

Customary sustainable use of biodiversity by indigenous peoples and local communities



Examples, challenges, community initiatives and recommendations relating to CBD Article 10(c)

A synthesis paper based on case studies from
Bangladesh, Cameroon, Guyana, Suriname, and Thailand

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Introduction

Article 10(c) of the Convention on Biological Diversity (CBD) states that Parties shall:

(...) protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements.

Some years ago, Parties to the Convention requested practical information about and examples of sustainable use of biological diversity by indigenous and local communities and for advice on how best to implement this article.¹

In response to this request, indigenous peoples and support organisations from Bangladesh, Suriname, Guyana, Cameroon and Thailand set up a project to produce case studies in which they documented sustainable customary use within their communities.² This complemented an existing desire to create a written record of their traditional practices, which until then had largely relied on oral transmission from one generation to the next. The project therefore enabled this knowledge to be documented and safeguarded, and demonstrated to others how these indigenous peoples use their land and resources.

The case studies provide insights into the sophistication of local management systems, in particular their customary law systems, which guide the wise use of biological resources. The communities also describe the threats which the customary management systems are facing and identify obstacles to effective implementation of Article 10(c) in these countries. The case studies were produced between 2004 and 2008. Although they cover different parts of the world, and deal with different peoples and ecosystems, there are many similarities in the practices they describe, as well as the problems they face. The full country reports are available online.³

This synthesis paper presents and explores the themes that are common to the case studies and provides examples of the different issues from the respective country reports. Together the communities present their recommendations to local and national governments to improve support for their age-old sustainable management systems and offer advice on how to implement Article 10(c) (more) effectively. The communities also describe various initiatives that they have themselves taken to support and accelerate this process.

Locations and communities

Suriname

The Lower Marowijne region is located in north-eastern Suriname, which is part of the Amazon region. The area is situated on the lower part and estuary of the Marowijne river, which flows into the Atlantic Ocean. It is a very diverse and rich ecological environment with coastal mangrove forests, elevated swampy forests (containing high species diversity of palms), and elevated dry land forests further inland. The area is home to the **Lokono** and **Kaliña** peoples, numbering approximately 2,000 people in eight indigenous (Amerindian) communities. The case study, entitled *Marauny Na'na Emandobo/Lokono Shikwabana* ('Marowijne: Our Territory' in the Kaliña and Lokono languages respectively) was produced by KLIM, the Lokono and Kaliña organisation in Marowijne, which has united the traditional leaders of all eight communities since 2003.



One of the Kaliña villages in Lower Marowijne, seen from the Marowijne River © KLIM

Cameroon

The case study in Cameroon was carried out by a Cameroonian non-governmental organisation, the Centre for Environment and Development (CED) and members of the Baka community located near Mekas, on the western side of the Dja Biosphere Reserve. The forest peoples in Cameroon, pejoratively referred to as 'Pygmies', are considered to be the first inhabitants of the Cameroon forest, and comprise three main ethnic groups: the **Baka**, the **Bakola/Bagyeli** and the **Bedzang**. The Baka are the largest group. Their common feature is their attachment to the forest. The Baka communities of Canton Dja are not recognised by the government as distinct socio-administrative entities. Instead, they are dependent on the Bantu villages to which they are geographically and socially attached. Since the initial research with the Baka of Canton Dja, more 'Pygmy' communities in south-east Cameroon (including Ba'aka, Baaka and Baka peoples) have documented their customary sustainable resource use in their territories that, since 2005, have been overlapped by the newly-established Boumba-Bek and Nki National Parks. Their experiences are also included in this paper.

Guyana

In Guyana the case study focused on the **Wapichan** indigenous peoples of south-west Guyana. Their territory in the south Rupununi region features a complex mosaic of savannahs and forests which encompass two major ecosystems: a savannah-grassland ecosystem that forms part of the Rio Branco-Rupununi savannah, and an extensive tropical forest ecosystem with a variety of vegetation types. The climate in the region is marked by a seasonal drought (September–January) and a pronounced rainy season which creates extensive flooding of low-lying savannah areas (April–July). The indigenous population in the South Rupununi numbers around 8,400.



Part of the Wapichan wiizi - Wapichan homestead at Kumaka Baoko
© Wapichan communities

Thailand

The study area in Thailand is situated in the highlands of the western part of Chomtong district, Chiang Mai province, in Northern Thailand. It is located in the Thanon Thongchai Mountain range and covered with tropical forest which is very rich in biodiversity. Seven main highland ethnic groups live in Northern Thailand, including the **Karen** (15 villages, 7,200 people in the case study area) and **Hmong** (four villages, 1,500 people in the case study area) hill tribes, each with their own language, culture, customs, traditions and beliefs. The area consists of four watersheds with a variety of forest types, including evergreen, mixed, pine and diptocarp. The case study *Indigenous Knowledge, customary use of natural resources and sustainable biodiversity management: case study of Hmong and Karen communities in Thailand* was produced with the support of IMPECT (the Inter-mountain Peoples' Education and Culture in Thailand Association). To reduce the length of this paper, only the Karen case study is referred to here. The information relating to the Hmong can be read in the full Thailand case study.

Bangladesh

The Sundarbans is the largest mangrove forest area in the world, located in the south-western part of Bangladesh and in India. The part of the Sunderbans which is located in Bangladesh covers an area of 6 million hectares and consists of about 200 islands which are separated by about 400 interconnected tidal rivers, creeks and canals. Various local communities that depend on the Sundarbans for their livelihoods live in villages at the edges of the forest. The main resource users are the bawalis (wood cutters), jele (fisher folk), mouals (honey collectors), kathkurani (wood collectors, carpenters) and chunari (snail and oyster collectors) who live at the edge of the Sundarbans and its periphery. The Munda are an adivasi (indigenous) community also living in the area and practising a mixture of subsistence activities. Non-wood forest produce (golpata, hantal, honey, grass etc.), fisheries resources (prawn fry, fin fish, crabs, shells) and herbal medicinal plants provide employment for the local people and revenue for the government. It is estimated that up to 300,000 people derive all or part of their income from collecting these products. In Bangladesh the Sundarbans was declared a Reserve Forest in 1875, and this imposed strict state control over the area. The Sundarbans Reserve Forest (SRF) is biologically the most diverse, rich and valuable forest resource in Bangladesh. In terms of wildlife, the SRF is home to the single largest population of the Royal Bengal Tiger (*panthera tigris*) in the world. The case study on the Sundarbans was produced with the support of Unnayan Onneshan, a support NGO and research centre that advocates a participatory management approach for the Sundarbans.

Methodology

Community Research

All the case studies were carried out following a standard community-based procedure. In each country, community researchers were identified during community workshops. They were then trained in interview techniques, report writing and facilitation of group discussions, and also explored the best ways of explaining the background and goal of the studies. Information on traditional knowledge and customary rules and practices was then gathered by means of questionnaires, group discussions, individual interviews, participatory rural appraisals, observations, village walks, site visits etc. After the information had been collected, draft case study reports were compiled, followed by field workshops to evaluate and validate the reports which were then finalised. In each country, a national workshop was held with government and civil society representatives, international environmental agencies and donors, where the final report was presented and the project findings disseminated.



Focus group with hunters, Suriname
© KLIM

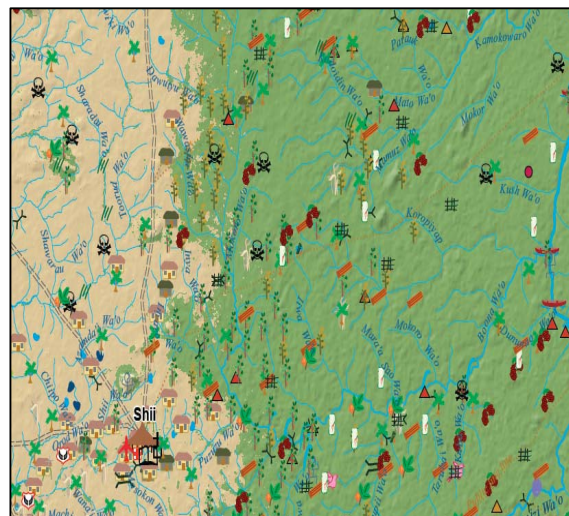
Community land and resource-use mapping

Complementary to these reports, communities have also produced community land-use maps of their territories which indicate which places and which resources are used for specific purposes (customary use). The maps indicate indigenous names of places (eg. rivers, creeks, mountains) and locations of particular significance or meaning, such as spiritual sites. These maps demonstrate the scope and significance of indigenous territories, and illustrate the importance of the natural resources for indigenous and local communities' livelihoods.

In order to produce the maps community members were trained in the use of GPS (global positioning systems) and GIS (geographic information systems) before going into the field, sometimes accompanied by resource users or elders who know the territory or specific parts of it very well. Data and locations were recorded and added to digital maps.



Training in the use of GPS, Cameroon © CED



Detail from Wapichan people's map of the Rupununi region © Wapichan communities

Customary use of biological resources

Customary use refers to use of resources by indigenous and local communities in a way that has developed over generations, based on experience with specific places and species within the territory, the seasons and climate, methods of harvesting, hunting, fishing, or gathering, and methods for processing resources into materials and artefacts. Customary use is thus closely linked both to traditional knowledge as well as to a particular territory. A cross-section of examples of customary use from the case studies is provided below, but the full information is provided in the respective case studies.

Agriculture

The **Kaliña** and **Lokono** in Suriname practise agriculture using the age-old technique called rotational agriculture or shifting cultivation. Agricultural plots are generally used for two years. Bitter cassava is the most important crop grown by the Kaliña and Lokono. It is used for the traditional cassava bread (K. *alepa*, L. *kali*) and the well-known *peprewatra* (hot soup). Agricultural activities are governed by the rainy and dry seasons. Agricultural plots are identified during the rainy season to ensure that the land remains free from flooding. The fertility of the soil is also important and the Kaliña and Lokono have many ways of identifying this. For instance, they say '*many awara trees is a sign of fertility*'. They also look at the condition of the soil. The Kaliña and Lokono often use joint labour in the farming plots (called *moshiro* or *majoeri*).

Among the **Wapichan** people, the same type of agriculture is practised: shifting cultivation is carried out over areas large enough to allow considerable fallow periods before reuse of land. In this way, the fertility of the soil is maintained. Traditional knowledge includes an understanding of the types and qualities of soils found in different parts of the landscape. Wapichan farmers, for example, can get an indication of the fertility of the soil by observing the types of wild plants growing there. Like the Kaliña and Lokono, the Wapichan also undertake major agricultural tasks by hosting a traditional *manoru* (collective workparty). Several Wapichan households in the Rupununi have also reared their own cattle for generations. In each community at least a few families keep cattle, while most villages also maintain a community herd. Grazing areas are not fenced, but are agreed collectively by the whole community.



