‘Washing out Diversity’:
The Impact of Oil Palm Development on Non-Timber Forest Products(NTFPs), Indigenous Livelihood and Artwork in Palawan Island (the Philippines)

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"CALG is against all forms of food production that contribute to climate change and to the privatization of natural resources by agribusiness enterprises. We believe that large-scale monocultures are worsening global food crisis. We support sustainable peasant and indigenous agriculture that is rooted to local economies and grounded on local culture and traditions. We are not supporting the appropriation of public natural resources that are taken away from traditional users and put under the control of large corporations" (organization's statement).

A. INTRODUCTION

Between 30 June 2012 and 15 May 2013, ALDAW (Ancestral Land/Domain Watch) has carried out several field appraisals in six southern Municipalities in Southern Palawan, which are all being affected by oil palm development. Starting 2014, CALG took over and replaced ALDAW in most of its organizational tasks. The primary objective[1] of this report was to obtain information on the impact of oil palm development and mining on non-timber forest products (NTFPs). This main task was pursued concurrently with advocacy initiatives which, indeed, were part and parcel of the ALDAW mandate. So while research data was being collected, our field staff continued to organize local communities, extending paralegal assistance to them, while building up consensus against oil palm companies and raising awareness on the social and adverse impact of oil palm plantations through meetings and video-showing. At the same time, on May 6 2013, ALDAW launched an international call for a moratorium on further expansion of oil palm plantations in Palawan which received much support from the global community, and more than 100,000 signatures were collected online (see https://www.rainforest-rescue.org/mailalert/915/our-ancestral-land-is-worth-more-than-palm-oil).

Although the initial focus of our research was to investigate the impact of both oil palm and mining on useful plant species, most of our data, instead, had to do with the environmental consequences of oil palm expansion[2]. Since the beginning of our investigation, the majority of our indigenous collaborators had raised the following complaints: **a)** a drastic decrease of NTFPs used for making items such as *sawali* (woven bamboos for house walling) and *banig* (mats) - which are also sold in the local market, and **b)** the decline of medicinal plants and of other plant species used as house material and for the production of traditional objects. In addition to this, indigenous people from the impacted areas continuously manifested their preoccupation for the disappearance of animal species and fresh water resources which they could no longer hunt and gather due to massive land conversion by oil palm enterprises. These concerns encouraged us to narrow down the scope of our research to Pälawan plant species and their uses[3] and to focus on a limited number of indigenous communities found in two locations: Barangay Pulot (Municipality of Sofronio Española) and Barangay Iraan (Municipality of Rizal). Particularly, the Pälawan communities of barangay Pulot became our main research partners, being themselves exposed to both mining and oil palm threats.

Indigenous peoples' grievances and our preliminary research findings were presented in the course of two oil palm inter-agencies meeting that took place in Puerto Princesa City on 7 and 28 August respectively, and which were attended by representatives of local NGOs, indigenous peoples' organizations, members of oil palm impacted communities, staff of key government agencies such the Palawan Council for Sustainable Development (PCSD), the National Commission on Indigenous Peoples (NCIP), Provincial

Environmental and Natural Resources Office (PENRO), Philippine Coconut Authority (PCA), oil palm cooperatives' chairmen and two representatives of the Agumil Philippines, Inc. (the major oil palm company)[4]. During these meetings the representatives of the Palawan Council for Sustainable Development (PCSD) and of the Philippine Coconut Authority (PCA) argued that our findings had to be corroborated by more systematic and detailed scientific data. Unfortunately, at that time, our field data on the impact of oil palm plantations on NTFPs had not yet been reordered, so we were unable to present them during the inter-agencies meetings. The work of identification of plant species through detailed consultation of existing bibliography and comparison with illustrations found in botanical volumes has taken considerable time[5]. Now that most of this work has been accomplished, we hope that the data provided in this report will clearly demonstrate that oil palm development is far from being 'environmentally friendly' and 'socially compatible'[6]. On the contrary, it is contributing, in a major way, to the destruction of the resource-base on which hundreds of local indigenous communities depend, thus affecting their 'traditional knowledge', 'cultural integrity' and wellbeing.

In section B of this report, background information on the uniqueness of Palawan biological diversity and on the P**ä**lawan ethnic group are provided with particular emphasis on their upland agricultural practices, extraction of 'sago' starch from wild palms, and use of plants for basketry and the construction of other traditional items. This is to provide the reader with the necessary background information to better understand our research findings within the context of P**ä**lawan culture and traditions[7]. In addition to this, this section provides a brief description of oil palm industry in Palawan, a profile of companies and their overall target.

Section C describes our research findings with reference to the communities involved in the study. We will be visiting these communities again in the near future to strengthen their counterstrategies against the encroachment of mining and oil palm companies. On such visits, we plan to collect additional information on the traditional uses of NTFPs and useful plant species, and to double-check some of the information that had already been gathered during previous ALDAW appraisals. We consider the present study as a work in progress which will have to be constantly updated, also beyond project's termination.

Section D (conclusions), suggest that a direct relationship exists between oil palm expansion, the impoverishment of people's diet, the progressive deterioration of traditional livelihood and the interruption of cultural transmission on specific aspects of people's knowledge. This section also analyses some of the possible reasons behind the weak engagement of civil society at large, as well of national NGOs with the anti-oil palm struggle. Policy recommendations for key government agencies, important documents and the list of Pälawan plants names and uses are provided in the annexes.

B. BAKGROUND INFORMATION

B.1 The Province of Palawan and its biocultural diversity

Palawan Province, in the Philippines, has a total land area of 1,489,655 hectares; 690,000 hectares of which are terrestrial forest and 44,500 hectares are mangrove forests. It is located 7º47' and 12º22' north latitude and 117º00' and 119º51' east longitude, bounded by the South

China Sea to the northwest and by the Sulu Sea to the east. The main island is nearly 278 miles long (about 435 kilometers) and has a width of forty kilometers at its widest part. It is surrounded by 1,767 islands and islets. Its steep mountainous terrain and the very thin topsoil makes the island prone to erosion and landslides.

Palawan had a population of approximately 892,600 in 2007 distributed in its twenty-three municipalities and in the provincial capital city (Puerto Princesa). Approximately 20 percent of the total population is made of indigenous peoples belonging to three main ethnic groups: Tagbanua, Pälawan, Batak (on the main island) and Molbog (on Balabac Island). The primary sources of livelihood and income are fishing, agriculture, collection of non-timber forest products (NTFPs) and tourism. The southern part of the main island, where most mining and oil palm activities are concentrated, is also inhabited by vulnerable upland communities of the Pälawan ethnic group, which are living in partial isolation. Such indigenous communities are the traditional custodians of a unique biodiversity, which also includes 49 animals and 56 plant species, which are globally threatened with extinction, according to IUCN (The International Union for the Conservation of Nature).

It has been estimated that at least 11 of the 25 non-flying mammal species indigenous to the Sundaic region are unique to Palawan, in addition to 14 bird species (Diamond and Gilpin 1983; Heaney 1986). Overall, at least thirty-one animal species found in the province are single-island endemic, and two of them (the Palawan pheasant and two species of swallowtail butterflies) are listed in the International Union for Conservation of Nature Red Data Book (Collins and Morris 1985). The Philippine crocodile still survives in small numbers along the estuaries of the main rivers.

A botanical survey found 1,672 species of higher plants on the island, discovering an additional 153 species (Hilleshög Forestry A.B., Landskrona 1984). These are distributed within a mosaic of vegetation types, including mangrove forest, beach forest, karts forest, lake margin forest, semi-deciduous lowland forest, forest on ultramafic soil, middle altitude evergreen forest and montane forests (Hunting Technical Services Limited et al. 1985).

Few places in Southeast Asia can match the distinction of the province, home to seven protected areas, a declared “Game Refuge and Bird Sanctuary” since 1967 and a “Mangrove Reserve” since 1981. UNESCO declared the whole Province a Man and Biosphere Reserve in 1990. Included are two World Heritage Sites: the Tubbataha Reef Marine Park and the Puerto-Princesa Subterranean River National Park.

