jackfruit, bangkul, lembacang, yeyabaq, kerimbaian as lime, malui*, etc. Planting seeds of various crops are usually done according to season. The cabin serves as a shelter for the owner and allows him to control and supervise his farm directly from Benuaq (village). Normally, each time the owner comes to his farm, he or she will stop at the cabin to plant various crops.



Farm cabin as temporary shelter.

3. Housing (single house)

After completing the first year of harvest, the owner will make another farm at a location not far from the original field. The owner will then build a permanent house and a jurung (warehouse). This house is occupied like a house in the village. But the family's stay in that house is not yet permanent. Sometimes they also go to their home at the Benuaq (village). The family will now start keeping pets and animals such as pigs, chickens, dogs, and cats; the owners also improves the vegetation around the area. While tending his farm, the owner increases the variety of productive crops that he plants in the area.

Housing before evolving into dahas.

4. Dahas-Dakar

There is very little difference between the process of building a *house* and *pedahasan.* Building a house is investing on economic resources for the future. The house will eventually develop and evolve into a *dahas*. The evolution from housing to dahas is seen in the planted crops which are getting bigger around the pedahasan. Trees grow bigger and some of the fruit plants start to bear fruits. At this stage, the owner of the dahas starts to settle and live in the area.

The sustainability of Dahas as a natural resource management system is apparent in the cycle that it goes through: starting from a jungle, it is turned into a farmland; then it develops into *mudaq lakau*, which later becomes a *penggarak* forest; then it develops back into a jungle.

A dahas has the following characteristics:

a. It is intensively inhabited or occupied, complete with housing;

b. It has a forest that contains various types of fruits (pekampongan);

c. It has the most important timber species;

d. It has *hayam ingoan* (livestock animals); and

e. It has many varieties of forest types such as jungle forest, *pepulauan* forest, *prasasak* garden forest (garden), *lakau mudaq* forest (*bawas*), *panggarak* forest, *pamaliq* forest, *itung Arai* area, and graveyard.

In Dahas Tumanang located at the border of Kampung Tanjung and Arai Duaq, the management is made simple by classifying an area according to its use: fruit garden (durian, mentawaq, langsat, rambutan, and many other fruits); sacred place (Sigaraman Hill); natural rubber garden; farms; area for animals (pigs, chickens); and the settlements (occupied by 5 families who are blood relatives).

The Dahas Tumanang owners live by the principle of sharing the abundance of harvest. When durian season arrives, many people come to this dahas, even at night, to harvest. The owner does not prohibit this as long as the people follow some rules: take fruits in reasonable amount; do not damage the plants; do not pick fruits by climbing up the trees; and do not trade or sell them for profit. The people who usually come to this 3-generations-old dahas are from the neighboring villages of Kampung Tanjung and Arai Duaq.[17]

Residential model of community at Dahas Tumanang that integrates with nature.

Dayak Jalai family who lives in Dahas Tumanang when together.

Sketch of Forest Management System (Land Use) of Pedahasan

The Development of Dahas[18]

The development of dahas may be described in two stages, namely *Dahas Mudaq* and *Dahas Tuhaq*, and this is based on the level of patrilineal ownership. It is possible for a dahas to grow into *Benuaq* (village). Most of the Dayak Jalai villages started from pedahasan then grew continually to form separate entities even though they remain in the same communal bonds.

1. Dahas Mudaq

A dahas is referred to as *Dahas Mudaq* based certain criteria. The first has to do with the length of the line of descent from the pioneers (that is, those who first formed the dahas). If the pioneers are still alive and are the ones managing the dahas, then it qualifies as *Dahas Mudaq*. The second involves the quality of the crops. It is considered a *Dahas Mudaq* if the crops remain infertile despite being of old age. The normal age of a *Dahas Mudaq* starts from three and usually lasts up to 30 years. Ownership and management are either by individual or by a single family (husband, wife and children).

Dahas Mudaq is generally characterized by fruit trees, reproduction of various kinds of vegetation be it fruits and productive wood, and expanding farmland. A *Dahas Mudaq* also classifies as a *panggarak* forest.

2. Dahas Tuhaq

A *Dahas Tuhaq* is one whose management has already passed on to several families, generations after the pioneers who first managed the dahas. Dahas descendants must have also added new dahas (*Dahas Mudaq*) which comes from the development of this *Dahas Tuhaq*. *Dahas Tuhaq* is generally characterized by the following: the tree forest and *pekampongan buah* are evolving back into a jungle, fruit trees have been enjoyed for several generations, dahas area increases by adding new dahas, and has already reached hundreds of years.