Wapichan farms provide a diverse variety of food, fibre, ritual and medicinal crops © Wapichan Communities

For the **Karen**, having enough rice to eat is the highest self-sufficiency goal. There are gardens, wet rice fields, swidden fields and cash crops in the Karen communities. The *kheu* (swidden field) is an area of land cultivated for one year. Upland rice is the main crop but other crops are also grown for harvest all year round, such as taro, other tubers, corn, squash, cucumber, chili, and eggplant. After use, the *kheu* regenerates, and this restores the natural diversity. The presence of earthworms and insects as well as, for example, certain varieties of bamboo, are indicators of whether the soil is good

for cultivation. The Karen classify various soils, for instance *haw kho su* (black soil) which is suitable for growing crops such as sweet potato and chilli. The Karen also use *Ta ma deu ma ka* (exchange of labour) to help each other in farming. Men climb trees to cut the branches, build fences, build shelters in the fields, and plough. Women plant, weed and harvest the rice, and take care of the seedlings. The Karen also have domesticated animals and use the forest for their grazing.



Joint farming, Thailand © IMPECT

Hunting

The **Kaliña** and **Lokono** hunt for game animals like peccaries, tapirs, armadillos, and deer. The hunting grounds in Lower Marowijne are considered the common property of all the indigenous peoples of Lower Marowijne although most hunters hunt in their 'own' hunting grounds where they know the hunting lines. Hunters traditionally used bows and arrows (L. *Sarapa*) or a lance (a type of spear). Nowadays almost every hunter uses a hunting rifle. The hunters often erect a scaffolding (K. *soela doepo*) near fruit trees that are likely to attract game, and wait there until the animals come to eat. They do this in particular for nocturnal animals, such as the tapir, deer, *kapashi* (armadillo) and hare. The hunters have extensive knowledge of the forest and need to be able to read the 'signs' in the forest. 'You have to know the forest: the animals' tracks and also their scent', the hunters say. From experience they know which are the best places to hunt, such as sites where forest fruits (*podosiri* and *maripa*) fall and are eaten by the game, or along the upper courses of the creeks.

Wild game meat is equally highly prized by the **Wapichan** people who consider a proper diet should always combine both vegetables and meat or fish. Their study documented 86 different wild meats that are eaten; some of the animals most commonly hunted for food are the *aro* (savannah deer), the *sokoru* (agouti), *oran* (laba), *bakuru* (bush hog) and *kapashi* (armadillo). Most Wapichan hunters also own one or more hunting dogs which are used to flush out and retrieve game. Their ancestors used the *kobin* (blowpipe) and poisoned darts to hunt monkeys, birds and small game. Today, blow pipes have been replaced by the shotgun, but the bow and arrow is still regularly used by Wapichan hunters. Trapping techniques used by earlier generations are still used today, as is the ancient method of *watapukara* (beating) game towards waiting *baichainao* (marksmen) who stand at agreed *zaudap kiizai* (waiting points) with a bow or shotgun. Hunting areas are reached and interconnected by personal, extended family and community *tiwaapa kiizai ponan* (hunting paths) 'hunting lines'. These paths often feature a semi-permanent hunting and fishing camp at their end point and may also have temporary camps along the route.

For the **Baka**, hunting is not only a traditional livelihood activity; it also fulfils a social and cultural function. In the social hierarchy of the Baka, elephant hunters have a privileged position. The Baka distinguish two main types of hunting expeditions: the great hunt and the small hunt. The great hunt, which is for large game (elephant, boar, gorilla, chimpanzee, etc.) is mainly practised during the long rainy season (*sokoma*). The small hunt, which involves small mammals and rodents, is usually carried out in the dry season. Hunting is traditionally, carried out with spears or crossbows. In addition to the spear (*mbenga*), other tools used during the great hunting expeditions include hatchets (*kôbà*), knives (*nlemba*), bellows (*kômbà*), and fire-making tools (*mbomo*, *sawala*). This arsenal, along with food, is used during lengthy expeditions (*molongo*) within the forest. Older methods include hunting with a net and hunting by pursuit (with trained dogs).



Baka man demonstrating fire lighting with a mbono © CED

Fishing



Wapichan boy fishing with bow and arrow © Wapichan communities

Fishing is an important source of subsistence for the **Kaliña** and the **Lokono** of the Lower Marowijne. They fish throughout the year in the river, the sea, the creeks and the swamps, although the fish populations differ depending on the season and the fishing ground. The Lokono and Kaliña have many different fishing techniques. They mostly use the drift net (*follet*), but there are many other traditional methods, such as submerging an *Adaloko*, a hollowed-out tree trunk, with an opening on one side. At low tide the trunks are lifted up and fish are often found inside. The Kaliña and Lokono also know how to prepare several plants to create a substance to stun the fish. The plants contain intoxicating substances that poison the fish but do not otherwise affect them; the fish can still be eaten. The use of this method is bound by rules (see below).

The **Wapichan** people customarily use all the major and minor rivers, creeks, streams, lakes and ponds throughout the territory for fishing. The most common techniques involve the use of *kabao na'iki kobao zunaa* (hook and line) *kobawuzii* (fishing rod) and *somara na'ki bairii* (bow and arrow). At the start of summer, fish trapped in drying pools and streams are also collected by hand, with nets or by using poison. In these pools, they also use the method of *maradapaan* (stirring up silt) with their hands to bring fish to the surface to be caught. Traditional Wapichan fish poisons are also used to catch fish in pools, rivers and creeks in the savannah and bush. As with the Kaliña and Lokono, fishing with poisons is carried out according to a number of customary norms and rules.

Fishing is mostly practised by **Baka** women during the *Yaka* season (the long dry season and the start of the short rainy season). The damming (*gouma*) method is practised during the low water period. It is a team activity (involving as many as ten women) and the technique is to build a dam of mud across the bed of running water both downstream and upstream of the area in which fishing is to take place. The water in the contained portion is drained by one group of women while a second group searches the basin for fish, crabs and sometimes shrimps. This work is carried out to the rhythm of the women and children's songs. Line fishing (*njenge*) is practised by men, mainly the younger generation, in large waterways during the *Yaka* or *Sokoma* (long rainy) seasons. Strictly speaking, this is not a traditional Baka practice but is borrowed from the Bantu.

Fishing is the main economic activity of the **jele** (traditional artisanal fishers) in the Sundarbans, Bangladesh. They go into the forest to fish every day. Usually they use a small boat (*dingi*) and utilise various types of net. For river fishing they use big-meshed nets whilst small-meshed nets are used for fishing in canals, creeks, ponds and along the shores of the rivers. They also use *borshi* (hook and line). They catch many species of fish, the local names of which are *kaine*, *vetki*, *tengra*, *chingri*, *parshe*, *datne*, *bagda*, *horina*, *bele* etc. Fish are abundant in the months of *Jostho* to *Srabon* (mid-June to mid-August), because in Bangladesh this is the rainy season, when the salinity of river water is decreased. Adolescent boys accompany the elders when they go into the forest to fish.



Sorting fish on the boat, Sundarbans
© Unnayan Onneshan

Gathering materials and foods and use of wood

The forest also provides food in the form of forest fruits, materials for a variety of utensils, and medicinal plants. The **Kaliña** and **Lokono** have their own weaving techniques. Traditionally, weaving is used for making various utensils, for example a *matapi* (cassava squeezer) or *manaré* (L. *mokoro* or *tjiriki*, a sieve). Materials for weaving include: *warimbo*, *awala-alempo* (top of the young awara palm), *kamina* (a forest liana, K. *kereresjimo*) and the top of the Mauritius palm (K. *meresji alempo*). In the Lower Marowijne various types of clay are collected by the Kaliña and Lokono and used for making pottery. Traditionally, the indigenous women make their hammocks themselves according to a technique passed down from generation to generation. The traditional hammock is made of cotton (K. *maloe*). The Kaliña and Lokono also make use of species of wood that grow in the forest. Wood is mainly used for firewood for cooking and as construction material for boats, houses or for wood-carving.

The **Wapichan** study has documented no less than 140 different wild foods, including fruits, nuts, and fungi that are customarily gathered by the Wapichan people. See the table below for a sample of these foods.



125. pawishi awun mooton	tree	fruit	Kanoko	Eaten fresh
126. soakema	plant	tuber	kanoko	Cooked
127. war aarara	tree	fruit	Kanoko	Eaten fresh
128. powakun	tree	fruit	Kanoko	Eaten fresh
129. sokoru	tree	fruit	Kanoko	Eaten fresh
130. atamuni tini	fungus	fungus	kanoko-katonaru	Cooked
138. kashuru	invertebrate	ants	baarazi	Parched

Examples of wild foods recorded by the Wapichan team

Detailed knowledge of the location of fruit-bearing palms and trees is passed down from generation to generation. The territory also contains over 250 useful materials that are used for constructing houses, boats and a wide range of traditional Wapichan craft items, food processing utensils and household tools. Favoured construction and craft material sites are reached by specific lines or via existing hunting and fishing lines. Of this total, 169 resources are hardwood trees used for house posts, rafters, beams, laths, foot bridges and making canoes. Forests, wetlands, mountains and savannah habitats in *Wapichan wiizi* (Wapichan territory) are home to a rich variety of plants and animals that the Wapichan people use to make traditional *kasarai* (medicines). Many of the most valued traditional medicines are located in *kanoko zokon iti* (deep bush) as far as two or three days' walk from the main villages.

The **Karen** build houses from wood. They also use wood for other purposes in their daily life, including basketry. Baskets are usually made out of green bamboo and rattan. They also use the bark of a kind of jute (*paw*) when it is sufficiently pliable for basket-making. Natural dyes are another form of indigenous wisdom that makes use of forest produce. The women use natural resources, such as tree bark, to make dyes. There are many types of plants and trees that the Karen use for medicinal benefits. They are used as pharmaceutical preparations for curing and preventing diseases as well as providing extra energy. Others stop bleeding or strengthen the *khwan* ('soul') and provide moral support and encouragement. Roots, leaves, stems, and flowers can all be used, depending on the plant.

Baka harvest most of their food resources from the products of gathering and picking. They gather a great variety of products in the forest, not only for food but also for healing, and to a lesser degree for clothing. Wild fruits, bush mango (*moabi*, *mvout*, etc.), mushrooms and several varieties of wild yams are mostly available during the rainy season (*sokoma*). Honey harvesting is of great importance to the Baka and is practised during the *yaka*. The Baka distinguish between several types of honey depending on the melliferous insect in question. Baka honey harvesting techniques are highly developed and involve a number of different tools such as hatchets (*kôbà*) and a smokehouse made of a lighted clump of grass. In addition, *mofouab* and *koko*, two herbaceous plant species, help protect the harvester from bee stings when rubbed on the body. The collected honey is preserved in a container made for this purpose from *moko* leaves.