Logging was also once a thriving industry in the province while, today, there is a moratorium on commercial logging. However, illegal logging is still rampant. Palawan is also known for its rich natural gas reserves - the Malampaya gas field located 80km off the coast of Palawan with a capacity of 2,700MW and the Galoc oil field.

Today the areas being threatened by aggressive development include indigenous communities’ conserved territories, burial grounds, sacred and worship sites. The local inhabitants perceive the destruction of these historical and natural landmarks as an obliteration of their history and collective memories of the past.

B. 2 The Pälawan ethnic group

The Pälawan is an Austronesian speaking ethnic group inhabiting the southern region of Palawan Island in the Philippines. They perceive themselves as divided into two major groupings: the Pälawan of the uplands, *Pälawan ät bukid* or *Pälawan ät daja*, and the Pälawan of the lowlands, *Pälawan ät napan* (see Macdonald 1988, Novellino 2001a, Revel 1990). Some isolated communities living in the Island’s interior at the edge of the Mantalingahan and Gantong ranges have retained a higher degree of cultural

autonomy and, as of now, have limited contact with outsiders (Novellino 1999b). The total number of Pälawan amounts, approximately, to 10,000 people (see Macdonald 1988).

b.2.1 An Outline of Pälawan Ethics and Worldviews

Pälawan do not have a religious system organized in terms of fixed codes of ethics and of a structured clergy The key moral principle to which people appeal in their everyday life is known as **"*ingasiq*"** (literally compassion) (Macdonald 1988). This is the key term describing proper social behavior and thus one's ability to be generous, compassionate and to show sympathy and pity towards others (Macdonald 1988, Novellino in press a). Pälawan ritual practices which include healing ceremonies, formulas and prayers and ***deruhan*** chanting as well as curing dances **(*tarek)*** are part and parcel of what the people defines as **"*adat et kegurangurangan*"** (the customs of the ancestors) (Macdonald 1988)

The shamans **(*beljan*)** are not regarded as superior or 'sacred' persons, nor do they enjoy any particular status. They are generally normal people who are believed to have better capacities to access the invisible world and to contact 'powerful super-human beings' (***taqaw kewasa*** *or* ***diwata***) either during trance or dream. Generally the shamans' distinctive quality is related to the ability of seeing **(*memiriq*)** and extract from the patient's body those impurities causing sickness (Macdonald 1988, see Novellino 2003b). Generally, they are also experts in the use of 'medicinal' plants. The latter are often collected and used after receiving permission from their mystical owners (Novellino 1995-1996, Novellino and De Matteis Tortora 1999).

Occasionally, in its attempt of 'healing the world', the life-force of the shaman is believed to travel to the other levels of the universe (e.g. the underworld). Pälawan universe is perceived as vertically organized and divided in fourteen different layers (Macdonald 1988, Novellino 2003b, Revel 1990).

According to the Pälawan, humans possess multiple ***kuruduwa*** (souls or life-forces). The most important ***kuruduwa*** is believed to enter and fill the body through the whorl of the hair in the region of the fontanels **(*bubun*).** Only this ***kuruduwa*** at the crown of the head is associated with ***näkam*** (consciousness, discernment and judgment). The ***kuruduwa*** of the head is also the focal point of Palawan curative treatments (Macdonald 1988, Novellino 1999c, 1999b, 2003a). According to people's worldview, human health depends on the integrity of the tangible (the body) and intangible component (the life force). Hence, the loss of the ***kuruduwa*** produces a bodily and intellectual loss of balance, a disturbance to the very core of the 'self.' It makes the human body vulnerable to illnesses and to attacks by malevolent entities (Novellino 2003b). A newborn child is particularly vulnerable to sickness, as his soul is not yet firmly secured to the body, and specifically to the top of the head **(*erimpuru*)** (Macdonald 1988, Novellino 1999b, 2001, 2003a).

The most important collective ritual attended by representatives of different Palawan communities is known as ***panggaris*** (meaning 'slicing'). The ritual which appears to have been abandoned in the early nineties after the dead of Täking, a powerful shaman, is preceded by several days of gong playing **(*basal*)** and ritual dancing **(*terek*)** (Macdonald 1988). The most important stage of the ritual consists in the 'opening of the earth' with a ritual sword by the shaman. The ground is sliced eight consecutive times and - on the last time - a hole in the ground is made using the same sword. This activity is followed by various sequences that include the pouring of coconut oil **(*lana*)** in the hole, the introduction of other ritual items in the same hole [e.g. branches of ***rukuruku*** (Ocinum sanctum) the dancing of the shaman and of a virgin, the offering of newly harvested rice, etc. All these activities are associated with the action of 'cleansing the earth' from all dirty **(*meriddi*)** human behaviors, such as incest (Macdonald 1988). The cleansing of the world is also meant to avoid that a dragon like monster **(*tandajag*)** will take revenge against humans, swallowing the entire heart, making it to sink and vanish in the vastness of the universe (Macdonald 1988). The ***panggaris*** was traditionally celebrated between the months of October and November, during the flowering of those trees that are the major providers of pollen for the bees. In fact, the Palawan believe that this ceremony will also ensure an abundant harvest of wild honey (Macdonald 1988, Novellino 2001a).

The Supreme Being for the Palawan is known as ***Empuq*** (the Lord or the Owner) and he is perceived to be the creator of all things in the world. Other benevolent beings are believed to reside in the higher mountains, and in those portions of the terrestrial world, which remained untouched by the legendary flood (Macdonald 1988, Novellino 1999b). The forest is also believed to be the domain of a large number of demons such as ***sejtan*** and ***lenggam***, the latter being the caretakers of poisonous and 'biting' animals **(*rämu-rämu*)** such as ***älupjan*** (centipede), ***bäncanawa*** (scorpion), ***kätimamang kätimamang*** (mygale), ***säli*** (snakes). (Macdonald 1988, Novellino 1999b, Revel 1990). These are taboo animals, of which consumption and killing are forbidden. Any attack of ***rämu-rämu*** upon humans is said to be activated by the anger of their owners. The reasons why humans become vulnerable to ***rämu-rämu*** attacks include 'ecologically' unsound behavior such as over-hunting, harvesting of trees inhabited or guarded by certain entities, etc. (Novellino 1999b). Before clearing a forest plot, the Pälawan consult and appease various entities, and interpret omens in dreams. Certain signs are placed in the area chosen for the swidden, to determine whether the 'entities' inhabiting that particular portion of the forest are willing to vacate it. The people believe that after trees have been felled, the swidden begins to be occupied or visited by different entities. Some of them are said to inhabit certain portions of the environment only for limited periods, and to return later to their place of origin (Macdonal 1988, Novellino 2007c).

The Pälawan attribute therapeutic properties to a large number of plants. It is believed that the causes of illness are often very complex such as the infringement of a prohibition and unexpected encounters with malevolent entities responsible for stealing the humans'

life force 'kuruduwa'. Temporary departure of the 'life force' induces sickness only, but permanent separation of the 'kuruduwa' from the body is believed to cause death. Specific useful plants are believed to be 'owned' by benevolent entities 'Diwata' (Novellino and De Matteis Tortora 1999, Novellino 2001). Thus, the administration of medicinal plants can be coupled with the stylised repetition of a specific formula 'tawar', or by addressing the 'owner' of the plant with certain words 'ämpang ät uruuru' (Macdonald 1988, Novellino 2001). The use of certain plant species is believed to be necessary to pursue specific aims: the protection of rice fields from pests, to keep malevolent entities away, to become invincible, to gain the admiration of women, to attract game animals (Macdomald 1988, Novellino and De Matteis Tortora 1999, Novellino 2001, Revel 1990).

b.2.2 How Do they Live?

The Pälawan are swidden cultivators with a sophisticated knowledge of intercropping techniques. Resin from *Agathis philippinensis* (*bäktik*), rattan canes (semi-woody climbing palms) and wild honey are collected for sale. The wild pig, *bjäk*, is the preferred game and its catch is usually preceded by a request to the 'master' of the animal game. Also bees are imagined to have their own master who dwells in the upper-world, and can only be seen by the ***baljan*** (shaman) during trance (Novellino 2001a).