In its most advanced stage, a *Dahas Tuhaq may result to a new dahas, the Dahas Lambat.*

The development from *Dahas Tuhaq* to *Dahas Lambat* is not a setback, but rather a process of development in the context of an expanding dahas area. In this stage, *Dahas Tuhaq* is no longer possible to live in, where the vegetation in the surrounding areas have grown large enough to possibly cause harm to the dahas residents. In this case, the dahas community makes new dahas, called *Dahas Lambat, which is* not far from the old dahas. Even though the community moves out of the old dahas, maintenance by the dahas owners continues.

THE DAYAK JALAI'S CONCEPT OF POSSESSION AND OWNERSHIP[19]

The Dayak Jalai's perspective of the world, their customs, social, political and economic structures, and spirituality are reflected in the practices of ownership or possession of a territorial area. Theologically, Dayak Jalai people believe that the world was created for the benefit of humankind. In the context of the philosophy of creation stories (*Bidik Manggaling*=creation of the first humans), humans are not allowed to disrespect the universe. Therefore, rules were invented to govern the relationship between man and man, man with his group, people with their creator and man with his environment. These creation stories and the establishment of institutions and forms of institutional adjustments, including the history of the succession to power of indigenous leaders in the past, point to the independence and autonomy of the Dayak Jalai—a sovereign sub-ethnic group with definite territory, and vibrant political, social and religious institutions.

A common perception prevailing in Indonesia is that indigenous peoples do not have individual land ownership systems. Because of this, lands owned by indigenous peoples are designated as communal property. Armed with this argument, private and government companies do not compensate those indigenous people whose lands these companies have expropri-

ated. Instead, the companies argue that public facilities put up in these areas are enough compensation to the affected indigenous communities.

Such generalization is not suitable in Kalimantan. Firstly, the lands in the territories of indigenous peoples are not communal lands. The word "communal" refers to a term used by the colonial government. Secondly, communal means public and public means open for everybody. On the contrary, land rights of indigenous peoples are inalienable and enduring (that is, lands may not be handed over to people who are not members of the indigenous community).

In the Dayak Jalai tradition, dahas management concept is closely related to the system of land ownership and possession that includes: (1) Ways to obtain ownership rights on lands; (2) Types of rights on lands; and (3) Evidence of ownership.

1. Ways to Obtain Ownership Rights on Land[20]

a. Lakau Humaq

To obtain ownership of land, a person must clear the primary forest by making farms. In the process of *belakau behumaq*, most farm owners do it through *bejuruq bebarai* or *baanasiq* (mutual help and cooperation). In addition to fostering a spirit of togetherness, social relationships, networking and maintaining culture, *bejuruq bebarai* also functions as an economic means of mobilization of work force. Moreover, *bejuruq bebarai* functions as an oral listing to obtain recognition for the person who has cleared a new land in a particular area. To better indicate ownership, the boundaries of the land are planted with fruit trees and natural rubber. As further evidence of ownership, dahas is made as a centre for this economic resource. As a resource that can be passed on to future generations, the dahas is an effective marker of ownership.

b. Inheritance

In Dayak Jalai families, the heirs will usually take over the properties of the parents. Properties that may be inherited are found inside the *dahas-dakar*, like the *mudaq lakau* forest, forest *panggarak*, *pekampongan* forest, the *papulau* forest and other resources.

c. Duman Bagiq Pampap Balah and Pa'angkatan

One can also acquire rights of ownership to land through *duman bagiq pampap balah*. In this case, the land is given as a gift because of love, as recognition for services rendered, or because of mercy. On the other hand, *pa'angkatan* guarantees that a stranger or a local person, who is adopted by a family, may also be provided with a piece of land for farming.

2. Kinds of Rights on Land Ownership—Possession[21]

The Dayak Jalai recognize individual ownership and collective ownership. However, the concept of ownership and possession of a *pedahasan* area recognizes a mixture of individual and collective rights. Rights on an area covering lands in the *dahas* are rights based on a line of descent. This means that ownership rights on an area having a variety of economic resources cannot be given to an individual who is not covered by local customary law or is outside the patrilineal lineage. According to the Jalai people, the rights of ownership are a pattern of mutual relationships between individuals or groups with a pedahasan area and all the resources within. Therefore, selling or granting of land in the pedahasan area to those outside the community is strictly prohibited. In the Dayak Jalai tradition, there is no concept of land transactions.

a. Lineage-based rights

The right to own land based on lineage is a result of rotation from individual ownership to collective ownership. Ownership of a pedahasan area exists due to inheritance, such as *pekampongan buah*, *kebun presasak* (gardens of rubber, rattan, etc.), as in the case of *Dahas Tumanang* which has been managed by six generations. This *dahas* began with an old man named *Upui Tumanang* who first opened a farm in this area (he is considered the founder of *dahas Tumanang,* and was thus named after his last name). This dahas was passed down to *Upui Pinat* and *Silabang*, then to their eight children with the oldest named *Sikasur;* after Sikasur, the dahas was handed down to his three children with the oldest named *Heng Asik*, who is still alive and has lived in *Dahas Tumanang* with his three children, grandchil-

dren and great-grandchildren until today. This means that there have been six generations that have managed *dahas Tumanang*.