Wild honey, Cameroon © CED

The Sundarbans forest is very important for the livelihoods of several groups of traditional resource users who harvest the following non-timber forest products: golpata (nyapa palm), firewood, honey, medicinal plants, grass, and shells to make lime. Honey is a very important non-timber forest product for the **mouals** in the Sundarbans. For centuries they have collected honey from bee colonies of *Apis dorsata*, which build very large combs on the branches of large trees. One beehive can contain two to forty kilograms of honey. Honey collecting in the Sundarbans often takes on a festive character. Mouals from different communities arrive in bands via the waterways, usually by boat, and then assemble in one place. Each band has six to seven members including a *sardar* (group leader) for overall supervision during the journey into the forest. When a moual finds a honeycomb he shouts in a loud voice to inform his companions. Then a burning *kadu* (bundle made of tiger fern leaves) is used to generate smoke to drive the bees away from the hives, giving the mouals the opportunity to climb the trees and collect the honey. To do this the mouals use a basket, called a *dhama*, made of cane, which can hold 20-30 kilograms of honey.

In their homes mouals store honey in pitchers made of mud which preserve the quality of the honey for a long time. Honey is a sacred food, and is the first food to be given to a newborn baby. Mouals are always very careful not to adulterate honey.



Golpata growing along the river bank
© Unnayan Onneshan



Harvesting golpata
© Unnayan Onneshan

Wood collection is an important activity for the **bawalis** of the Sundarbans. The main fuelwood species are *goran*, *sundari*, *keora*, *gewa*, *kankra*, *shingra*, *bhola*, *krip* and *jhao*. The majority of fuelwood in the Sundarbans is taken from the branches and tops of timber tree species. Bawalis use axes to cut wood. They use a *pas dingi* (a small support boat to the large main boat) to bring the wood from the forest through small canals and creeks to the main boat waiting in the river.

Golpata (*Nypa fruticans*) harvesters are also important traditional resource users of the Sundarbans. Golpata is found in tidal channels, rivers, low-salinity estuaries and in swampy localities in the forest interior. Economically, golpata is the most important non-wood produce of plant origin in the Sundarbans. The fronds provide excellent thatching materials that are used for roofing and fencing and for making mats. Its fruits are edible. Local practitioners of herbal medicine use the medicinal qualities of the palm as well.

Golpata collectors take a boat and a *pas dingi* to enter the remote forest. Five to six men group together in one boat, led by a *majhi* (boat leader). Between 20 and 150 boats constitute one *bahar* (fleet), headed by a *bahardar*. The boats stay in the forest for 24-30 days. The men take stocks of food, medicine and water with them into the forest.



Bawalis transporting logs in a pas dingi © Unnayan Onneshan

Customary law, institutions, and spiritual underpinnings

All the case studies demonstrate that spiritual beliefs and cosmological views guide the care of territories and resources. Below are glimpses from the case studies that describe how the communities view their relation to the natural world.

The beliefs of the **Karen** are based on the philosophy that everything has an owner, God (Yawa), who created all things. For natural things, the Karen use *ta* (thing) as a prefix which has the special sense of 'things that are unseen', a supernatural force or power that creates all the natural things that are essential to the world and are interrelated, supporting each other directly and indirectly. All natural resources have a *ta* as their owner or master. The Karen honour the *ta* as the owner of all natural resources for all time: humans are not the owners of natural resources. Similarly, 'wildlife' is sometimes referred to as *ta mi la*; or as *cha po kaw po* or *tap o ka pga pu*, meaning animals that no one controls or owns.

According to the **Kaliña** and the **Lokono** everything on earth, as well as things that Westerners consider non-living such as stones, clay and water, is alive and connected to one another. All animal, plant and fish species, as well as stones, creeks and rivers have a spirit that protects them and that humans should take into consideration. Preserving the right balance between man and nature is of prime importance.

Similarly, many **Wapichan** customary norms are underpinned by a belief that the whole territory is populated by spirit beings. The Wapichan explain in their case study: *'each species or family of animals and plants is believed to have their own spirit dokozeu 'grandfather', or tapiki 'keeper'. These keepers watch over their children and oversee their movements and welfare. We believe that the spirit keepers of the animals wamakarodapa kandon 'feel hurt' when their children are wasted or tormented. This is why we cannot punish, waste or abuse these beings'*.

The **Baka** believe in God the creator, *Komba*, who moulded all things and all beings from a shapeless but living matter. It is his spirit or the spirit of the forest, *Enjengui*, who protects man but also presides over his life, his death and his rebirth as a Forest Spirit. For the Baka, the forest fulfils many economic, social, cultural, religious and recreational roles.

Bawalis and **mouals** of the Sundarbans believe that the forest is a very sacred place. The Sundarbans is a tidal forest, and they believe that the Creator washes the forest twice daily and maintains its sanctity. Irrespective of religion they believe in the existence of Banobibi (the main goddess of the Sundarbans) and other gods and goddesses and *pir-awlias* (Muslim religious saints or sufis who have supernatural power).

Customs and rituals related to natural resource use

Due to the spiritual relationship that the communities have with their environment, they carry out certain customs and rituals when they are interacting with natural resources. Some customs could be described as 'seeking permission and good fortune'; others simply demonstrate unwritten agreements relating to being respectful and avoiding upsetting the spirit being. The following are a few examples.

From early times **Kaliña** and **Lokono** hunters have followed different traditional practices to ensure that they get a good catch and that everything goes well for them in the forest. Before the hunter leaves his home and goes into the forest, it is customary to sprinkle some water and talk to the spirits that they may remove all evil from his path and that he may have good fortune. Similar acts are carried out in the farming plot. For example: *'You take a calabash with beteri (sweet cassava drink). Then you*

speak and pour it on the land to let your plants grow well and chase away spiritual obstacles'. The **Kaliña** and **Lokono** also show strict respect for the rule that menstruating women are forbidden from visiting their agricultural plot; this is to prevent poor growth of the crops caused by offended spirits. Under no circumstances may women who are menstruating come near the water either. The smell of blood enrages the water spirits (*okojoemo*). Nor may a fisherman fish for eight days after his wife has given birth.

Another important rule of the **Kaliña** and **Lokono** is that *'when you go fishing, you have to keep the environment clean and not disturb invisible beings*'. Fishermen may not urinate in the water or satisfy nature's calls. They may not curse, allow blood to enter the creek or throw dishwater, pepper, oil or fish remains into the creek. Nor may they throw fish intestines into the water, otherwise, they say, this will chase the other fish away. These have to be buried or left out for the vultures. The same applies to the sea.

The **Wapichan** have similar rituals in their farming plots. Before felling trees, it is customary to *'appeal to the tree spirit keepers*'. Fishermen may not provoke the fish keeper spirits and other water spirits. Nor may they wash land turtles in the water. Extraction of forest materials sometimes involves communication with the spirit owners of these resources. Conversations with the spirit owners of medicine and charm plants, for example, are accompanied by the ritual use of tobacco in which they appeal to the spirit and ask for permission to take the plant. When Wapichan go hunting, animals may not be *'toyed*' with. There is a saying *lpai wunui aonaa turuu ibaniko* which means *'do not torment game*'.



Karen perform ritual ceremony "Lue Pwa" in conjunction with the setting up of a community aquatic biodiversity area, Mae Ya watershed © IMPECT

Before **Karen** use natural resources, they also perform certain activities to contact the supernatural protector to ask permission and its blessing. The ritual *'Propitiating the Lord of the Land'* (*pha thaw me kho*), for example, shows their respect for the Lord of the Forest and the Lord of the Mountain and informs them about the villagers' intentions in entering the forest to hunt. The ritual is performed before each meal. The rice is set apart from the side dishes, which are put in leaves. These leaves are then placed on stones. The villagers believe that they are then safe from any danger. Within the agricultural system, there are many rituals related to the soil. The *bwaw kheu* ritual (to nurture the swidden) is held when the rice sprouts and the entire field is green. There are also many smaller versions of this ritual for different purposes, such as asking for blessings, warding off threats, propitiating fire, nurturing the rice soul, and propitiating the field to chase out evil.

The **Karen** also have taboos against defecating or urinating in water, throwing rocks in water, and sticking poles in mud, for fear of angering or hurting *na thi*, the Lord of the Water. When hunting, no loud or coarse noises should be made in the forest in order not to demean the sanctity of the hunting trip. Herbal medicines should not be collected on certain days (e.g. on a day that a child in the village is born or on a day that someone in the village has died). Furthermore, women should not collect herbs while they are menstruating. If any of these taboos are broken, the medicinal herbs gathered will lose their sacredness and have little or no power. In order to gather the herbs, permission must be asked of the Lord of the Land and tobacco or coins left in place of the herbs.

The **Baka** perform a hunting rite to make the hunter invisible while hunting large mammals, in particular the elephant. The rite entails a divination session where the diviner *ngàngà* reads from the flames of a large log how the hunt should be conducted and the direction to take. The *mònjòyi* dance, performed collectively, enables the hunters to become invisible. Women play an important role in this rite. During the night preceding the departure for the hunt, the hunters' wives sing loudly in *yoddle*, and dance in the dark at the edge of the camp, out of sight of the men, to attract game. A special spirit presides over this dance, which is called *j'ob'ok'o*. During these dances, the women chew and spit out leaves (*màkasa*); they handle a baton (*mòjuma*), and then hand it to the chief hunter, who hides it. At the end of the hunt, a portion of the throat of the elephant is presented to the chief hunter's wife, who led the *yéli*, for her to throw into the forest as an offering to the spirits. The *mòkàtò* ritual is a rite performed following a series of unfruitful hunting expeditions, which are believed to be caused by disorder, misunderstandings and disputes in the community. This is the incentive for the community to maintain a degree of social cohesion so as to avoid famine. Another pre-hunting ritual is one intended to attract the spirits' attention by showing them the effects of penury. As they leave for the hunt, all the hunters file past a basket filled with leaves, which has been hung up in the centre of the camp, and strike it with their weapons. The rite of initiation to the Forest Spirit, which marks the passage from adolescence to adulthood, is the most important rite in the life of young Baka men: it is during these initiation ceremonies that the youth learn about life in society, the craft of the hunter and the mysteries of religion.

Among the **Sundarbans** traditional resource users, beliefs and practices include the following: they enter the forest putting their right leg first and uttering the name of the Creator and Banobibi, and they come out from the forest stepping left leg first (as when going to a mosque) and they do not enter the forest on Friday. They will not use the word 'tiger' when referring to one but rather *barho mia* (elder brother) or *bagh mama* (maternal uncle) to avoid speaking ill of tigers; and all the resource users pray and make offerings to Banobibi. Hindus offer *vog* (forest fruits and sweets made of sugar and known as *batasha*) and Muslims offer *sinni* (made of boiling rice and gur). When travelling by boat, Hindu mouals offer prayers to the Gonga goddess, while Muslims pray to Allah.