Traditionally, every seven years, a ceremony (***simbung***) was performed in honor of the ***master of bees*** and to restore the cosmic balance (Macdonald 1988, Novellino 2001a). Starch (***natäk***) is extracted from both domestic and wild palms and represents an emergency source of energy. The felling of the ***gumbja*** palm (*Metroxylon sagu*), is often preceded by a sort of skirmish mimicking a duel between the gatherer (acting as a sort of warrior) and the ***gumbja*** (addressed by the gatherer as ***käläng taw*** - the "Big Man") (Novellino 2001a). The more settled Pälawan also engage in the cultivation of wet rice, coconut for commercial purposes and raise domestic animals such as caws, buffalos and pigs. At first sight, members of such communities may be undistinguishable from migrant farmers and in many cases, intermarriages have occurred between both groups (Macdonald 2009). The majority of the communities affected by oil palm expansion belong to the 'Pälawan of the lowlands' and depending on the location they occupy, they have experience various levels of acculturation and integration into the mainstream political structure. This also implies that, compared to the Pälawan of the uplands, they have undergone significant transformations and have been subject to stronger degrees of cultural erosion.

b.2.3 Common trends in Palawan upland farming and beliefs

Shifting cultivation requires an area of land that is much larger than that being cultivated, to ensure that soil will regain its fertility through fallow periods. Fields, once cultivated, are left to fallow for several years and then replanted with rice, root crops and vegetables. There are basically six stages in the swidden cycle: underbrush cutting, felling the forest, burning the dead vegetation, planting or sowing the seeds, weeding the field and harvesting. Most often, indigenous cultivators in Palawan use secondary and tertiary

forest that is grown during the fallow period rather than primary forest. In fact, the latter would need higher energy expenditure to be chopped down (Novellino in press b).
Intercropping techniques are known to the Pälawan, and mastered by the various communities with different degrees of success. Soil, mostly from long-fallow vegetation, secondary forest, and occasionally primary forest, is first planted with rice. For this purpose, a dibble stick is used. This does not disturb the fragile forest soil behind a depth of a few centimetres (Novellino in press b).

Corn and upland rice are planted almost at the same time, the former matures in about three months and may be planted twice. *Andropogon sorghum* (L.) Bronth, *Sorghum vulgare* (L.) Moench, *Coix lachryma jobi* (L.) etc. can be planted at the same time with rice, forming breaking lines across the agricultural field. Other crops such as *Setaria italica* (L.) Beauv. and *Sesamum orientale* L. are planted at the margins of rice fields. About one month after rice planting and, when rice stalks have reached a size of about 20/25 centimetres, *Colocasia esculenta* Schott & Endl., *Alocasia* sp., *Dioscorea alata* L., *Dioscorea bulbifera* L., different species of beans, various cucurbits [*Momordica charantia* L., *Luffa* spp., *Lagenaria siceraria* Standley, *Cucurbita maxima* Duchesne, *Cucurbita moschata* (Duch.) Poirer, etc.] are planted in the swidden, at the base of stumps, dead logs and fallen tree branches. *Colocasia esculenta*, 'taro', is also planted after underbrush clearing or after rice harvesting. Little care is necessary after the initial planting, which is done by burying a piece of shoot or sucker into holes dug with a stick (Novellino 2007c).
Cassava, *Manihot esculenta* Crantz, can be planted around the margins of the swidden field at the same time with rice. Alternatively, it can be interplanted in the main swidden field, 45/60 days after rice planting. More often, cassava is planted on poor soil, in separate fields. Stems of *Manihot esculenta* from the previous planting season, are cut into pieces of about 25 centimetres long and inserted halfway in the soil at an angle of about 30 degrees. Sugar cane, *Saccharum officinarum* L. can be planted around the swidden fields at the same time with rice, or in breaking lines crossing the swidden plot, about 20 days after rice planting. Sweet potatoes are usually introduced into the field when most of the previously planted crops have been harvested. Coconut palms, bananas and fruit trees, such as papaya can be cultivated inside swiddens. Various combinations of pepper, eggplant, tomato, sugar cane, melon, squash, ginger, plants for fish poison, fruit trees, cassava and other root crops are planted in the farm gardens, adjacent to the semi-permanent field huts (Novellino 2007c).

The forest is believed to be the domain of a large number of demons such as *säjtan* and *länggam*, the latter being the caretakers of poisonous and 'biting' animals (*rämu-rämu*) (Macdonald 1988, Novellino 1999b, Revel 1990). Before clearing a forest plot, the Pälawan consult and appease various entities, and interpret omens in dreams. Certain signs are placed in the area chosen for the swidden, to determine whether the 'entities' inhabiting that particular portion of the forest are willing to vacate it (Novellino 2007c).
Even after 'permission' for slashing the forest has been granted by the *länggam*, there are still a number of precautions that the people should take before slashing the underbrush vegetation.

A Pälawan legend attributes the origin of rice and cultivated plants to a human sacrifice (Novellino 2007c, Revel 1990). Each year, before planting rice, the people practice a number of ceremonies to call back the *kuruduwa* ('life force') of the child who was killed by his father in legendary times. Germination of rice seeds and the health of crops is said to depend on the action of the 'child's life force' (Novellino 2007c).

For this purpose they build a ceremonial structure (*pinädungan*) in the centre of the swidden field (cf. Macdonald 1988, Novellino 2007c Revel 1990). This is the place where the 'child's life force' will reside during the planting and growth of rice and several measures will be taken to protect it from all sorts of danger and inconveniences.

It must be specified that the practice of making the *pinädungan* had already been abandoned in some of the most acculturated Pälawan communities living in the proximity of the national road even before the establishment of oil palm plantations. These communities often live in mixed settlements uninhabited by both migrants and indigenous peoples and inter-marriages are frequent amongst these groups. Although *pinädungan* is no longer being constructed by the most acculturated Pälawan communities, this does not entail that the whole system of beliefs and practices related to upland rice has been lost. In some communities, certain features of traditional agriculture knowledge and related beliefs continue to persist while others may not be transmitted (Novellino personal communication).

In those Pälawan communities that are undergoing intense acculturation, the establishment of oil palm plantations represents 'the final blow', in short it contributes to erase what remains of peoples' traditional knowledge, especially in relation to the use of medicinal plants and other species employed in the construction of local objects and artifacts. In addition to this, oil palm expansion accelerates the disappearance of genetic diversity of crops and, as a result, the whole system of knowledge associated with such crops becomes meaningless and fades away (Novellino personal communication).

b.2.4 'Sago' starch: an emergency food on the verge of disappearing

Sago palms in southern Palawan provide an emergency food (starch), on which people rely in moments of need, for instance when they experience crop failure, e.g. when drought is persistence. In the face of ongoing climatic changes and erratic whether patters, both cultivated and wild sago palms represent an important source of starch when no alternative carbohydrates are available (Novellino 1999d). Sago palms in Palawan include species from at least three genera: Metroxylon, Arenga, Caryota. Both the spiny and smooth taxon of Metroxylon are found on the Island (Novellino 1999d). In Pälawan language *natäk* is the starch that accumulates in the trunk of certain species during the vegetative phase lasting approximately between 7 to 15 years (Kiew 1977). The starch from *Metroxylon sagu* Rottb, is extracted during the palm's reproductive phase. Generally, the plant dies after bearing fruits. The period between the production of the single terminal inflorescence to fruit bearing lasts approximately two years and coincides with the loss of the remaining leaves and the exhaustion of the carbohydrate supply in the stem (Kiew 1977). The best period to extract the starch from *bätbat* (*Arenga undulatifolia* Becc.) is when flowering begins. Pälawan define this period of the vegetative phase as *kumugita*. On the contrary when the palm is bearing fruits, *natäk* extraction is said to be unproductive (Novellino 1999d).

Bätbat is regarded by the Pälawan has one of the most valuable wild palms and, according to our investigation (see table no.1) this palm features amongst those species facing significant decline due to the expansion of oil palm plantations. *Bätbat* is found in clusters at low/medium altitude both in primary and secondary forest, and even in swidden fields under fallow. This is to say that the locations in which this palm is customarily found coincide exactly with the areas being converted into oil palm plantations or being considered for future expansion.