b. Sole Rights

In *pedahasan* management principle, individual ownership on an area of *pedahasan* is a right held by a single Dayak Jalai person. The sole right is usually valid if the *dahas* owner is not yet married. This right of sole ownership can be obtained through several ways, one of which is through the process of clearing forests for agricultural farming (*belakau behumaq*) and *presasak* garden.

c. Collective Rights

Collective ownership is operative over a *pedahasan* area that is owned by more than one person. This right can be the right between husband and wife, children, grandchildren, and great-grandchildren belonging to one line of descent. Even if the *pedahasan* has gotten larger and has lasted for several generations of descendants, the right of ownership is based on the concept of *sedomong sebenuaq* (collective ownership under the same customary leader of the village).

3. Evidence of Dahas Ownership

The Dayak Jalai people's evidence of ownership is not written in a piece of paper or through the possession of a land title. For the Dayak Jalai, ownership is affirmed through traditional methods.

a. Recognition

Recognition is an important evidence of ownership for the Dayak Jalai people. The most powerful recognition is the one that comes from the individuals, especially those whose land is directly adjacent to the dahas or land owned by others. The second powerful recognition is the one that comes from members of the community, by affirming that a person (individual) has planted vegetation (fruits, rubber plantations of coffee, etc.) on a particular location. The third recognition is the one that comes from *Damung Benuaq*, affirming ownership of the land and the vegetation in the area.

b. Residential Area

The existence of residential houses is a valid evidence of ownership of *dahas*, including the existence of *jurung* (rice barns) that are separate from the houses. Other elements in the residential area may also serve as evidence of ownership. Around the residential area, the *dahas* owner also breeds *hanyam ingoan* (livestock animals) such as chickens, pigs. The cages of *hayam ingoan* are usually made of existing natural resources such as wood and bamboo, and the cages are located under the house, or behind the house. The presence of rice milling and rubber grinding machines may also be used as proof of ownership.

c. Pekampongan Buah (Kampung-Kayuan)

Pekampongan is another form of evidence of ownership based on planted fruit trees in a particular area. In general, fruit trees are planted around the settlement cabin. If a new farm is opened in an old dahas, the area where the original fruit trees have been planted is retained. Similarly, descendants who have inherited the dahas are expected to maintain the fruit trees. Because of this, fruit trees become evidence of ownership over the *dahas* area. Today, natural rubber is added to the fruit trees as additional evidence.

RITUALS AND CUSTOMARY LAWS FOR FOREST MANAGEMENT

Rituals for Managing and Restoring the Wholeness of the Universe

> *Langit bapanungkat tinggi, tanah bepenggalang dalam, Duataq di pucuk menculit, di bawah menengadah.*[22]

The excerpt above means that the entire universe is ruled by God, and human beings have to ask permission for its use. For the Dayak Jalai, the universe has a soul and spirit that must be kept, maintained and respected. To them, this means that

their indigenous territories should not be damaged, expropriated, or even sold to outsiders.

Rituals pervade the life of the Dayak Jalai. In the event of any imbalance (for instance, occurrence of plague; *nikah sumbangkapan* or incest; or expropriation of indigenous territories by large scale companies), rituals are held to reconcile with the universe and to restore balance. The appropriate ritual to be held is a decision made by an indigenous shaman (*dukun*) and the elders of the community. The various rituals are a manifestation of Dayak Jalai's wisdom pertaining to spirituality, the environment and culture, all of which are at play in the maintenance of the wholeness of the universe.

Below are examples of rituals for the various agricultural activities of the Dayak Jalai. These rituals have been passed on from one generation to another.

Menyimah Tanah[23] is a ritual for hunting where vital organs (e.g., liver and heart) of the hunted animal are offered and shared to the "nature Lord" by placing them on the ground. This is a way of informing "nature Lord" of a successful hunt.

As a central livelihood activity, the Dayak Jalai have several rituals for rice farming. *Baabuang hulat* is performed to protect the rice and other plants from plague and pests; *Baansabatan* is a ritual held yearly where all the members of the community eat together; it is performed before harvest time and serves as thanksgiving for the new harvest; and *Menyapat tahun* is another annual ritual conducted some time after harvest, and serves as a marker to the farming cycle. The Dayak Jalai believe that before this ritual is performed, the people may not open land for farming for the following year or else they will suffer from disasters (accidents during land preparation, plague, or fruitless harvest).

Ambrosius Djamil, *Damung Adat* of Tanjung Village, leads the *Baansabatan* ritual.

During the fruits season, *Menjangkap Buah* is performed to protect those who climb or harvest the fruits from any accident or danger, and to ensure that the fruits are not harmful to the people. Before this ritual is performed, certain things are forbidden like climbing the fruit trees.