As the forest is considered a holy place, they do not urinate or defecate in the forest. If they must, they use a large leaf on the soil but do not bury their waste. Females do not work in the forest because there is a common belief that women are not always holy (due to menstruation). Women, however, follow several rules and beliefs at home (mostly related to protecting their husbands from tigers) while the men are in the forest.

Customary laws and rules for sustainable use

There are many unwritten rules and laws that apply to the sustainable and sensible use of resources in the case study communities. These are intended to make sure that over-use is prevented and that there will be enough left for future generations. Below are some examples from the cases, grouped under a number of main common 'rules'.

Do not waste or overuse (take only what you need)

Several rules were documented in the form of quotes from **Kaliña** and **Lokono** hunters and fishers. For instance:

- *A pingo is a big peccary. If you've gone far away to hunt, you can only shoot one, because you can't carry more, so it's useless to shoot more (. . .) because you will end up leaving it behind.*
- *I shoot what I need for food. The indigenous people shoot game for subsistence, not to eradicate it.*

Similar rules apply to the use of plants and wood:

- *You may not cut open the forest for no reason. The land must genuinely be cultivated.*
- *I use everything, down to the last shavings. I use the leftovers to repel mosquitoes [with the smoke].*
- *You may not cut wood just like that without making use of it; also the Kumbu palm (K.kumu) may not be cut down nowadays, because it is decreasing in number.*

The **Wapichan** have many comparable general rules, such as: *madi waap i tap kuo* 'do not act without reason', and *madiwaaitapkao* 'do not practice wasteful activities'. For hunters, fishermen, farmers and gatherers, rules are, for instance:

- *Do not kill all; kill only what you need and can consume [hunt only when there is no meat].*
- *Do not punish hunting grounds [do not over-hunt]; do not waste the land; cut only enough for your capacity and needs; do not use the land foolishly.*
- *Do not cut farms where there are many trees with edible fruits; extract all useful craft and construction materials before burning; do not fell bountiful and sweet fruit trees (bitter and low yielding trees may be felled) and do not fell fruit-bearing Ité trees (older, dying and unproductive palms may be felled).*

Heads of farming settlements feel a duty of sensible use and protection towards the natural resources within and adjacent to their home area. According to custom they cut fields to the size that they are able to use effectively. Young Wapichan farmers are taught by the heads of the farming settlements that fields should be used to their full extent.

When the **Karen** look for food, they do so according to the season and divide periods for consuming certain forest products appropriately. When one kind of edible plant is abundant in the forest, they do not consume much of other types of produce. They only collect what they need to eat. Collecting more than necessary is viewed as wasteful. Traditional hunting rules place limits on the catch and prevent over-hunting. No more animals can be taken than can be eaten at one time. A really important thing is to prevent forest fires, since this can destroy the forest ecology. When building a house, the main principle used to choose trees is that they must be of an appropriate size and must be easily and conveniently cut without destroying the surrounding ecology.

Make sure a resource can recover

As with the rules intended to prevent over-use or waste, there are also commonly respected rules that prescribe that all resources used must be allowed to recover. This complements the rule 'don't use all'.



Selective harvesting of Ité palm leaves (Guyana). Young shoots are left to grow on for future use
© Wapichan communities

The **Wapichan** apply the traditional practice of rotating farming, hunting and fishing. Young Wapichan farmers are taught by the heads of the farming settlements that they should *mariniya'ataan* 'leave off' fields and let them *sookapkidan* 'rest' after a few harvests of cassava so that the soil is not 'punished'. The same principle also applies to hunting or fishing (using different hunting grounds and different pools or fishing grounds). In the case study, the Wapichan explain:

'Traditionally our grandfathers sent messengers to neighbouring villages to find out where and when they last used a specific hunting area. If the area intended for hunting had been used recently, they would decide to go elsewhere. In this way they used to rotate their hunting grounds. Our village Tosaos [community leaders] still follow this method today when they organise village hunts'.

The **Wapichan** have the custom of, wherever possible, harvesting fruits or other materials without felling the tree. Fruit is traditionally harvested by climbing the trees, building a platform or using a gaff to bring down fruit. When cutting timber trees, they take care to ensure that they fall without damaging younger timber trees growing nearby. In the same way, trees that provide other useful material like medicines are only used in certain ways to protect the tree for future use. Another tradition is to protect areas which have a local abundance of craft, medicinal or construction materials that are scarce elsewhere. As a rule, those collecting craft and construction resources only cut the mature materials that are ready for use and leave young plants or trees to grow on for future use by their communities.

Other regulations or rules include:

- *Do not kill young game animals and do not shoot pregnant game; leave the young shoots (take mature plants).*
- *Do not leave fish poison in the creek; fish traps should be dismantled after use. Fish moving upstream to spawn should not be trapped, poisoned or netted.*

Similarly, the **Kaliña** and **Lokono** say:

- *Avoid pregnant game. Because if you shoot the mother, next time there will be fewer young.*
- *We leave the small ones (animals) alone and choose the older ones from the group.*
- *Use large-meshed nets, because then you cannot catch small fish.*
- *You may not cut down a tree that is too small; also, wood species that have just started to grow may not be cut down. They have to be protected.*
- *Warimbo stalks must be cut a bit above the ground. The roots then remain intact. After a while these roots grow again into a full-grown warimbo.*

Based on their experience in natural resource management, the **Karen** have found that if they clear brush and trees in the rainy season, the plants will die. Therefore, they do this in the dry season. Nor do the Karen ever destroy water sources. They do not disturb springs or the area around a spring. Gathering of forest plants must be dispersed, rather than always from one area. For example, when collecting bamboo shoots (used for basketry), one should not collect from only one clump but instead from many clumps in order that some shoots grow into mature bamboo. The same applies to collecting herbal plants (herbal medicines). Only the amount that is needed will be collected. A large animal may not be hunted after one has just been killed. If three of any large animal have already been killed, no more of that kind can be killed for the rest of the year. The animal must be shared among the community. Another rule is that no hunting of forest animals is allowed during the breeding season. The Karen will not fish between June and August. This is the period when the fish spawn so the prohibition of fishing allows there to be a greater number of fingerlings.

Traditional **Baka** hunting and gathering practices are also aimed at sustainability. The Baka damming fishing technique is highly selective as it allows the harvesting of only those fish of an appropriate age and size for consumption, while the young fish are left to ensure the reproduction of the species. The sustainability of this technique is enhanced by the fact that the catch is intended only for personal consumption. The volume fished remains fairly low as the women ensure that sufficient fish are left in order to allow for stock renewal during their river rotation. Hunting with the spear, the traditional hunting method, is very compatible with conservation activities and sustainable management of wildlife resources given its high selectivity. The Baka *'never kill females and the growing young ones. They (the Baka) know better than anybody else the period when females are generally suckling their young'*. These methods are under pressure, however.

In the Sundarbans, some of the rules followed by the **mouals** when collecting honey include: cutting a section (about two thirds) of the honeycomb, leaving the rest for reproduction; making sure that no young bees are killed; and squeezing beehives by hand. When the traditional **bawalis** cut wood, they are guided by their principle of maintaining sustainable use of the forest. They usually cut wood where there is abundance. They do not cut the young, straight trees. They cut only those trees that have very limited possibility of growth. No young, small tree should be cut or harmed. Other rules to ensure sustainable harvests of wood include: leaving at least one stem/shoot in each clump after cutting; goran stems that are 2.5 cm in diameter and 2.25 m in length are separated out as poles and the remaining stems are classed as fuelwood; once bawalis have harvested wood from an area, they will not use this area for harvesting in the following year, but will harvest wood on a cyclical basis so that there will be adequate regrowth of the plants.

The leaves of the golpata can be harvested from the third year of growth onwards. An annual harvest of two to four leaves can be continued throughout the life of the plants, since two to four leaves regenerate every year, depending on the area where they grow. Golpata needs to be harvested annually, otherwise leaf quality as well as yield deteriorate. Golpata harvesters also follow several rules for resource reproduction, for instance: exploitation in any area is not allowed more than once a year and is not allowed during June-September, which is the growing period; only the leaves that are approximately nine feet



A moual harvesting honey in the Sunderbans
© Maurizio Farhan Ferrari

long are to be cut; the unopened frond (the central leaf, locally called *maij pata*) and the leaf next to it (locally called *pash pata*) in each clump must be retained. If the collectors cut all the leaves in a clump it will permanently vanish from there, because the bush is unable to produce *golfa* (nypa fruit); flowers and fruits should in no way be disturbed when cutting leaves.

Some of the customary practices that the **traditional fishers** maintain for sustainable harvesting include: not catching fish fry; not using *jal* net (very small-meshed net); using big-meshed net for rivers, and small-meshed net for ponds or closed water bodies; not catching all species of fish, nor smaller fish; and avoiding fishing in the spawning period.

Avoid taboo, sacred or otherwise special areas or species

The **Kaliña** and **Lokono** have certain animals and plants that are to be avoided altogether. These include *tapijt* snakes (boa constrictors), manatees, dolphins and river otters.

'If you kill one, knowing that it is a *tapijt* snake, its spirit will haunt you and wipe out your whole family'. Sea turtles also fall within the category of animals that may not be killed because it is believed that the grandfather (guardian spirit) of the sea turtle will become angry and will make the guilty person, or his family members, ill. Within the indigenous territory of the Lower Marowijne there are also certain places that count as sacred or spiritual sites. These areas are either completely avoided or only visited for hunting or fishing during the day, not at night, or alternatively only entered by a *piay* (shaman). The case study contains numerous stories of the dangers occurring in these 'haunted' places.

Various trees, such as the *takini*, *kumaka* (kapok tree), *uremari* or *urewari*, and the *kwasini* (fig/forest cotton) may never be cut down. In their case study, the Kaliña and Lokono explain: 'From generation to generation it was passed on and told that evil spirits live in these trees and if you cut that tree, that spirit will do you harm'. No agricultural plots are created where these trees grow and the areas are avoided, especially where these trees are numerous.



Sea turtles are not caught or eaten by the Kaliña and Lokono © KLIM

The *takini* and the *uremari* play an important role in the work of the shaman. The juice of the *takini* is drunk and the bark of the *uremari* is used to make the cigars that the shaman uses during his sessions.

The **Wapichan** also have certain 'sensitive places' in their territory that are occupied by spirit keepers and other spirits. These should not be disturbed if it can be avoided. Places such as big lakes, certain mountains, areas with rock engravings, rocky outcrops and some mineral springs are especially sensitive. Wapichan tend to avoid these areas that they call *akaa ki kiizai* (dangerous places). If someone wishes to visit such an area, then ritual precautions must be taken that involve *powan* ('blowing') the person. Failure to follow the proper procedures can cause a person to *shokordianni amazada* (offend the spirits in a place). Fishermen also avoid certain stretches of river and some perennial *baoko* (deep pools) inhabited by *kadorari* (water spirits). Trees that are considered 'spiritually dangerous' are avoided and the rule says 'do not fell such trees'.