The extraction of palm starch is generally a household oriented activity, involving a group of close kin. Trips to starch palm locations may include other forest based activities, such as the collection of wild fruits, vegetables, and honey (Novellino 1999d).

There are three species of palms commonly utilized for their starch: the *bätbat* (wild) also known as *putäl* or *bänkäs*, the *nangäq* (wild), and the *gumbja* (cultivated) (Novellino 1999d). Techniques for the extraction of starch varies from species to species, and the felling of the palm is always undertaken by men (Novellino 1999d, 2001a). Women help with the clearing of the area where starch extraction and processing takes place. Women also play an important role in the actual extraction of starch. Before felling the *bätbat*, a deep 'V' shaped cut is made into the palm trunk to check the consistency of the white marrow, and thus to anticipate the results of starch extraction. If the marrow is not too wet, and has a high content of white powder, this is the sign that the palm can be felled down (Novellino 1999d).

b.2.5 Basketry, artwork and artifacts making

In Southeast Asia, basketry and weaving are generally women activities. However, in Palawan, also men make *biday* (rattan mats), using strips of finest Calamus species. Unlike the majority of baskets and mats, this particular mat is worked vertically/horizontally rather than diagonally, and strips are not woven but tied together (Novellino 2007a).

The most common types of weaves occurring in Southeast Asia include: 1) checkerwork; 2) wickerwork; 3) crossed weft; 4) diagonal or twilled. These types of weaves are also represented in Palawan. In the first type of weave, the warp and weft are of uniform size and pliability, and each element passes over one and under one of the other, thus forming square or rectangular checks. A variant of this weave is found in certain baskets in which the warp is crossed and the weft passes through in regular order, so as to produce hexagonal openings. In wickerwork the warp is rigid; the smaller and more flexible weft passes under one and over one of the former. In crossed weft, two sets of wefts cross each other at an angle and interlace a rigid warp. Diagonal or twilled weaving is particularly common and it occurs when two or more weft strands pass over two or more warp elements, but not the same in adjoining rows; also warp and wefts both run diagonally (see Cole 1956: 58).

Samples of Pälawan weaving types and plant material used in basketry are provided below:

Fig. 1. ***Duduq*** Cover and base, 15 x 9cm.

Fig. 2. ***Duduq*** Base

Duduq**:** (breast-shaped basket): Container for small objects

MATERIAL:

1) Body: ***binsag*** *Dinochloa* sp. (**Poacee**).

2) Circular frame: ***mägtulangän*** probl. *Calamus sp.* (**Arecaceae**).
3) Tying material: ***sika*** *Calamus caesius* Blume (**Arecaceae**).

TYPE OF WEAVE: Twilling

DECORATIVE PATTERN:
Cover *(**sinulindang**);* Base *(**rindäng rindäng**);*

****

Ätar Ätar 5.5 X 4cm.

Ätar Ätar**:** miniature basket, also used as talisman container

MATERIAL:

gähid *Lygodium* probl.*circinnatum* (Burm.) Sw (**Schizeaceae**).

TYPE OF WEAVE: Wrapping

****

tinkäp 30 X 12 cm.

tinkäp: Basket with cover used as container for domestic items

MATERIAL:

1) Body: ***ämagas***, probl. *Calamus sp. or Korthalsia sp* (**Arecaceae**).
2) Circular frames: ***tikäd manuk***, *Calamus* sp. (**Arecaceae**).
3) Base: ***kälapi*** *Calamus merrillii* Becc. (**Arecaceae**).
4) Tying material: ***ärurug***, *Calamus* probl. *javensis* Blume (**Arecaceae**).

TYPE OF WEAVE: Twilling

****

bäka 40 X 26

Bäka: Agricultural and foraging basket

MATERIALS:

1) Body: ***timbärangan***, *Calamus* sp. (**Arecaceae**).
2) Tying material: ***sika***,*Calamus caesius* Blume (**Arecaceae**).
3) Base: ***kälapi,*** *Calamus merrillii* Becc. (**Arecaceae**).
4) Strap: ***lindägung***, *Trema orientalis* (L.) Blume (**Ulmaceae**).

TYPE OF WEAVE: Twilling

It would be difficult to describe Pälawan "material culture" in a few pages. Hence, in this report to list only some of the most common objects/tools made by Pälawan. Detailed information are provided in **table no. 2**, where **9** musical instruments are listed together with **6** tools and objects employed in hunting, in addition to **7** different types of traps, **3** items used in honey gathering, **5** types of fishing traps and tools, at least **12** types of

woven items, **15** domestic objects (some of them directly employed in the preparation of food) as well as **5** tools/objects used in agricultural and **12** objects of personal use, such as tobacco containers, combs and long-blade knifes. Other instruments and objects such as canoes and anthropomorphic and zoomorphic statues of ritual use are also listed. All these artifacts and material objects are associated with about **150** plant species, belonging to at least **35** plant families.

The progressive decline of such species due to land conversion for oil palm plantations is having a significant impact on Pälawan artifacts and artwork. This is to say that a direct connection exists between massive expansion of oil palm plantations and the progressive disappearance of traditional items and related plant knowledge. In turn, as field findings suggest, the decline of useful plant species caused by oil palm development is having direct repercussions on Pälawan cultural reproduction and transmission.

Images related to selected Pälawan artifacts are found below:

Ritual objects

Täwtäw (anthropomorphic carvings)

zoomorphic carvings

Musical instruments

gimbal (drum)

kulintangan (xylophone)

Objects of Personal use

Äläp *(tobacco container)*

Sudaj (comb)

tukäw
(long-blade knife)

Objects of domestic use

gäntangan *(container for the rice)*

Läsung (mortar)

luluag (large cooking spoon)

säsäratan (strainer)

Hunting, trapping and fishing tools

Käraban
(darts' container)

ŕaway o rabay (snare trap for wild chickens)

sjud (scoop-net)

B.3 The Oil Palm Industry in Palawan: a chronology

Agro-fuels in Palawan, as elsewhere in the Philippines, have been portrayed as a key solution to lower greenhouse gas emissions, achieve energy independence, as well as a tool for poverty eradication (Dalabajan 2009). With these objects in mind, the former Provincial Government of Palawan, as well as the present one, have strongly promoted oil palm development.

It is interesting to note that the Philippine Oil Palm Development Plan for 2004-2010, crafted in 2003 through the leadership of the Philippine Palm Oil Development Council (PPOIC), emphasizes that oil palm industry will be able to generate rural employment while ensuring sustainable development. The Philippine Oil Palm Development Plan also states that the area to be converted nationwide for oil palm plantations will only include idle and underdeveloped lands. However, what the plan fails to consider is that most of the so called 'idle' and 'underdeveloped' lands include areas that are utilized by the rural and indigenous populations for different purposes (gathering of NTFPs, medicinal plants, swidden cultivation, etc.). These areas also include river sources providing rural households and indigenous peoples with potable water and fishing grounds.

On 2003, former governor Joel Reyes (now wanted by ICPO - International Criminal Police Organization) invited the Agusan Plantations Group (APG) of Companies and the Philippine Palm Oil Development Council (PPODC) to Palawan. Starting on February of the same year, several visits were carried out to conduct assessments on the potential of Palawan for palm oil project. Some of these findings were presented during a forum held at the Palawan State University (PSU), which was attended by government officials,

investors and NGOs.

Around October 2004, the Agusan Plantations Group of Companies began intense consultations with local stakeholders at the barangay level, collecting additional information and setting the bases for its future operations. Finally, in barangay Maasin (Municipality of Brooke's Point) the company was able to identify the site for the construction of the oil palm mill, which was donated by the Municipality of Brooke's Point. On January 2004, the Palawan Palm Oil Industry Development Council (PPOIDC) was established through a provincial legislation (Provincial Ordinance No. 739-04).