Menubak Adat is another ritual that is performed to request the *Duataq* to give rain during a prolonged drought, and prevent disasters from happening. The ritual must be done through the process of *betarak betapa* (meditation), which lasts for three days and three nights.

Menubak Adat: an elder is praying for rain.

An important ritual is the *Babantan* Bapujaq.[24] For the Dayak Jalai people, the forests, lands, and water have breath and soul that must be protected and cleansed. This is done through the conduct of *babantan*. The people believe that once the *babantan bapujag* ritual is held, the forest will have hordes of animals, the water will have abundant fish, shrimps will have lots of spawn in the rivers, and the rice farms will produce bountiful harvests.

The *babantan* ritual is presided over by a *kepala bantan* and lasts for three days and three nights. Prior to the ritual, the *kepala bantan* undergoes meditation and fasting so that the purpose of the *bebantan* ritual is granted by the *Duataq*. During the ritual, the people are forbidden from installing *pekarangan* (hunting traps) both on land and in the river.

Other rituals are held for various reasons. *Beniat Begalang* is performed to ensure the health and security of the community (e.g., prevention of diseases and natural disasters), while *Brasih Benuaq*[25] is performed to protect the village from various con-

cerns: the threat of plague; pregnancy outside of marriage; or the entry of destructive projects and companies.

There are similarities in the way these rituals are performed. Part of the preparations include a meeting between the presiding shaman and the elders to agree on the time, place, and the cost entailed by the performance of the ritual. They determine the offerings for the ritual, which normally include rice wine, rice, vegetables, side dishes, chickens and pigs. Decisions arrived at are disseminated to the community and to the persons who will be involved in the ritual. In some instances, the community also makes financial contributions to cover the needs of the ritual. On the average, the duration of these rituals ranges from two to three days.

There is one moment in the performance of each of these rituals that highlights the people's mindset about their environment. It happens before the ritual even begins, when an 'announcement' is made to the forest, land, water and river. The ritual of announcement may be in the form of offerings and playing of drums. Not surprisingly, some of these rituals culminate by looking for signs to indicate that the intentions of the ritual are accepted by the forest, land, water and river.

Dayak Jalai Customary Laws for the Protection of the Forest[26]

For generations, the Dayak Jalai people have implemented a set of customary laws to protect forest areas in their indigenous territory. For instance, strangers coming to their indigenous territory to conduct surveys for large-scale plantations and mining can be summoned by the people according to prevailing customary laws.

The following are customary laws pertaining to forest-related violations in Dayak Jalai territory.

1. Curuk Tunggul Lompat Batang. This is imposed on someone, whether a member of the village or from the outside, who enters a private land or a Dayak Jalai territory without prior notice;

2. Pancung papat pajuh bilai. This law is imposed on someone who enters an indigenous territory without prior notice, and who intentionally or unintentionally cuts down vegetation in the forest;``

3. Ansang langgar ngayau libuh. This customary law is imposed on someone who enters an indigenous territory without prior notice, and who has been warned not to conduct any activity that is harmful to the forest;

4. Tindih timbal rabut rampas; This customary law is imposed on someone who enters a territory and uses land that has previously been used by others, with the intention of expropriating the land without prior notice or discussion with the former owner;

5. Tindih timbale cintan curiq. This customary law is imposed on someone who enters an indigenous territory and does destructive activities; this is equivalent to having evil intentions and may be considered as a form of stealing or expropriation of other's belongings without prior notice to the owner;

6. Dara diumbungan. This customary law is imposed on someone who enters an indigenous territory and does harmful acts on the vegetation such as felling the trees of *durian, tengkawang, kusik, mentawaq, langsat*, and other investment plants of the people. This comes with a fine as compensation for the destroyed vegetation; the amount of the fine is in accordance with the expenses incurred during the production period.

THE LEADERSHIP SYSTEM OF DAHAS

There is an old proverb that always figures during indigenous rituals. It goes: "*Dahas betuhaq, banuaq, badamung, pangkalan bepengarah*" (Dahas has a leader, a village has a chief/"Damung" and a bathroom). The proverb reflects the leadership system among Dayak Jalai people.

According to Bamba (2003), the Dayak Jalai's indigenous governance structure has no paramount or highest leader for the *Benuaq* (several villages joining together). Each *benuaq* has a

its own autonomous leader called *Damung*. In Dayak Jalai, there is a leader called *Damung puluhan*, but the term does not imply territorial authority over several villages (in this case, the term *puluhan* refers to just one *benuaq*).

The Kedamungan system in Dayak Jalai's Indigenous Institutions[27]

There are several levels of *kedamungan* system in the *kedamungan* history of the Dayak Jalai.