Thi per thaw spring, believed by the Karen to be protected by a fierce spirit © IMPECT

There are some forests that the **Karen** have declared as *pga ta deu* (taboo forest), which cannot be used to perform any activity that will disturb the ecology. Often there are frightening stories or accounts regarding such places that have been passed down from generation to generation. The people believe that powerful spirits known as *ta meu* or *ta kha* inhabit the forest. There might be other guardian spirits of sacred things or tutelary deities who want to protect the forest. A second category of forest based on spiritual beliefs is *du ta* (forests with powerful spirits). Among these are *tu ta eu*; areas that villagers have once cultivated where dangers and misfortunes have occurred. It is believed that the spirit is forbidding further cultivation in that area and the villagers are afraid to continue farming there. A third category of forest in this class is *du pga* (forest to be protected and safeguarded). The *du pga* is also a refuge for wild animals and has high ecological fertility. No big trees should be cut here. It also serves as a barrier beyond which the Karen will not expand their cultivation areas.

The *thee kho me* is forest surrounding the headwater springs above agricultural areas. These are areas of fertile forest that are moist all year. It is believed that the spirits of the forests and mountains inhabit these areas, that they are the source of the headwaters. These areas are conserved and not used for agriculture. It is forbidden to disturb or perform any activity in any of these areas. Equally, the

Karen have seven categories of water based on their spiritual beliefs, such as *Thi mae ker la* (crystal water basins), *Thi per thaw* (springs), and *Na u ru* (water coming out of a hole). Each of these places has its own spirits and rules for use or staying away. Some particular species, such as the sacred fig, the banyan, and *Hopea odorata* are believed to have fierce lords. The Karen also believe that this is the tree of human life. The Karen consider some animals *acho aker maw ko* (high status), such as tigers, barking deer, jungle fowl and wild cattle. Great care must be taken in hunting these high-status animals. The Karen believe that representatives or spirits of the animals, or water and land spirits, can take the form of these animals, hence their high status. The Karen also have taboos and customs regarding firewood. For example, if the wood from the *ton khoh tree* is used for firewood, the tree's spirit will cause the family to be unhappy.

Control mechanisms

Although the rules, or 'indigenous customary law', have not been written down in most communities (prior to the research for these case studies), most community members know and respect them. Nevertheless, there are several control mechanisms that ensure compliance with the rules.

Dependency

The fact that communities are traditionally dependent on the resources for their very survival is in itself a stimulus for sustainable use. As the **Karen** say: failing to conserve these resources is like destroying your own life. For the Karen it is essential to rely on forest resources for their livelihood. The **Wapichan** people also say that they have a responsibility to *karodopan* (care for) the land and its resources in order to maintain abundance for present-day communities and for future generations, who they call *wa daini nyao ati'i nii* (those coming behind us). Fishermen from the Suriname study said 'if you kill all those fish, what will you eat tomorrow?'

Internal control

Internal controls by traditional institutions or elders (for instance warnings and sanctions), or control (or criticism) among community members are also effective.

The **Karen** have 'guardians' of the regulations who operate on many levels. At the community level, the traditional village leader, the *hi kho*, is the main guardian of the village code. For example, when the planting season arrives, the *hi kho* will set the date and time and prepare the New Year ceremony, ('*nee saw kho*'), by telling the people in the community to prepare themselves. After this, the *hi kho* reminds them to act well, to work hard and not to create situations that bring trouble to the community. When the time comes to choose the area to plant the swiddens, this is done after paying respect to the natural resources, which are requested to share their bounty and help build good things with the families and the community.

Similarly among the **Kaliña** and **Lokono**, the customary rules are enforced by internal control. The village administration also plays an important role in complying with and enforcing traditional rules. Under the Wapichan system of land tenure, local family heads hold prior rights and jurisdiction over the farming grounds that they and their extended family occupy and use. In the eastern and southern part of the territory, there are owners of personal hunting lines. A *kaponaa tin pia'o* (hunting line owner) is recognised as the person who cut a particular line (or his descendant). This person has prior rights over access to his hunting line, as well as a responsibility for sharing its use and for overseeing the proper exploitation of the associated *tiwaapa kiizai* (hunting ground). *Kaponaa tin pia'o nao* emphasise that they keep a watchful eye on who is using their line and try to check on the contents and size of game bags if hunters pass near by on their return home. Local line owners thus fulfil a monitoring role as they assess the abundance of game through personal observation and through their knowledge of the approximate numbers and kinds of game killed along a line over a certain period of

time. If a hunter takes too many animals, line owners explain that they feel 'hurt' and will advise the hunter to be more moderate in the future. In the western and northern parts of the territory, where there are few individual lines, hunting is mostly centred on particular mixed hunting and fishing areas known as *tapaoraz*, which are reached via community lines. These hunting and fishing areas are associated with local family heads, who traditionally watch over and care for the game, fish and other useful resources in their area. These local leaders are sometimes referred to as *pidan tapaoraznao* (people of the hunting and fishing grounds), and are respected members of the communities. They have intimate knowledge of the resources and wildlife in their neighbourhood, and hold important spiritual knowledge about the locality.

Traditional decision-making processes are today articulated with elected Village Councils and District Toshao Councils, which function to manage their collective affairs. The Toshao is thus often involved in internal consultations on resource use, especially where they involve decisions about the extraction of timber, craft materials or bush fruits needed for community work. For instance, the customary norms and rules related to fishing with poisons are today overseen by the Village Councils as well. If rules on resource use are broken, traditional sanctions may involve ridicule, ostracism, verbal chastisement in public, or imposed village labour, coupled with a warning from the Toshao.

Role of spiritual beliefs

Many **Kaliña** and **Lokono** believe that if the balance between man and nature is upset, by incorrect or excessive use, there will be 'spiritual sanctions' in the form of diseases, accidents or misfortune that the violator or his family may suffer.

If you do not comply with the rules, the following things may happen: you become ill, you lose your way and never return home; you have an accident in the forest, for example, a tree might fall on you.

The shaman, who is called the *piay* among the Kaliña and *semechichi* among the Lokono, plays an important role in maintaining this balance. He (or she) is the person who has contact with the spiritual world and through the medium of his or her guardian spirits or guide spirits (K. *jakoewa*) discovers whether someone has acted wrongly or made a mistake. The shaman then acts as intermediary, with the help of these *jakoewa*, to seek forgiveness for the violation committed.

The **Karen** have the rule that trees that are used as offerings for the spirits of the cattle and buffalo (*ta peu jaw a thoo*) are not allowed to be cut or used for anything else. If anyone breaks this taboo, he or she will be punished by the guardian spirit or the spirits of the forest and mountain. The **Wapichan** also believe that those who break customary norms risk spiritual punishment from spirits of the environment that may cause illness and misfortune. Respect for cultural norms on proper social behaviour also stems from the widespread and complex belief in supernatural *kanaimo* spirits who bring sickness and death to those who have wronged them.



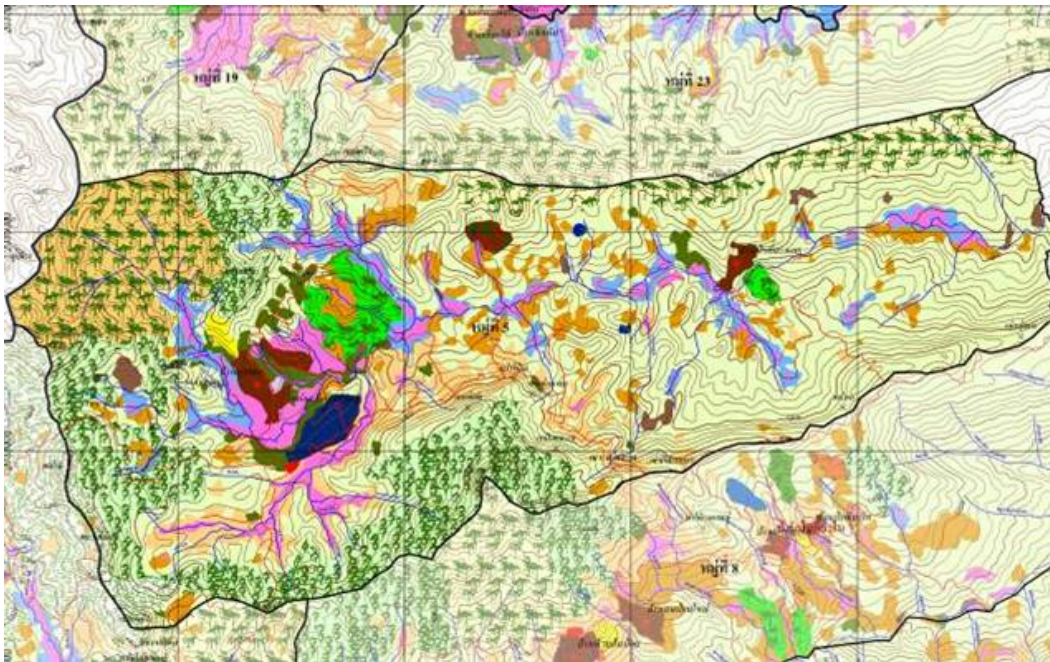
Ronnie Thomas is a Wapichan elder who watches over and shares traditional communal hunting and fishing grounds around his homestead near the Takatu river
© Wapichan communities

Challenges and threats to customary sustainable practices

The customary sustainable practices described above are in many cases under pressure or threat for various reasons. These are indications that in the local and national context, implementation of CBD Article 10(c) is not yet effective. Some key issues and challenges are summarised below.

Lack of secure land and resource rights

Secure rights to land, territories and resources - including access, control and management of those resources - represent a fundamental requirement to enable the communities to maintain and practise their customary use and traditional knowledge in their daily interaction with the biodiversity around them. Customary use and practices cannot be disconnected from the natural resources in traditional lands and territories. However, the communities do not have secure land and resource rights, and this is a threat to their customary use systems.