In Palawan, the main oil palm operations are being run by Palawan Palm & Vegetable Oil Mills Inc. (PPVOMI) and its sister company Agumil Philippines Inc. (AGPI). By December 2005, PPVOMI was organized and registered as a local company and part of the Agusan Plantations Group of Companies. PPVOMI, which is 60 percent Singaporean and 40 percent Filipino-owned sells 100 percent of its production to its sister company Agumil Philippines Inc. (AGPI), which has established and operates an oil mill in barangay Maasin (Municipality of Brooke's Point) for the processing of crude oil palm and palm kernel. It would appear that AGPI, which is 75 percent Filipino-owned and 25 percent Malaysian, undertakes the export of at least 70 percent of its production to Singapore, China and Malaysia. All plantations are managed and owned by individual self-financing growers, cooperative out-growers and PPVOMI. PPVOMI plantations constitute around 25% of the total area planted, while the remaining 75% are plantations belonging to the contract growers of AGPI, most of whom are cooperatives with very few individuals (Barraquias, 2010).

Official oil palm operations began only in January 2006. The target area for oil palm development spans over the municipalities of Aborlan, Narra, Quezon, Sofronio Española, Brooke's Point, Rizal and Bataraza, all of which are in Southern-Central Palawan.

As of now, most of the oil palm companies' resources have been invested in the construction of a milling plant, in planting and expanding oil palm plantations, and in purchasing heavy equipment needed for their operations. Agumil Philippines, Inc. also rents equipment such as tractors and bulldozers from the CAVDEAL construction company. The ALDAW research team was unable to get precise information on the costs invested in oil palm plantations by other secondary stakeholders such as the Cavite Ideal International Construction and Development Corporation (CAVDEAL). This is a constructions firm, now turning into palm oil business and, according to some sources, the company has purchased several hundred hectares of land in the Municipalities of Brookes' Point and Sofronio Española. Also another enterprise owned by a local Chinese businessman has purchased at least 700 hectares in southern Palawan to be developed into oil palm plantations.

The main financing institution for oil palm production in Palawan is the Land Bank of the Philippines (LBP). In principles LBP should commits 80% financial assistance while the remaining 20% becomes the borrower's equity. The anchor firm (the company) shoulders 10% of the equity. The bank requires no collateral but does require original land titles for safekeeping reasons (Barraquias 2010). However, because farmers have often no capital to invest, the Agumil-Philippines sets up the equity for the cooperatives in order for the LBP to commit to 80% equity. As a result, cooperatives and farmers have now double loans, both from API and from LBP (c.f. Barraquias, 2010 and Larsen at all. 2014).

A triangulation of data from different sources would suggest that, as of now, the overall area converted into oil palm plantations in Palawan is of about 6,000 hectares, and probably more. Instead, the area being targeted for oil palm plantations is between 15,000/20,000 ha. It is interesting to note that according to a study carried out by the Philippine Coconut Authority (PCA) and the Palawan Palm Oil Industry Development Council (PPOIDC), out of the 454,405 ha of agricultural area in Palawan, almost half (208,997 ha), are said to be suited for oil palm plantations (Barraquias 2010). Also the Provincial Government has provided excessive estimates for the land allegedly suited for oil palm expansion. Specifically, in Palawan, 80,000 hectares are said to be suitable for oil palm plantations and this estimate is four times higher than the nationally allocated target of 20,000 ha (ibid.).

On June 25-26, 2009, the 6th National Palm Oil Congress was held in Puerto Princesa City, Palawan. During the congress, Mr. C.K.Chang, of Agumil Phils., Inc. asked the local government to do its part in developing the industry in its province, claiming that what the company really wanted from the Provincial Government was not money but rather the absence of bureaucratic constraints and no 'red tape'.
Five years later from that statement, one may easily come up to the conclusion that Mr. Chang's request has been completely fulfilled by the Palawan Provincial Government, but at the expenses of the environment and of traditional livelihoods. The request of 'no red tape' and 'no bureaucracy' has, in fact, translated into a massive and uncontrolled conversion of biologically diverse environments into oil palm monocultures, which mostly benefit their proponents rather than local communities.

b.3.1 15 Good Points" On why oil palm expansion should be stopped

Out of the overall amount of field-data gathered by ALDAW between 2010 and 2013 we have been able to distil at least 15 major points justifying the implementation of a moratorium on oil palm expansion in Palawan. In some municipalities, palm oil development is already competing and taking over cropland and coconut groves, which are sustaining local self-sufficiency. The exponential increase of pests (insects and rats), directly associated with oil palm development, features as common complain raised by both migrant farmers and indigenous peoples. In other municipalities, old and secondary forest has been cleared to make space for plantations, and important water sources are being polluted. Land erosion and flash flood events are on the increase. Overall, in all municipalities, oil palm expansion is taking place at the expenses of local economy and of existing biological diverse vegetation types. As a result essential resources (NTFPs, medicinal plants, game animals, wild honey, etc.), which are pivotal for daily household survival, are being completely obliterated through oil palm development. Ambiguous strategies for taking control of indigenous land through fuzzy rent agreements and illicit sale deeds are common. Low employment rate and unfair working condition in oil palm plantations are not an exception but the norm.

1. Productive Coconuts are dying and 'copra' production is decreasing

According to members of local communities, since oil palms were planted new pests started to spread from oil palm plantations to indigenous cultivated fields and coconuts groves. Such pests include the Red Palm Weevil (*Rhynchophorus ferrugineus*) and *Brontispa longissima.* These species, according to local informants, were not present in the area before the establishment of oil palm plantations. The loss of productive coconuts

because of pests allegedly spreading from oil palm plantations should be accounted for in terms of thousands of palms being affected. Infestation of *Brontispa longissima* has destroyed 4,000 coconuts in Bataraza around 2009 (Barraquias, 2010). Suede Taiban, a tribal leader in Espanola Municipality claims that only in Iraray at least 1,000 coconuts were destroyed because of Red Palm Weevil around 2010 (Barraquias, 2010). In 2009, a local resident in Iraray said she had lost 600 of the 800 productive coconuts and she had pleaded to the provincial government to declare the affected areas a state of calamity (Dalabajan in press). In 2010, members of several indigenous households in Iraray II (Municipality of Espanola) told to ALDAW community organizers that their production of copra had dropped of at least 40/50% because of dying coconuts being killed by Red Palm Weevil and other pests. A recent visit by ALDAW staff in Iraray II on August 2014, has revealed a significant decrease in Red Weevil infestation (allegedly due to traps set by company personnel). In turn, according to the same Pälawan informants, infestation of *Brontispa longissima* is rapidly increasing.

2. Loss of forest and biodiversity

Palawan has one of the last remaining contiguous forest blocks in the Philippines, oil palm plantations are breaking the contiguity between different and interrelated ecosystems, such as hilly forest, lowland forest, shrub and grassland, wetlands, etc. thus having an impact of animal species that move and thrive in different ecological niches, as well as on the integrity of each specific niche.

Common animals have completely disappeared from oil palm impacted areas and the population of birds has dropped dramatically. Clearing of land for oil palm plantations eradicate native plants and animals from the area. Local biodiversity cannot survive in oil palm plantations.

In several affected areas, there is a remarkable decrease of NTFPs which are essential to the livelihood of the local communities. Medicinal plants, traditionally used for curing common ailments, are no longer found and are now available only in some distant locations.

Field inspections by ALDAW reveal that significant areas covered by primary and secondary forest have been cleared by Agumil Philippines, Inc, CAVDEAL and San Andres to expand their oil palm plantations. This has occurred particularly in the Municipalities of Quezon, Brooke's Point, Rizal, Bataraza and it is confirmed by additional reports based on field inspections carried out by the Community Environmental and Natural Resources Offices in Palawan and further supported by certified maps and GPS data. In one of such reports named "List of Existing Palm Oil Plantations in the Municipality of Quezon and Rizal within the Administrative Jurisdiction of CENRO Quezon", released on November 2013, it clearly appears that oil palm expansion has occupied more than 26 ha of timberland and almost 9 ha within the Mount Mantalinghaan Protected Landscape MMPL. Moreover, the report shows that 150 ha (existing and proposed) are in CADT land. On the 23rd of January 2014 ALDAW community organizers accompanied the personnel of CENRO Brooke's Point headed by Forester Franklin M. Aquino, Forest Ranger Bernami M. Manunggay and Admin Aid Herman A.Paraiso to an area of virgin forest being clear-cut allegedly by Agumil oil palm company and San Andres. On that occasion, massive forest conversion for oil palm development was documented in sitio Song-Song, Barangay Culandanum; Sitio Pasi-Pasi, Sitio Barak-Barakan and Sitio Luzviminda of Barangay Sandoval (see copies of original documents at the end of this report).