1. Damung

A *benuaq* is led by a *Damung* who is responsible for the observance of a number of customs and traditions, and in the implementation of indigenous laws inside the territory. Damung also represents the people of benuaq in dealing with outsiders. In an indigenous trial, a damung acts as a judge who facilitates the proceedings (in an indigenous trial, all members of the community who are present, whether or not involved in the case, have the right to talk). In the administration of a *benuaq*, a *Damung* is assisted by a deputy who is called a *kebayan*. In turn, a *kebayan* is assisted by *katuhaqs*.

2. Kepalaq Bantan

In implementing the customs and traditions of the Dayak Jalai, a damung who is the administrative leader in *benuaq* is assisted by a *kepalaq bantan* who is in charge of taking care of coordinating all the customs and rituals in the village. In rituals, the kapalaq bantan is the person who leads and conducts *tautaumamang, sangan caritaq* (praying and telling of stories).

A *Kepalaq bantan* is assisted by several individuals. A *Pemukah Lucung* is someone who is in charge of coordinating the collection of sulang and lucung (the main materials in Ancak). A *Pemarang Buluh* is someone who is in charge of coordinating the collection of various kinds of bamboo that are needed for rituals; a *Pehuyang Tentabus* is someone who is in charge of coordi-

nating the collection of tentabus and a *Pe-atur Ancak Jejalaq* is someone who is in charge of the various kinds of offerings.

The Damung, Kepalaq bantan and all the assistants are democratically chosen by the members of the community in an indigenous meeting. Selection is generally based on the ability and interest to serve the village.

3. Balin

A *Balin* or *Balian* is another figure who is also important and influential in benuaq. Organizationally, a *balian* is not subordinate to the *damung*—he has an autonomous authority in holding his *balin* customs. In fact, a *balin* has bigger authority than a *damung* because the former can perform his rituals whereever he is. The authority of the *damung* does not go beyond the village. Once outside of his territory, he has to comply and respect the customs and practices of the village where he is at.

4. Mantir

In addition to the d*amung*, *kepalaq bantan* and *balin* or *balian*, the *mantir* is another important figure in *benuaq*. The mantir who gets appointed by the *damung* based on his ability, is in charge of controlling and managing the sustainability of *adat jalan jamban titiq* (customs).[28]

The Leadership System of Dahas[29]

In a *dahas* community, the leadership system is not the same as that of a *benuaq*. However, a *dahas* community becomes a part of the indigenous leadership system if its territory is within the *damung benuaq*. In such a system, the *dahas* community is led by a *Lawang* group or family head. In practice, there may be several *lawangs* in a *dahas* that become members of the *damung banuaq*'s administration.

Leadership in a dahas comunity rests on the elders who have indigenous ability and knowledge of *jalan Jamban titi* (customs). They are considered wise and have lived in the *dahas* for

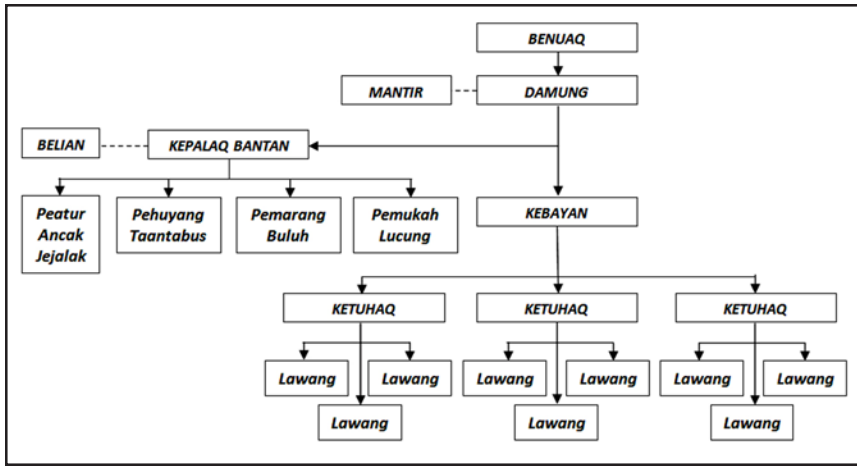
a long time. Often times, they are the most senior of the *dahas* founders. Despite the absolute leadership of the elders, decision-making involves the entire community, and decisions must go through a discussion with all the members of the dahas. The leader of dahas conducts things for the benefit of the community and every decision is made after considering the opinion of the people. In principle, a *pedahasan* is the responsibility of the entire community, not just that of the leader of dahas. Whenever necessary and appropriate, decisions within the dahas are reported to the *Damung Banuaq* by the leader of the dahas.