Participatory map produced by the Karen community of Mae Te Ki (Khun Tae) in Northern Thailand illustrating various land use and the extent of forest cover and strict conservation zones in their territory. The Karen do not have secure land tenure over this land and their future has been uncertain as part of the land is overlapped by two protected areas. However, in 2009 the community has been selected and included in a government pilot scheme to explore the concept of collective land rights in Thailand. © IMPECT

In the highlands of **Northern Thailand**, the lack of title to agricultural and residential lands is one of the main problems affecting the two tribes and is causing insecurity in resource management. This is a result of Thai laws that have placed certain areas under the direct administration of government agencies, such as the laws concerning National Reserve Forests, National Parks, Cabinet resolutions and the Land Act. These laws have created obstacles for highland communities seeking to claim their rights. The Forest Act of 1941, for instance, defined as 'forest' any land to which no individual has laid legal claim (even if the land in question was not actually forested). Since the highland areas where

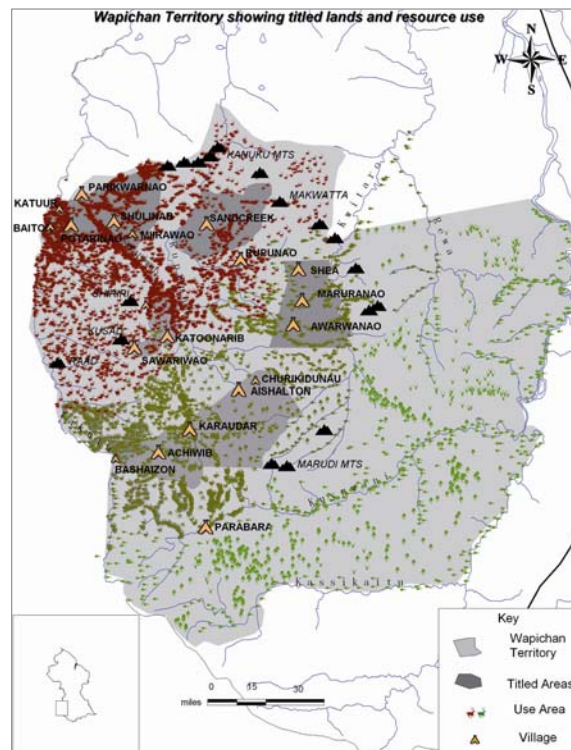
tribal people live had not been surveyed and no title deeds had been issued, they were now considered forest and State property, negating the land and resource rights of the tribal peoples. Although a number of articles of the 1997 Thai Constitution do provide legal protection for communities to participate in the use and conservation of natural resources, and support indigenous peoples' access to natural resources and biodiversity, the main challenge is to achieve the implementation of these positive constitutional provisions. In reality, in Thailand there is little political will to implement key laws regarding indigenous rights to natural resource management. There has been no revision of the relevant forestry laws to bring these into line with the CBD and the constitution. The government continues its strict enforcement of forestry laws, which in some cases results in the arrests of tribal people and the relocation of communities out of the forest. Only during the past year has a new pilot project launched by the government to explore the concept of collective land titling started to give some hope to indigenous and local communities.

Indigenous peoples' right to collectively own, control and manage resources is not recognised in **Suriname's** laws. The indigenous territories are legally classified as 'State lands', so in formal terms, the state owns, governs and manages all lands and territories. In some villages (individual) titles have been issued to outsiders, allowing city dwellers to own the best properties along the river, thereby reducing access to the river for community members to moor boats, fish, bathe or wash clothes.

Lack of secure land and resource rights is also a major and long-standing livelihood issue affecting **Wapichan** communities. In 1976, ten Wapichan communities received title to part of their lands. These titles were issued without regard for Wapichan traditional occupation and use of their lands and resources. As a result, five communities do not have title to land while the rest have title to only parts of their traditional lands. Over half of the Wapichan's major and minor settlements and a large part of their customary farmlands, hunting, fishing, and gathering grounds lack the protection of legal land title. The communities stress that they have inherent rights to their lands because they inherited them from their forefathers and that a secure land base sustains the Wapichan way of life.

'We need all of our lands: the forest, the savannah, the mountains and the bush islands.

We need all this land to live according to our traditions. Without our lands our children could no longer live like our dokozi^{nao} ('grandfathers').



Map of the Wapichan territory showing the traditional territory in light grey and the areas under limited title in dark grey © Wapichan communities

The leaders also point out that the existing titled land area is too small to provide an adequate land base for the practice of sustainable traditional livelihoods. One problem, for example, is that cultivated land within the titled areas is becoming exhausted.

The **Baka** predominantly face problems resulting from the fact that substantial parts of their traditional lands have been designated as protected areas, leading to a serious reduction in lands they can access and use (see 'imposed protected areas' below).

The traditional resource users of the **Sundarbans** have no resource rights inside the forest. They rely on seasonal permits to harvest and collect resources and are literally at the mercy of Forest Department officials, money lenders and influential people in order to obtain permits and means to enter the forest. Often they do not manage to obtain a permit to use and harvest forest products, whereas outsiders with commercial intentions do get permits. Rights to land in villages adjacent to the forest have in recent years been severely affected by the expansion of shrimp/prawn farming. Prawn farming is one of the major reasons for the permanent waterlogging in the south-west region of Bangladesh. The prawn farm owners have taken most of the *khasland* (common property covering land and water) for farming. Previously the communities depended on these lands during crisis periods. Today they have no access to them. The traditional resource users argue that landlessness is a serious problem in their communities. Poverty, population increases, and land-grabbing by the influential people are the main reasons for local landlessness.

Lack of recognition of customary laws and institutions

As noted under 'Control mechanisms' above, customary institutions (such as village councils) enforce customary laws and ensure they are respected. However, if these customary laws are not respected and recognised by national or local governments and laws, customary practices may become undermined. For instance, the traditional authority of the **Kaliña** and **Lokono** has never been legally recognised by the national government. Nor is the traditional, unwritten law recognised. As a result the village leaders are unable to enforce their rules *vis-à-vis* outsiders who do not comply with the community rules, such as sport hunters who shoot game and then leave it behind to decay. The new Amerindian Act in Guyana also precludes legal recognition of the collective jurisdiction of the District Toshias Councils over the full extent of traditional **Wapichan** lands and territory.

Imposed protected areas and conservation policies

The establishment of protected areas without respect for forest peoples' rights and their full and effective participation is posing challenges to indigenous and local communities in terms of both access to and management of biological resources. This again has major impacts on the customary sustainable use and related knowledge by the communities of these areas.

Analysis of the maps created by the **Baka** communities shows the close relationship between the Baka people and the forest and its resources in what is now the Dja Biosphere Reserve and its importance for their livelihoods. But the Forestry Law has imposed restrictions on most Baka activities both in and around the Reserve. Protected area management in Cameroon is defined by Law No. 94-01 of 20 January 1994 on forestry, wildlife and fisheries, and by Decree No. 95/466/PM of 20 July 1995 which establishes the conditions for the implementation of wildlife regulations. According to this decree, a wildlife reserve is an area set aside for the conservation, management and pure propagation of wild animal life, as well as for the protection and management of its habitat. Hunting is forbidden, except by authorisation of the Minister responsible for Wildlife, as part of duly approved management operations. Human dwelling and other human activities are regulated or forbidden. These provisions greatly restrict the Baka's access rights to the forest resources of the Dja Biosphere Reserve. If, in

theory, *'The pygmies are free to hunt within the reserve using traditional methods'*, in practice, the Baka of the Canton Dja in Bengbis are subject to daily harassment and persecution by forest guards. Their customary land rights are ignored, making them illegal occupants of their own lands. The recently established Boumba-Bek and Nki National Parks (2005) similarly overlap the traditional territories of Baka hunter-gatherers in south-east Cameroon. The Baka people are currently prevented from entering their forest for subsistence. During the last few years they have created maps to demonstrate their customary sustainable use of these areas. A process of dialogue was started, which focused on gaining respect for the Baka's customary rights in the protected area, and on involving the Baka in the management and decision-making relating to their customary lands. Recently, a MoU has been drafted by the WWF, which is involved in the management of the National Park, to be signed by the government and the Baka. This would constitute a framework for the respect of the rights of the Baka in the Park, called "The exercise of use rights of indigenous Baka communities in the Boumba Bek National Park and surroundings". The main objection to the current draft MoU is that it talks about access and benefits for the Baka, but not about land rights and other customary rights. These objections are being addressed in the current consultation process.

In Northern Thailand, the establishment of two national parks which partly overlap the traditional territory of the **Hmong** and **Karen** indigenous peoples (Doi Inthanon and Ob Luang National Parks) have caused many problems for the Karen and Hmong's customary use practices in those areas. The Wild Animal Conservation and Control Act of 1960 created conservation areas for forest animals by banning people from occupying, cutting trees, or clearing land. These are all vital activities on which the livelihoods of local indigenous peoples depended. The National Park Act of 1961 created additional areas where people were forbidden to perform any activities. When these national parks were created, communities living in those areas were not informed or consulted, leading to significant problems. The National Forest Preserve Act of 1964 allowed local officials to demarcate the boundaries of protected forest themselves without consultation with members of the public, effectively turning many villagers into illegal trespassers. The Doi Inthanon National Park was declared in 1971. The establishment of this park affected villagers in Mae Ya Noi and Mae Pon Nai, who were then forbidden to practice swidden cultivation. There have been arrests in neighbouring villages for defying this ban. The park's main impact on these villages was labour out-migration as a result of the very limited access to ancestral lands.

In **Bangladesh**, the Sundarbans Reserve Forest has been exclusively under the strict control of the Forest Department as a protected forest since 1879. The Bangladesh study highlights the fact that traditional resource users are forced to bribe the Forest Department to access forest resources. The protected forest is managed in a top-down manner that denies traditional resource-users any voice in management and decision-making. According to the respondents in the study, it was the colonial Forest Act of 1927 that gave excessive powers to the Forest Department and led to corruption and mismanagement. Since then, the Forest Department has targeted the poor resource extractors at the bottom rung of the chain, while wealthy individuals plunder the forest resources. The First National Conference on Participatory Management of the Sundarbans, held in May 2009 in Khulna, called for a new governance system of the Sundarbans based on respect for forest peoples' rights and their participation in decision-making and management.

Two protected areas have also been established in the territories of the **Kaliña** and **Lokono** communities in Marowijne (**Suriname**), without informing the communities or seeking their consent. This has been having negative effects on the communities' use of and access to the areas concerned.

More detailed studies have been produced specifically on the issue of protected areas and indigenous peoples' rights in Suriname, Thailand and Cameroon, available online.⁴ Case studies from other countries (such as Panama, Uganda, Malaysia and the Philippines) can also be found here, together with other information on the issue.⁵



Satellite photo showing boundary of Ob Luang National Park cutting through a hamlet and Karen agricultural fields. Park boundaries were drawn in the city without consultation with indigenous communities.



As a result of the community mapping project and the government Joint Management of Protected Areas (JoMPA) project, land posts have been placed by communities in collaboration with park authorities to demarcate agricultural land from forest and park areas.

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Lack of recognition and respect for the importance of customary sustainable use for biodiversity protection

The case studies demonstrated that customary sustainable management of natural resources is often ignored in conservation or development policies and programmes: these do not support or promote communities' traditional ecological principles and knowledge about sustainability and conservation. Lack of appreciation of customary sustainable management of natural resources frequently results in top-down natural resource management and conservation approaches that exclude customary practices. In the long term, this can undermine the vitality of these systems. In many cases, the situation is even worse; biodiversity loss is unjustly blamed on the activities of indigenous peoples and local communities, an accusation which is then used to justify further restrictions on customary use and management.