Agumil claims that they have been given ECCs from DENR to occupy particular portions of forest land. However, Environmental Compliance Certificates (ECCs) are documents proving that a developer has met environmental standards and stipulates the conditions that it must comply with. ECCs has been issued by DENR despite the fact that the proper procedures were not observed and without any technical report submitted by Agumil and PPVOMI showing that environmental standards would be met. Interestingly enough, according to a Memorandum of Agreement between PCSD and the Department of Environment and Natural Resources (DENR) signed on December 29, 1994, the latter shall not issue an Environmental Compliance Certificate (ECC) without the project promoter having secured a SEP clearance first (cf. Larsen at all 2014). However, evidences indicate that DENR did in fact issue several ECCs to PPVOMI prior to SEP clearances. The latter, instead, were never secured by PPVOMI **e**xcept for a SEP clearance issued for its nursery and oil mill area (about 13 hectares only). Surprisingly, there are no SEP clearances released for the remaining thousands of hectares being converted into oil palm plantations (around 6,000 ha until present time). In so doing, both PCSD and the DENR Environmental Bureau have overstepped the bounds of the law that they mandate to uphold placing Palawan natural and cultural heritage at great risk. Moreover, Agumil and PPVOMI has never received from DENR 'tree cutting permits' and thus they have violated Revised Forestry Code P.D.705 of 1987, and existing environmental legislation.

Cavite Ideal International Construction and Development Corporation (CAVDEAL) has also engaged in oil palm expansion over an area of at least 500 hectares that was cleared in Calasaguen (Brooke's Point Municipality). As far as we know, CAVDEAL and San Andres operations are also being carried out without ECC and SEP clearance.

3. Loss of agricultural land and diversity of cultivated plans

What the Government defines as 'idle' and 'abandoned' lands suitable for oil palm expansion, include indigenous agricultural fields under fallow period, as well as other areas used by local communities for the collection of minor forest products, medicinal plants, etc. The conversion of productive agricultural land into oil palm plantations has taken place in various municipalities. Oil palm plantations have also expanded in areas used by local IPs for the cultivation of local varieties of upland rice, root crops and fruit trees. This has greatly affected the diversity of traditional cultivars while making local communities even more dependent on purchased food. Oil palm plantations have a significant impact on genetic erosion of both cultivated and wild plants.

4. Limitation of free movement

The fencing of large areas of oil palm plantations particularly in Bgy Maasin and Calasaguen (Brookes Point Municipality) makes it difficult for local communities to reach their upland fields and forest. Often they are forced to take alternative and longer routes to avoid the oil companies' 'no trespassing' zones.

5. Decreasing food-self sufficiency and increasing malnutrition

Locally important non-timber forest products (NTFPs): leaves of palms (*buri*), bamboos and other fibers used by the local IPs for making mats (*banig*), house walls (*sawali*) and other hand-woven products are fast disappearing in oil palm affected municipalities or are

found much further from peoples' settlements. More land conversion into oil palm plantations will lead to decreasing households food self-sufficiency and increasing malnutrition. Sofronio Española Municipality provides a clear example of this. It has the highest percentage of land (over 45%) covered by oil palm plantations. Nevertheless it is a 4th class municipality. According to the 2008 Community-Based Monitoring System (CBMS) survey, Española comes at the bottom in terms of the Human Development Index for Palawan. It is also one of the 100 poorest municipalities in the country. Also, according to provincial nutrition action office, Sofronio Española has a high rate of malnutrition in the province (approx 22.98%).

6. Severance of flash floods events

The effect of floods has worsened proportionally to the expansion of oil palm plantations. This is due to the fact that soils where oil palms are planted is becoming harder and thus less penetrable to water and also because trees at the edge of rivers have been cut and, according to local communities, this has increased the risk of flash-floods.

7. Progressive depletion of plantation soils

The oil palm company will only return the management of the project to the growers upon the expiration of the term of the Management Services Agreement (about 30 years). By this time, the land converted into oil palm is likely to have been rendered infertile by the continuous use of chemicals, and depletion of nutrients. Hence, the restoration of such lands into productive cropland may result into an impossible task, especially for small landholders lacking financial capital. Progressive depletion of local agricultural crops and decreasing land fertility may represent one of the future factors leading to increasing migration of younger generations from the rural areas into urban centers.

8. Risk of pollution of river sources

Based on empirical records, for a ton of oil processed, about 2.5 tons of effluents will be discharged (Barraquias, 2010). So far oil mill discharges are deposited by Agumil and PPVOMI in a large open-air basin and there is a risk of contamination of local water sources and rivers. Agumil and PPVOMI should clarify how mill wastes are treated and disposed and additional investigation on this should be carried out by PCSD and the Multipartite Monitoring Team (MMT).

9. Excessive use of water resources

Oil palm plantations have a huge impact on water resources availability. For instance, in Brooke's Point Municipality, Agumil Philippines Inc. has asked a water permit for an amount of 7.69 liter/second to be pumped from the Kelebengag river, in Bgy Calasaguen. This is quite significant if one considers that, for instance, according to section 22 of the Philippine Water Code *"…water permits for irrigation use shall be granted on the basis of not exceeding 1.5 liters per second per hectare of land to be irrigated".* In short, 6.97 liters/second of water means 418.2 liters/minute. This is a huge amount of water not only in terms of quantity but also in terms of equivalent monetary value.
The *Sangguniang Bayan* of Brooke's Point is trying to push for a water project to benefit its own constituents. When this project will be fully implemented, citizens will be charged a fee of PHP 2.00/container. This raises the question of why free water-privileges should be given to oil palm corporations while citizens must pay for their water consumption.

10. Questionable and Illegitimate land appropriation practices

Indigenous people have leased their land to oil palm enterprises for prizes as low as PHP 500/year per hectares. In several instances, community people who have rented their land to oil palm companies are still waiting to receive the corresponding payment. Overall, there is a scarcity of public records showing the processes and procedures leading to land leases and land sales. Several IPs families have sold their land for prices as low as PHP 1,000/ha. Such lands, however, in spite of being occupied by local indigenous people since time immemorial, lack of titles or other tenurial instruments. The legality related to the appropriation of such lands by oil plant enterprises need to be challenged. Oil palm companies have resorted to rather illegal stratagems in order to penetrate IPs ancestral lands. In several cases, according to indigenous informants, they have received by the local government only partial and untrue information about the company's plans and targets. At the start, lacking this information, several communities did not oppose oil palm plantations.

It would appear that DENR has facilitated the processing of tenurial instruments needed by oil palm projects in areas already covered by Community Based Forest Management Agreements (CBFMA).This issue requires further investigation.

11. Land speculation by non-palawaños investors

In some cases the involvement of outsider investors limits the possibility of local farmers to potentially benefit of oil palm development. Wealthy individuals and groups from outside Palawan are behind oil palm development in the province. These investors have established so-called cooperatives and are holding lands in the names of local individuals and groups. These 'corporate co-ops' may avail of financing from Landbank that should instead be used to enhance the financial and operating capacities of small farmers. CAVDEAL construction company is behind the new Evergreen Growers Cooperative in Iraray II that, according to local informants, covers about 80 hectares of purchased land (cf. Neame and Villarante 2013).