Such a leadership system was practised at *Dahas Tumanang*, at Tanjung village, in 2009 when they faced a mining company that wanted to appropriate their lands and forests. It began when a staff of the mining company, PT. KWAM (a subsidiary of PT. Harita that operated in Benuaq Dayak Jalai in Jelai Hulu sub-district), was caught by a member of the *Dahas Tumanang* community conducting a survey in *Pedahasan Tumanang* territory without prior consent. The people of *dahas* reported this violation to the leader of the *Dahas Tumanang*, who then called for a meeting which resulted to a decision to stop the activity of PT. KWAM and secure the equipment used by the surveyor. They also brought the mining staff to *Dahas Tumanang* and were allowed to leave after some questioning from the community.

The Dahas Tumanang leader reported this case to *Damung Benuaq* and agreed to solve the problem in accordance with indigenous law. PT. KWAM was eventually found to have violated indigenous law and the company was asked to pay the community. In this case, the company committed four violations:

1. *Curuk tunggul lompat batang* (not asking for a prior consent from the community);
2. *Pancung Papat Pajuh bilai* (destroying the plants); punishment imposed for this violation was in accordance to the type of plant that was destroyed;
3. *Ansang langgar nagayau libuh* (categorized as a violation on human rights of Dahas community);
4. *Rampas rabut tindih timbal* (appropriation of other people's property).

The Structure of *Dahas* Leadership



CONCLUSION

The 1992 Rio Summit on Sustainable Development and the resulting agenda for sustainable development created hope for the future of our environment and our planet. At that time, many believed that the Summit would lead to concrete policies and programmes that could overcome the environmental crisis that the world was facing then. Unfortunately, the agenda encountered two obstacles. One was the issue of control and management of natural resources, and the other was the continuing degradation of the environment.[30]

Nineteen years later, it must be admitted that the Rio Summit failed to fulfil the promises and expectations that emerged at the time.[31] It failed to prevent global environmental degradation, failed to stop the clearing of forests due to large-scale plantations, mining, and illegal logging. Forest fires continue to be a reality, and the water crisis has never been as critical as before. A collective reflection is needed, and it is imperative that we look for alternative models to respond to the crisis that the Rio Summit hoped to address.

The world is belatedly acknowledging the traditional knowledge and wisdom of indigenous peoples in sustainably manag-

ing the environment. This is true in the case of the Dayak Jalai people of Indonesia as shown in their practice of dahas.

As a comprehensive system of natural resource management, dahas strengthens the Dayak Jalai peoples' campaign against development aggression—from efforts of large-scale plantations and mining companies to enter their forests, effectively undermining the sovereignty of their territories and endangering their survival as a people. Being at the heart of community life, and because it has been practiced for many generations, dahas provides the Dayak people with a strong foothold in their campaign to protect their traditional knowledge on sustainable forest and resource management.

This case study on the Dayak Jalai people and their practice of dahas is another evidence of how indigenous peoples have historically cared for, and related to, the environment, a relationship that is characterized by mutual co-existence and respect. It is time that the Governments, national and international, should pay attention to the indigenous peoples' wisdom of caring for nature, and learn from it.

In the context of climate change, it could be argued that the Dayak Jalai people have very negligible contribution to global warming, mainly because of the way they sustainably manage the forest and the environment as exemplified by the dahas practice. Because of dahas, they are also better able to adapt to climate change.

The experience of the Dayak Jalai people raises two important issues. The first relates to how indigenous peoples should be recognized and effectively rewarded for their role in forest conservation by practising their indigenous knowledge. The second relates to ensuring indigenous peoples' access, control and use of their forests and territories.

Lessons can be learned from this case study on the communities of Dayak Jalai people. These are:

1. The Dayak Jalai people do not engage in shifting agriculture, a controversial practice that has long been associated with the Dayak.
2. The Dayak Jalai people do not engage in illegal logging

and deforestation. On the contrary, the practice of dahas ensures that forests are protected from logging, other forms of deforestation and from forest fires;

3. The Dayak Jalai people are agents of sustainable forests, lands, and water management. They manage their natural resources better if informed by their social, economic and cultural systems. It is imperative that these systems are enhanced, protected and respected.

Endnotes

[1] Between the State's policy and customary policy.

[2] Including discussions on ways of inheritance of knowledge and practices.

[3] Refer to Statistics Center of Ketapang Regency; Ketapang Regency in figure in 2007.

[4] Source: Ambrosius Djamil, Damong of Kampung Tanjung, February 2010.

[5] From the Office of Tanggerang Village Chief, 2009.

[6] As narrated by Supir (Ex-Chief of Kusik Pakit Hamlet), currently the Secretary of Rangga Intan Village, February 2010.

[7] Data of the office of Rangga Intan Village Chief, February 2009.

[8] Findings of Social Investigation by Vitalist Andi at Kampung Kusik Pakit.

[9] Told by Yohanes (Owner of Dahas Selandai inheritance, Pangkalan Pakit), February 2010.