In **Thailand** the practice of swidden agriculture is depicted as 'destructive to the forest'. Since water shortages have started to become a serious problem in the highlands, the state and the general public have been led to believe through continuous government sponsored media and information that 'hill tribes in the watershed areas are destroying the forests'. Highlanders, meanwhile, observe that they have practiced swidden agriculture for hundreds of years without the streams running dry and that water shortages have only started to become a serious problem after the introduction of new agricultural systems and pine plantations. Under pressure from government policies, many highlanders have reduced or abandoned swidden agriculture, and adopted cash cropping, which, as the Karen say, is disturbing the natural environment. Cash crops use much more water than swidden fields with water-retaining plants such as wild banana. Abandonment of the swidden method has further led to a decrease in plant varieties, and a decrease in the health of certain species, and

problems with weeds taking over the rice. What was originally rotational land is now used on a permanent basis. Communities doing this must now rely on agricultural chemicals, the cost of production rises accordingly, and the pesticides pose health risks to the community.

Guyana developed and adopted a National Biodiversity Strategy and Action Plan (NBSAP) in 1999. It does note the need for more research on 'traditional methods' of sustainable use of biological resources and the need to formulate appropriate indicators for the sustainability of resource use in collaboration with resource users themselves. Surprisingly, however, the NBSAP does not recognise the contribution of the indigenous peoples of Guyana to the sustainable use and conservation of biological resources. Instead, the existing national policy tends to view indigenous peoples' resource use primarily as a potential threat to biodiversity and the environment.

In **Suriname** the value of traditional knowledge in biodiversity conservation and management is hardly taken into consideration in official circles. On the contrary, in many official documents and management plans for the national protected areas, the state announces strategies to 'educate' indigenous and local communities on conservation issues and sustainable use.

In **Cameroon** the Baka's tradition of sustainable use and management of resources was not acknowledged when the Boumba-Bek and Nki National Parks recently gained recognition as 'areas of high natural biodiversity'. In the national parks management plans, the traditional knowledge and practices of the Baka are not considered or incorporated. Rather than seeking to understand the particularities of the methods used by indigenous peoples to manage forest resources, the authorities have expelled the Baka from their lands.

External pressures on traditional lands

Apart from imposed protected areas, all communities that produced a case study are facing other external pressures that impact on their access to and use of (parts of) their territories, such as mining, logging, and commercial use within their territories. Destruction of areas and/or reduced access to resources leads to a decline in customary sustainable use and traditional knowledge. In Marowijne in **Suriname**, unsustainable commercial bauxite mining and logging takes place in important community-use areas used for hunting, gathering and fishing. This has been permitted by the government without the communities having a say in it. The communities have restricted access to these areas and it has been observed that in the areas where mining or logging activities are taking place, the game is withdrawing and the fish stock is deteriorating. As a result of the construction of roads and the noise of the heavy equipment, and also because outside people are coming into the area to hunt, the game is retreating further into the forest. In addition, where logging is taking place on a commercial basis, the game population is falling. Game also diminishes where certain tree species that bear forest fruits are cut down. Another problem is the illegal fishing boats from Guyana that regularly fish in the Marowijne River estuary. They use nets that are kilometres long.

Wapichan traditional lands in the Rupununi are currently under threat from mining, agricultural development (large-scale rice and soya farming), oil exploration (Reewa river basin), logging concessions and illegal hunters and cattle rustlers from Brazil. Mining in particular is a major problem and is already causing adverse environmental impacts on (untitled) Wapichan lands. Mining activities are causing deforestation and river pollution and there are growing concerns about new mining concessions. Further threats are posed by a major paved highway planned under the Guyana-Brazil 'interconnection' road project sponsored by the *Initiative for the Integration of Regional Infrastructure in South America* (IIRSA).

Karen villages suffer negative impacts from government policies as well. This trend began in the past with the Thai government's policy of promoting the cultivation of opium in the highlands as a means of collecting tax revenues from opium production. This led to the widespread practice of opium cultivation among highland communities, using farming methods that turned over the soil and planting repeatedly on the same soil over a long period of time. These methods were traditionally considered to be wrong because they are inappropriately adapted to the nature of the land.

The **Sundarbans** ecosystem and the traditional resource users who depend on it are also under severe pressure. Influential traders in fish and wood overharvest fisheries and forest resources, and have no respect for traditional cultural practices. The big fish-traders catch all fish they can, including the fry, and even use poison to catch fish. Forest Department officials allow this in exchange for bribes. The respondents vehemently assert that Forest Department officials, dacoits, big fish-traders, wood-traders, and money-lenders are destroying the holiness of the forest. The respondents also say they believe that fish fry collection for the shrimp industry is very harmful to aquatic biodiversity and future fish stocks. The Munda (adivasi) community believe the outsiders have destroyed the whole ecological and social balance of the area, and now have extremely limited access to forest resources. The increasing ecological degradation of the Sundarbans' resources during the past two decades has been denounced by environmental groups and recognised by the government and international bodies. The case study points out that the loss of the Sundarbans' biodiversity is rooted in problems of governance, corruption and social inequity.



Google earth image of part of the territory of the Kaliña and Lokono showing the impact of mining and road construction



Mining concession impacting on Kaliña and Lokono traditional lands in Marowijne, Suriname
© KLIM

Lack of recognition of FPIC

Indigenous and local communities' right to free, prior and informed consent (FPIC) is important to the protection of customary sustainable use against external threats such as the activities of extractive industries. These can destroy the areas where indigenous and local communities practice customary use and of which they have traditional knowledge or deny them access to these areas.⁶ However, in many countries FPIC is not institutionalised (not reflected in national laws) and not applied (and not fully understood).

Mainstream education and assimilation policies

In the case studies, the communities describe that when they transmit traditional knowledge, three aspects are particularly important: the language; access to areas; and learning by doing. This can, for instance, be illustrated by the **Baka** practice of *Molongo*: this is an expedition or walk, into the depths of the forest, which was practised in the past by the Baka of Canton Dja. These walks entailed the entire community moving into the forest for many months, or even years, and provided an opportunity for the youth to be initiated into their culture. During these expeditions, they learnt the art and techniques of hunting with the assegai, harvesting honey, recognising and picking tubers of wild yams, animal behaviour, mimicking the cries of animals, constructing *moungoulou*, and weaving mats, baskets, etc. *Molongo* now rarely exceeds a month. Several factors contribute to this, including the process of adopting a sedentary lifestyle with all its accompanying constraints (see below), reduction of available space because of conservation projects, and the influence of 'modernity'. The languages in particular are essential as they capture the specific knowledge the communities have related to the natural resources and their use. The Baka for instance have many terms for particular kinds of elephants and honey, which cannot be translated or explained in another language. Loss of language leads to loss of biodiversity knowledge: other languages cannot explain the concepts. Education in their own language and on issues that relate to their environment and related knowledge and practices are therefore vital to maintain customary sustainable use and traditional knowledge. Many current education systems however, are aimed at assimilation and are imposing non-indigenous languages on indigenous children in the schooling system. This can lead to the loss of indigenous languages, local knowledge and related practices.

Education in **Suriname** is almost entirely conducted in a language foreign to the communities (Dutch) and from a foreign culture (town culture). Education also makes it less easy for children to accompany their (grand) parents to get practical experience (during hunts, while fishing). Due to this the traditional rules risk being lost. In Guyana, any use of Amerindian languages in class was forbidden under previous school rules for many years. This weakened the use of the mother tongue among younger people, who have come to use English as their first language.

External interventions aimed at assimilation of indigenous peoples into mainstream society in general ('development', 'education', Christianisation, etc.) are equally undermining the indigenous communities' traditional management systems.

These developments are probably most visible among the **Baka**. For a very long time the Baka, the oldest inhabitants of Cameroon's equatorial forest, have lived from hunting and gathering. Traditionally, they lived in small camps in the forest, moving every three to four days. Under the impact of the policy of sedentary settlement instigated by the colonial administration and pursued after independence, they have gradually settled along the pathways in Bantu villages. Governments have also made many efforts to convert the Baka hunter-gatherers into farmers, which is more suitable for a sedentary lifestyle. The Baka case study concluded that the sedentary lifestyle forced on the Baka and the related destruction of their culture, combined with the presence of conservation projects and the introduction of money as a medium of exchange, have considerably influenced the lifestyles of the Baka in this part of the Dja Biosphere Reserve, and this forms a serious threat to the conservation and sustainable management of biological diversity.

Trapping is nowadays a widespread method of hunting. Trapping is not a traditional Baka practice, and is also incompatible with the traditional lifestyle of the Baka, which is based on mobility. However, they have learned about trapping through contact with their Bantu neighbours, especially as trapping is compatible with the imposed sedentary lifestyle. Trapping is a way for them to escape the notice, and avoid the reprisals, of the forest guards. The common feature of all traps is that they are made

from metal wire and do not discriminate between the age or size of the animal, unlike hunting with a spear or crossbow which permits the hunter to choose his prey. Moreover, each hunter sets an average of 60 traps which he is unable to monitor on a daily basis. As a result, some animals captured in traps decompose and are uselessly lost because the owner of the traps was unable to visit them. Trapping therefore appears to be a destructive method of hunting because of its non-selective nature, and also because it generates a great deal of waste. Equally, the introduction of firearms is a potential threat to the sustainable assegai method. If used incorrectly or recklessly, firearms can be destructive and constitute a threat to the protection and conservation of wild animals. Most Baka do not own any firearms themselves but some of them are paid to hunt on behalf of the owners of the weapons. Some Baka expressed that with the use of firearms, the hunt loses its cultural aspect as well.

Line fishing is strictly speaking not a traditional Baka practice either but is borrowed from the Bantu. The same goes for lobster pots and poison fishing which copy the techniques of the Bantu women. The latter technique is quite unsustainable and even harmful to human health as it is based on the use of chemical products, sometimes even pesticides, which are poured onto the surface of the water.



The *mougoulou* is a traditional Baka hut constructed to suit a nomadic lifestyle

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Since the early 20th century **Wapichan** people have adapted to new institutions such as churches and schools in their communities. These institutions have brought about changes in the settlement pattern as the villages have become larger and more permanent. Such institutions also undoubtedly had some cultural impacts. Some churches, for example, have sought to forbid their congregations from using traditional shamanic healing services, which has undermined the public role of the *marunao* 'shaman' in some communities. In Suriname, the religions that have been introduced in the villages have also impacted on the traditional knowledge. Similarly to the Wapichan experience, traditional beliefs and practices were forbidden for long periods of time, and many people who became Christians no longer know or uphold traditional rituals and practices. Moreover, the growing influence of the monetary economy (everything costs money nowadays) is also playing a role in the decline of traditional knowledge and culture. The youth in particular are looking for jobs to earn a fixed income.