12. Encroachment of palm oil plantations into ancestral domains without FPIC from the indigenous communities

The encroachment of oil palm plantations into indigenous peoples ancestral lands, without their Free and Prior Informed Consent (FPIC) has bluntly violated Section 59 of the Indigenous Peoples Right Act (R.A. 8371). Particularly in Bgy. Tagusao (Municipality of Quezon) oil palm plantations were able to expand into the ancestral domain of the IPs without securing FPIC from the community and by clear-cutting the forest on which local communities depended for their livelihood and daily needs. In a letter dated 15 August 2013 (see documents at the end of this report), Mr. Dominador Opra, NCIP focal person in Palawan, wrote to the Manager of the Agumil, to request the said company to comply with Section 59 Certificate of Precondition of the Indigenous Peoples Rights Act 8371 and to coordinate with NCIP Palawan Office. To this date, it would appear that Agumil has ignored NCIP request and the latter, in turn, has not made any attempt to make a follow up.

13. Low employment rates and unfair working conditions

In the year 2009, in the Municipality of Española (Barangay Iraray), only 25 community members were employed (part-time) in a 150 ha oil palm plantation site. This gives an employment estimate that is six fold lower compared to that proposed by the Philippine Coconut Authority (PCA) (e.g. one worker per hectare) (see Dalabajan in press). Since 2009 employment have not improved.

Working conditions in oil palm plantations are generally exploitative. According to local people, a day absence from work due to personal reasons (e.g. sickness) may result in the suspension of the employee from work for an additional three days. Similarly, If workers are victim of an accident in the performance of their duties, the company will assume no responsibly for such occurrences and, overall, no benefits or any form of insurance is provided by the company to the workers.

Until recently, wages received by oil palm workers were below the Philippines' minimum wage, which is PHP178 in the MIMAROPA Region. It would appear that wages have now increased to PHP210 daily. On the other hand, workers complain about delayed payment and unfair computation of working days. Due to delays in salary payments, most workers enter a credit system, known as *bunggo.* They can loan goods from company and cooperatives stores ending up paying 10% to 15% more than the regular prize of such goods. By the time they receive their salaries, most of it is gone to the payment of the *bunggo* (cf. Neame and Villarante 2013).

14. Lack of existing maps and monitoring of oil palm plantations

Oil palm expansion and massive land conversion is taking place with no monitoring by the concerned authorities. In the absence of existing maps it is impossible for the government to systematically determine the ownership, elevation, land classification, etc. of the area in which oil palms are being planted.

15. Violation of International Conventions and Declarations

The endorsement of oil palm plantations in areas that have been managed and conserved by indigenous peoples since time immemorial contradicts declarations and conventions that the Philippine Government has ratified such as 1) The Convention on Biological Diversity (CBD), 2) The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), 3) The Convention concerning the Protection of the World Cultural and Natural Heritage and, 4) the Convention for the Safeguarding of the Intangible Cultural Heritage.

b.3.2 Oil Palm Plantations Versus Traditional Agriculture

According to Dalabajan (2009), an area of 150 has. planted with wet rice brings livelihood to about 150 families while, in comparison, an oil palm plantation of the equivalent size could hardly provide the same level of food security.

Perhaps is still too early to come up with a reliable comparison between household food security achieved though oil palm plantations and the level of food security achieved through indigenous swiddens. On the other hand, there are clear evidences indicating that, due to a number of concurrent factors (loss of land and resources coupled by limited part-time employment), oil palm plantations are, in fact, exacerbating rural poverty.

There have been various studies in Palawan (Cadeliña 1985, MacDermot 2000, Novellino 2007, in press b) providing indications on the productivity of indigenous upland fields. In the early eighties, Cadeliña with reference to the Batak, an ethnic group living in central/northern Municipalities of Palawan, claim that a well-maintained upland field of about one hectare can produce a yield level that is comparable to that proposed in the green revolution with its high technological input requirements (1985: 125). Cadeliña estimated that a one-hectare Batak swidden, under various levels of maintenance, produces around 3,900 kilograms of husked rice. A field with excellent maintenance (weeds completely removed) produces almost 5,000 kilograms, while a moderately maintained one (between 30 to 50 percent of the field weeded) produces around 4,000 kilograms. A very poorly maintained field (below 30 percent of the field weeded) makes around 2,000 kilograms.

Cadeliña estimates do not necessarily apply to contemporary Pälawan lowland swiddens, many of which are found on lands that have already been deforested and that are being subject to short-fallow periods. In fact, amongst the lowland Pälawan, the loss of traditional territories due to logging, landless migrants, etc. has shrunken the available farming area, as a result fallow period have decreased. However, land fertility varies from areas to areas and, generally, those Pälawan communities living close to the forest such as in Pulot II (Municipality of Espanola) and Tagusao (Municipality of Quezon) until recently, might have enjoyed more generous harvests compared to their Pälawan neighbors living closer to the national road, and in more densely populated areas.

However, even if we consider a less favorable scenario, where an hectare of upland rice produces only 615 kg of seeds, equivalent to a 18-fold increase over the seed planted (See McDermot 2000: 367), this amount would still support a family of 4 people for a period of about 8 month. This approximate estimate does not account for additional energy intake provided by other food-plants intercropped with rice or planted after rice harvest.

Before detailed comparative studies are carried out, the general take of this report is that if lowland Pälawan indigenous communities would be allowed to cultivate their land, as they have done for centuries, they would be much better off in terms of food self-sufficiency and diversity of diet in comparison to what oil palm plantations can offer them in terms of employment opportunities and other means.

C. Research Areas and Specific Findings

C.1. The Municipality of Sofronio Española

According to the 2010 census, Sofronio Española has a population of 29,997 people. It is the province's newest municipality officially established on June 5 1995, through Republic Act No. 7679 from land that was formerly a part of Brooke's Point. It was named after former Congressman Sofronio Española.

This Municipality has the highest percentage of land covered by oil palm plantations and provides the bulk of oil palm kernels for the mill. The rest of the production comes from the Municipalities of Aborlan, Narra, Quezon, Brooke's Point and Bataraza.

Virtually, oil palm plantations cover most of Barangay Iraray land proper. According to our informants, in its early days, the company purchased 150 ha of land located along the national highway and rented from the local inhabitants another 300 ha stretching towards Pulot Interior. Our preliminary data indicates that, in Barangay Iraray II alone, 220 ha of land have been sold to the oil palm companies by Filipino Christians and Muslim, as well as by few indigenous families, while another 47 ha have been leased to the companies by members of the local cooperatives.

Before and until the 1960's most of this land was customarily utilized by local Pälawan communities for their swiddens, for the gathering of NTFPs such as bamboos, *buri* (*Coripha elata*) palms and for gathering housing material, etc. With the arrival of migrants from other provinces, the government began to carry out cadastral surveys. While most migrants applied for titles for the land they had occupied, the original inhabitants became marginalized through this process. Mainly this is because they were unaware of the procedures that they had to follow in order to gain legal recognition over their customary lands. Outsiders, especially Muslims from neighboring island provinces, after acquiring titles and planting coconuts on the land previously occupied by indigenous peoples, left the area and returned only sporadically to check their properties which they ultimately sold to the oil palm companies.

The oil palm companies have purchased most of its land from non-indigenous farmers who had previously occupied and got possession of IPs land, also through fraudulent practices. Several members of the local Pälawan indigenous communities have leased their land to oil palm companies for prizes as low as 500 PHP/year (about USD 12.5).

These rates are far below the standard prize that the company should pay for yearly rent.

In the Municipality of Española, Agumil's strategies for expanding its plantations include the regrouping of different parcels of land under Certificate of Land Ownership Award (CLOA). At the present, members of the local indigenous communities also complain about a construction company, the Cavite Ideal International Construction and Development Corporation (CAVDEAL), which provides the oil palm company with heavy equipment for land clearing. Unexpectedly, CAVDEAL has turned into a land grabber and it is now acquiring land for oil palm conversion.

Because of the advance of oil palm plantations, local communities are losing control over their land and resources. This trend is the same for all affected barangay such as Bgy. Iraray, Bgy. Punang, Bgy. Pulot-II, Bgy. Isumbo, Pulot center and Bgy. Pulot, located both in the interior and coastal areas. The overlapping of oil palm plantations with the indigenous ancestral land/domain is particularly evident in By. Pulot II where oil palm development impinges on indigenous burial and hunting-gathering grounds. Some of these indigenous communities, such as those of sitios Marebong and Pasi (Barangay Pulot), are now squeezed between the mining tenements of Citinickel in the uplands and the oil palm plantations in the lowlands. As a result they are becoming increasingly poor and malnourished.