[10] See Frans Lakon; Secercah Asa di Padang Penjamuran Siagan, Kalimantan Review Magazine, Regular Edition, Number 139 Year XVI, March 2007.

[11] See Frans Lakon & Nistain Odop; Dayak Menggugat Perkebunan Skala Besar (pages 75-77), Pintu Cerdas, Yogyakarta, 2010.

[12] From the interview with and observation of the traditional community of Tanjung Village, in which the headquarters of PT. KWAM in Jelai Hulu District are located.

[13] Summary of interview with local researchers. Tanjung January 30-12 February 2010.

[14] The result of Focus Group Discussion (FGD) with the community in Dahas Tumanang and Dahas Batu Rayaq, Kampung Tanjung, Jelai Hulu District.

[15] John Bamba, Siapakah Urang Jalai itu?, in Dayak Jalai Di Persimpangan Jalan. Institut Dayakologi, Pontianak, 2003.

[16] Focus Group Discussion (FGD) with Dahas community, Tanjung, 9-12 February 2010.

[17] interview with Sipil, Ketuhaq of Dahas Tumanang, February 4, 2010.

[18] The results of Interview and Focus Group Discussion (FGD) at the Dahas of research focus (Dahas Tumanang, Dahas Batu Rayaq, Kampung Kusik Pakit, and Kampung Pangkalan Pakit), at Tanjung, on the 9th – 12th of February 2010.

[19] Interview and Focus Group Discussion (FGD) in Dahas Tumanang, Dahas Batu Rayaq, Kampung Kusik Pakit, and Kampung Pangkalan Pakit, Tanjung, 9–12 February 2010. See also Stepanus Djuweng in Dayak Simpakng; Mempertahankan Tanah Terjanji, Institut Dayakologi, Pontianak, 1996.

[20] The results of Interview and Focus Group Discussion (FGD) in the Dahas of focus of the research (Dahas Tumanang, Dahas Batu Rayaq, Kampung Kusik Pakit, and Kampung Pangkalan Pakit), at Tanjung, on the 9th–12th of February 2010.

[21] The results of Interview and Focus Group Discussion (FGD) at the Dahas of focus of the research (Dahas Tumanang, Dahas Batu Rayaq, Kampung Kusik Pakit, and Kampung Pangkalan Pakit), at Tanjung, on the 9th– 12th of February 2010. See also John Bamba in *Dayak Jalai Di Persimpangan Jalan*. Institut Dayakologi, Pontianak, 2003.

[22] Interview with Sivil, head of Dahas Tumanang, Tanjung (on February 8th–9th, 2010).

[23] Interview with Marinaq, *Damong Adat* of Kusik Pakit Kampong, Rangga Intan Village, February 12th 2010.

[24] Focus *Group Discussion* (FGD) with the communities of Dahas Tumanang and Dahas Batu Rayaq, Tanjung (February 9th–12nd 2010). See *Elisabeth Lilis in Pengetahuan Adat dan Tradisi Dayak Jalai: Materi Pengajaran Muatan Lokal Suku Dayak Jalai untuk Sekolah Dasar (page 51). Institut Dayakologi*, Pontianak, 2008.

[25] *Ibid.*

[26] Interview with the Head of Dahas Tumanang, Sipil, and Marinaq, the Head of *Damong Adat* of Kampong Kusik Pakit, Rangga Intan Village, Tanjung (February 9th-12th 2010).

[27] See John Bamba, *Dayak Jalai at the Crossroad*; *Dayak Jalai's Indigenous institutional structure*, Institut Dayakologi, Pontianak, 2001.

[28] Ibid, "Generally there are 12 custom titles ranging from the highest to the lowest level which is known in Dayak Jalai community."

[29] Results of Focus Group Discussion (FGD) with Dahas Tumanang and Dahas Batu Rayaq communities on 9th– 11th February 2010, at Tanjung.

[30] See Darrell Addison Posey. (1975). Cultural and Spiritual Values of Biodiversity: A Complementary Contribution to the Global Biodiversity Assesment. London: Intermediate Technology Publications and UNEP.

[31] See A. Sonny Keraf. (2002). Etika Lingkungan. Jakarta: Buku Kompas.