The **Karen** have also seen many trends of so-called 'development' from outsiders, who view tribal people as backward, lazy, or generally 'underdeveloped'. All of these policies share a common objective: to change the lives of highland communities to conform to the expectations of outsiders. This constitutes an entirely top-down approach to planning, implementation, and decision-making. An important 'solution' proposed by outsiders is the cultivation of only a few cash crops. As a result, great changes to the Karen way of life and methods of production have occurred. Specifically impacting on tribal people in Thailand was the National Master Plan for Highland Communities and Environmental Development and Drug Control (first enacted in 1992). The principles of this Master Plan are essentially based on prevailing and unfair stereotypes of tribal people as destroyers of the forest and drug smugglers, and it promotes modern agricultural practices that are known to be ecologically harmful and are not in line with traditional agricultural practices.

This type of community development causes complex problems, including the use of agricultural chemicals in highland areas, intensive use of land, water, and forest resources, labour migration of young men and women, lack of control over the price of produce, debt, and an overall decrease in feelings of safety and security. The introduction of religions different from people's traditional beliefs has also had an impact on the communities' customary use and traditional practices. Some villages have been influenced by Christianity, which has resulted in discontinuation or an initial devaluing of the communities' traditions, beliefs and practices, although, over time, many groups adapted their new beliefs to the traditional beliefs of the communities.

Community initiatives to enhance implementation of Article 10(c)

Rather than waiting for governments and others to implement Article 10(c), the communities are taking active steps themselves to do so and to support and accelerate this process. They have done a lot of preparatory work and compiled information which will make it easier for governments and others to understand Article 10(c) better and carry out the requirements associated with effective implementation of 10(c). One example is this report and the respective country case studies about customary sustainable use of biological diversity which this synthesis is based on. By describing and explaining what customary sustainable use is, and what customary rules and laws are, the communities are providing more insight into their customary management systems, and what is needed to maintain them. They hope that their work will contribute to increased understanding and acknowledgement of the value of customary practices and traditional knowledge in relation to biodiversity conservation and sustainable use, and of the important role of customary laws and traditional institutions, and that this will lead to concrete actions to recognise and institutionalise these. The information has been shared with national and local governments in the participating countries, as well as at various CBD meetings during official sessions, side events and in (news) articles, to raise awareness of the issues and to influence national and international-level debate and decision-making about implementation of Article 10(c).

Another initiative taken by the communities, which was briefly mentioned under 'methodology', is community mapping of land and resource use. The maps that the communities produced demonstrate their traditional occupation and customary use of resources in their territories. The maps were produced by the communities themselves making use of GPS and GIS technology. All technology has been set up at the local level and adapted to local needs and circumstances. In Cameroon, for instance, innovatory GPS technology was designed specifically for use by non-literate Baka hunter-gatherers to document their traditional forest use, based upon touch-screen Pocket-PCs incorporating a new software based around a series of icon trees representing categories (such as wildlife, landscape features, human activities etc.) defined by the Baka themselves. The basic rule for the use of this

technology is that only those who actively use forests can collect data on forest use. This process is very effective in enabling communities to visually capture and present their customary forest use.

In combination with village-level capacity building, the communities use participatory mapping as the basis of a territorial defence strategy: the maps are used as a tool at the local and national levels to assert more secure land and resource rights and to support the communities in dialogue and negotiation processes with outside actors who want to access forests traditionally inhabited or used by them, which can endanger their customary use of these areas. For example, community maps have contributed to re-negotiations of protected area management plans in Cameroon and Thailand, exposure and monitoring of illegal logging in Cameroon, and negotiation with mining and logging companies in Guyana, Suriname and Cameroon. Participatory videoing is another initiative some of the communities have taken (for instance in Cameroon) to demonstrate customary use in indigenous territories, and in particular the problems caused by overlapping protected areas which restrict customary resource use by Baka people.



Baka learn how to work with touch-screen GPS computers that are marked with symbols which they can press to record an important site or resource. © OKANI

The traditional resource users of the Sundarbans mangrove forest in Bangladesh are developing, with support of NGO Unnayan Onneshan, an initiative to increase their access to the forest resources. As was explained before, the Sundarbans is a Reserve Forest, which no-one is allowed to enter or use without a permit. The traditional resource users, who are traditionally dependent on the resources of the Sundarbans for their livelihoods, and who have used the resources in a sustainable way for generations, need to obtain a permit in order to be able to harvest or use resources. However, in reality, the permits are often issued by corrupt officials to outsiders, who harvest resources from the forest for commercial purposes, while the real forest users do not get a permit. To address this issue a project was started to identify the real forest resource users; the 'Participatory Model for Identification and Recognition of Forest People (ParMoRec) in the Sundarbans.'

Twenty indicators were developed to identify the real forest peoples, who use the forest for their livelihoods, so that they can receive the permits they need. The identification initiative received support and cooperation from local government officials and forest officers. The goal of the process is to support the traditional resource users to secure access to resources and to secure legal recognition of the traditional forest users, as well as to ensure sustainable resource management of the Sundarbans.

Several communities are also getting involved in joint or collaborative resource management initiatives together with governments or others. In Thailand, for example, the communities decided to join in the government-coordinated 'Joint Management of Protected Areas Project' in Ob Luang National Park which overlaps with their traditional territory. Through their involvement, for instance by identifying farmland boundaries and forest areas, and demarcation of land use in the forest areas, the communities were able to address their problems and issues related to access and resource use in and around the protected area and to become more involved in the decision-making and management of the protected area.

The communities are also initiating activities to protect and maintain their traditional knowledge and customary practices relating to biodiversity conservation and sustainable use. The community-based research for this project has contributed to safeguarding customary knowledge and practices for future generations and the documentation process has led to a revival of interest and enthusiasm for traditional biodiversity knowledge, in particular among the youth. The transfer of knowledge and skills to children and youth is considered very important by the communities and the information collected during the research is used to feed into various educational programmes for indigenous children. In Thailand, for example, the Karen and Hmong organise youth camps to pass on indigenous culture and knowledge related to the environment, and are setting up community cultural centres to provide a space for the elders to teach cultural practices to the youth. They are also working to develop a local indigenous curriculum focussing on traditional knowledge and customary use of natural resources, to complement the standard national school curriculum.

In Suriname, the communities are developing educational school material based on the information collected for this study and are raising awareness and initiating discussions about intercultural and bilingual education (IBE) among parents, teachers and school boards in Suriname. The communities also organise yearly Indigenous Education Festivals during which children learn traditional skills from parents and grandparents. The participatory mapping also contributed to the revitalisation of traditional knowledge as younger people worked with elders to collect the information for the maps.



Transmission of traditional knowledge to youth in Thailand (left) and in Suriname (right) © IMPECT and KLIM.

Finally, and looking into the future, some of the communities are using the data collected to develop community-based sustainable territorial management plans aimed at securing economic livelihoods, cultural survival and revitalization and the objectives of the CBD.

Conclusion and recommendations

Generations of interaction with nature in certain territories have resulted in the extensive knowledge held by indigenous peoples and local communities about the natural resources in these areas, and their management systems are based on these experiences and knowledge. Customary sustainable use of biological resources is associated with sophisticated insights into climate, soil and water conditions, species and their habits in certain areas and seasons, and the most effective methods of harvesting and use. Use and conservation are subject to customary laws and rules, which are guided by the spiritual connection with the land and the desire to preserve the resources for the livelihoods of current and future generations. Traditional institutions play an important role in the enforcement of these rules.

It is evident that customary use is so closely related to a certain territory that it cannot simply be moved and replicated somewhere else. The connection with the land is very strong. Secure tenure and access to lands and resources is therefore vital in order to practice and maintain customary use. As this report describes, access to lands and resources has nowadays become very problematic for many indigenous and local communities. They have no secure land and resource rights and/or face outside encroachment by logging, mining, protected areas, plantations, dams, and so on. Educational policies and programmes are frequently working against the transfer of traditional knowledge and skills to the youth. Customary practices are often not valued and not incorporated into conservation programmes by governments and others, and communities seldom participate effectively in official 'conservation and sustainable use' initiatives. These situations endanger indigenous peoples and local communities' traditional knowledge and practices and their livelihoods in general.

Parties to the CBD have agreed, under Article 10(c) of the Convention, to protect and encourage customary sustainable use of biodiversity by indigenous peoples and local communities. If implementation of this article is to be done seriously and effectively, all of the above issues need to be taken into consideration and to be addressed. This report has tried to clarify how all these aspects are impacting on customary sustainable use. Below, the communities summarize once more what the requirements are if the Parties are to fully implement Article 10(c):

1. Take measures to recognise and respect indigenous peoples' rights to their lands and resources.
2. Recognise the role of customary law and traditional institutions and freedom to use customary laws related to biodiversity use, rather than rules or laws imposed by others.
3. Recognise the right of indigenous and local communities to fully and effectively participate in natural resource management and decision-making.
4. Take concrete actions to acknowledge the value of customary practices and traditional knowledge in relation to biodiversity conservation and sustainable use, for example by reviewing and reforming national policies and laws to make them compatible with and supportive of, the protection of customary use and traditional knowledge.
5. Ensure that FPIC becomes a well-understood and generally applied principle in all matters affecting indigenous peoples' lands and territories.
6. Address all cases where protected areas have adversely affected indigenous peoples' customary sustainable use.
7. Educational policies and programmes should be culturally appropriate and should promote the use and revitalisation of indigenous languages and traditional knowledge.
8. Use the United Nations Declaration on the Rights on Indigenous Peoples and related human rights instruments as the basis for the full and effective implementation of Article 10(c) of the Convention. These provide a framework for respecting the fundamental human rights of indigenous peoples, as well as providing a legal and environmental basis for protecting and encouraging customary sustainable use.

As was described in this report, the communities have already done a lot of work themselves to support the realisation of the above requirements. They have compiled lots of important information and data and have shared their views with responsible governments and agencies as much as possible. They are very willing to further support governments and others in the implementation of this important aspect of the CBD. As Article 10(c) is about the practices and livelihoods of indigenous peoples and local communities, they must be a natural counterpart to its implementation.

¹ See Decision V/24 and Decision VII/12

² A similar study was carried out in Venezuela; the findings are not reported here, but the full case study is available at:

http://www.forestpeoples.org/documents/conservation/Ven10c_jan04_full_eng.pdf

³ <http://www.forestpeoples.org/documents/conservation/bases/10c.shtm>

⁴ Suriname: http://www.forestpeoples.org/documents/conservation/wcc_suriname_pa_review_oct09_eng.pdf

Cameroon: http://www.forestpeoples.org/documents/conservation/wcc_cameroon_pa_review_jul09_eng.pdf

Thailand case study forthcoming.

⁵ http://www.forestpeoples.org/documents/conservation/bases/parks_base.shtml

⁶ More information and publications on FPIC can be found at

http://www.forestpeoples.org/documents/law_hr/bases/fpic.shtml