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ANNEXES

Annex A. Respondents

NAME	GENDER	AGE (YEAR)	POSITION	ORIGIN
Sipil	Male	60	Ketuhaq (Leader) of Dahas Tumanang	Dahas Tumanang, Tanjung
Alius	Male	48	Younger generation of Dahas Tumanang	Dahas Tumanang, Tanjung
Veronika Marlina	Female	32	Indigenous Woman of Dahas	Tumanang & Tebirai Tanjung
Jami	Male	36	Younger generation of Dahas Tumanang, Sipil's child	Tumanang, Tanjung
Dominika Armina	Female	33	Indigenous Woman at Tumanang, Alius' wife	Tumanang, Tanjung
Niti	Female	13	Child of Dahas/student	Tumanang, Tanjung
Rano	Male	25	Youth	Batu Rayaq, Tanjung
Yakobus	Male	63	Ketuhaq (leader) of Dahas Batu Rayaq	Batu Rayaq, Tanjung
Lisna	Female	30	Indigenous Woman, Yakobus' daughter-in-law	Batu Rayaq, Tanjung
Kanius	Male	38	Farmer at Dahas mudaq	Batu Tunggal, Pangkalan Pakit

Yohanes	Male	62	Ketuhaq (leader) of Dahas Selandai	Dahas Selandai, Pangkalan Pakit
Ambrosiun Djamil	Male	63	*Damong Adat* Tanjung Village	Tanjung
Supir	Male	62	Former Hamlet chief of Kusik Pakit, and Secretary of Village of Rangga Intan (present), Owner of Dahas Tuhaq (Dahas Paoh)	Kusik Pakit, Village Rangga Intan

Annex B. Biodata of Resource Persons (Tonah Colap Research)

NAME	GENDER	AGE (YEAR)	POSITION	ORIGIN
Paulus Unjing	Male	46	Deputy Chairman of BPH AMAN West Kalimantan	Pendaun (now living in Pontianak)
Jaya	Male	39	Member of BPD at Balai Pinang Village as a young Figure	Petebang
Tagon	Male	37	Chief of Community Unit of Pendaun	Pendaun
Mario	Male	44	Boards in Keramat Botuh Bosi	Pendaun
Yakobus	Male	35	Leader for the Mudika (youth Chatolics) Stasi Gensaok	Gensaok

Petrus Apin	Male	37	Head of BPH AMAN Region North Ketapang	Meraban (now at Tahak- Balai Berkuak)
Duoi	Male	38	Indigenous young man Figure	Belantek
Deweng	Male	45	Indigenous young man Figure	Belantek
Ratius	Male	29	Indigenous young man Figure	Gensaok
Bowo	Male	25	Indigenous young man Figure and Primary School teacher	Petebang
Mandianto	Male	30	Indigenous young man Figure	Petebang
Ajelt	Male	33	Indigenous young man Figure	Gensaok
Jima	Male	33	Young Figure studying Local Wisdom	Pendaun
Madi	Male	29	Indigenous young man Figure	Gensaok
Sima	Male	38	Chief of Community Unit of Gensaok	Gensaok
Pak Limun	Male	73	Former Village Chief, Indigenous law and founder of Tonah	Gensaok
Pak Ribai	Male	69	Indigenous and Local Wisdom Figure	Belantek
Koman	Male	67	*Pateh* at Pendaun	Pendaun
Daud	Male	70	Former Village Chief and Indigenous Figure	Pendaun

Bantek	Male	65	Indigenous and Local Wisdom Figure	Pendaun
Diman	Female	60	Indigenous Women Figure and the Expert of Indigenous Medicines	Pendaun
Salomon	Male	65	Indigenous Figure	Pendaun
Poyot	Male	70	Indigenous Figure, Expert of Indigenous Medicines and Responsible person for the Keramat Botuh Bosi.	Pendaun
Lagu	Male	70	Former Village Chief and Indigenous Figure	Meraban
Lengot	Male	67	Local Wisdom Figure	Tempurau
Anoi	Male	53	Pateh at Munggus	Munggus
Sadau	Male	56	Local Wisdom Figure	Belantek
Sempek	Male	68	Indigenous and Local Wisdom Figure	Belantek
Gadus	Male	52	Indigenous Figure	Belantek
Lakai	Male	50	Indigenous and Local Wisdom Figure	Pendaun
Jempo	Male	56	Indigenous Figure	Pendaun

Peta	Male	65	Indigenous and Local Wisdom Figure	Petebang
Liut	Male	63	Indigenous and Religious Leaders Figure	Belantik
Ogol	Male	55	Indigenous Physiotherapist and Indigenous Figure	Tahak
Emit	Male	57	Indigenous Figure	Petebang
Segel	Male	69	Indigenous and Local Wisdom Figure	Petebang
Mewa	Male	57	Indigenous medical practitioner and Indigenous Physiotherapist	Tahak
Kamudi	Male	60	Indigenous Figure	Langkar
Ongkon	Male	70	Functionary Keramat Rapan Tanjar	Merawa
Boyong	Male	66	Local Wisdom Figure	Tempurau
Lempokng	Male	69	Indigenous Leader and Local Wisdom Figure	Gensaok

Indigenous peoples' efforts to protect and conserve their forests and to sustainably manage these prove that they are the ones who have contributed significantly in reducing emissions from deforestation and forest degradation, even before REDD came into the picture. If their customary institutions and practices for managing forests and other resources are reinforced, their contributions...will be further enhanced.

- Victoria Tauli-Corpuz

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