Due to oil palm expansion, common animals such as the barred button-quail (*Turnix suscitator fasciata*) and porcupine (*Thecurus pumilusi*) have completely disappeared from the impacted areas.

Pälawan man making *'sawali'*

Also key NTFPs (palm leaves, bamboos and other fibers) used by the local IPs for making mats (*banig*), bamboo woven bundles (*sawali*) and other woven products have disappeared or are found far away from the communities. *Banig* and *sawali* are sold to the local market and do represent an essential source of income for hundreds of families. Additional conversion of land into oil palm plantation will surely lead to the complete collapse of the local household based economy.

Community representatives also claim that certain medicinal plants traditionally used for curing common ailments are no longer found in their areas, and they are now forced to purchase medicines from the outside.

Other informants report that flash floods have increased proportionally to the expansion of oil palm plantations. According to them, this is due to the root system of the oil palms and the close distance between planted specimens (i.e. density), making the soil particularly compact and thus less penetrable to water. Indigenous people claim that around 2009/2010 a 'new' pest has spread from the neighboring palm oil plantations to their cultivated fields devouring hundreds of coconut palms by boring large networks of tiny tunnels into the palms' trunks.

This insect has been identified by ALDAW as the Red Palm Weevil (*Rhynchophorus ferrugineus*). Because of this and other pests, coconuts production seems to have dropped to 50%. It is important to note that *Rhynchophorus ferrugineus* also feeds on other Philippine palms such as *Areca catechu* (betel nut palm), *A. pinnata* (sugar palm), *Calamus merrillii* (rattan), *Caryota cumingii* (fishtail palm), *Corypha elata (buri), Metroxylon sagu* (sago palm), *Oncosperma horrida*, *Oncosperma tigillarium* (nibong palm) as well on sugar cane (*Saccharum officinarum*). The elimination of other palm species, due to the expansion of oil palm plantations, has caused – as a result – an intensification of Red Weevil attacks on cultivated palms (*Cocos nucifera*).

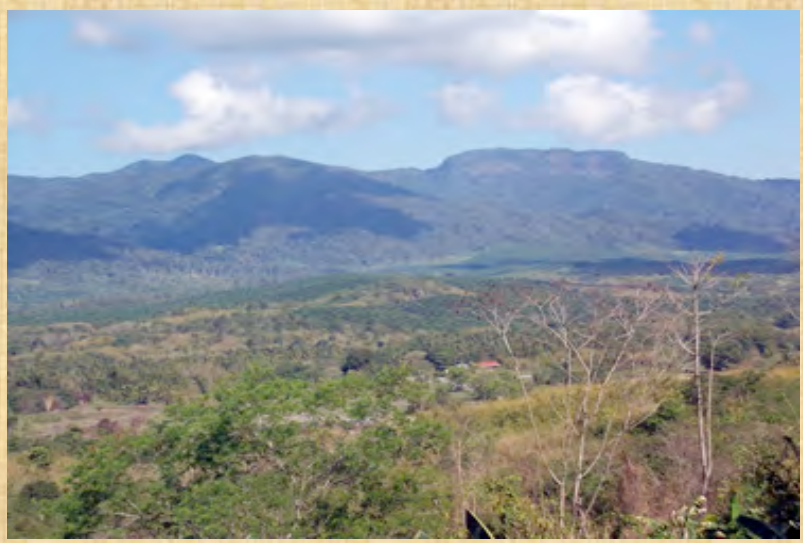
Pälawan IPs also complain about the increasing of the Asiatic rhinoceros beetle or coconut rhinoceros beetle, (*Oryctes rhinoceros*). This is a species of rhinoceros beetle belonging to the Scarabaeidae family. *O. rhinoceros* attacks the developing fronds of coconut, oil, and other palms. Damaged fronds show typical triangular cuts. The beetle kills the palms (particularly newly planted ones) when the growing point is destroyed during feeding. The larvae do not damage crops, but instead grow in dead, decaying trunks and other organic matter. According to local informants, this species has massively moved to their coconuts plantations, after wild palms such *buri* palms (*Corypha elata*) were destroyed during land conversation by oil palm companies.

In 2008 Apollo M. Diao, an agriculturist based in Palawan, has reported severe rhinoceros beetle infestation of coconuts in Brgy. Iraray. In the same locality, he reported that some 7,000 oil palm seedlings were also damaged by the rhinoceros beetle.
Another complaint is related to the alarming increase of rats population in peoples' agricultural land and, again,

according to local IPs, this is due to the fact that traditional living grounds of these animals (*buri* palms and bamboo groves) have been destroyed during oil palm expansion, forcing rats and insects to move massively into locally managed community lands. Indigenous informants interviewed in the Municipality of Española say that pests from oil palm plantations have moved into their coconuts groves also because the latter are not treated with pesticides and thus provide a 'safe ground' for the survival and reproduction of such pests.

Nowadays, most indigenous households in Española feel that it is unfair for the local government units (LGUs) to charge them with the same amount of real estate tax since the production of their land has now dropped dramatically. According to them taxes should be lifted for those pieces of land that have lost production due to pest attacks.

C.1.1 Sitios Marebong and Pasi, Barangay Pulot: *general* environmental features



Sitio Marebong and Pasi are located in Brgy Pulot Interior in the Municipality of Sofronio Española. Both communities are surrounded by forested hills and, some of these, have already been encroached by mining activities carried out by the Citinickel corporation
Patches of cleared forestland can also be spotted around the villages. These are planted with rice, maize, root crops, banana.

The landscape around sitio Marebong

Other areas in the hillsides are under fallow period ranging between 6 to 8 years. The presence of bamboo groves can also be noted with *bungbung* representing the dominant species. Some flat areas, at the bases of the forested hills, are planted with wet-rice, the presence of coconut palms is negligible.

C.1.2 Population

The overall population in Barangay Pulot consists of about 2,000 individuals. About 300 indigenous people are directly affected by oil palm development and mining extraction in the communities of Marebong, Pasi, Pangatban. There are also four families of Filipino migrants, originally from Mindanao, Iloilo and Negros, living in the area (Lenita Nangoc personal communication).

The indigenous people in the area rely mainly on subsistence upland farming, while only migrants are engaged in wet rice farming. Some IP households are also engaged in the making of woven artifacts for commercial purposes, such as *banig* (mats), *nigu* (flat-winnowed trays) and *sawali (*bamboo woven bundles for walling). Aside from the harvesting of fibers used in weaving, which are collected in the vicinity of their communities, the people harvest wild-honey seasonally and sell it locally. Few are also involved in small-scale gold panning. Gathering of wild greens and the harvest of so called 'palm's cabbage' (*ubud*) from various palm species takes place all year around, while collection of mushrooms is particularly abundant between August and September.
Non-indigenous families have general-merchandize shops (*tinda*) in the area. They are also engaged in the planting of wet-rice and practice upland farming, occasionally.

C.1.3 Artifacts production and use of plants

In Pulot the four dominant types of baskets are *balikbalik*, used to contain fish, the roughly made *raga* generally used for carrying vegetables and crops, the *ambong* for carrying rice and crops, the flexible *bayong* of wild pandan used as a rice container. Only women are involved in basket weaving and we have been informed that each woman may produce up to 10 baskets within a month.

Balikbalik

Raga

Bayung

ambong

tadtad/saksak

Up to 300 pieces of split bamboo sections (*tadtad* or *saksak*) used for walling can be produced by a household member in one day. These are sold at a prize of about 50.00

pesos for 100 pieces in the local barangay market. Generally, all family members are involved in the production of *tadtad*, even children from 10 years above.

Nigu (flat winnowed trays) are also sold for a prize between 75.00 to 100.00 pesos each in the local market. Women are in charge of weaving *nigu* while men collect the needed raw material. We have been informed that a household could produce up to three *nigu* in one month. Mainly pregnant women or mothers with infants are engaged in the weaving of this item, which provides them with an extra source of income.

Belinda Biena and her daughter Mystika making banig mats. See also nigu in the forefront

C.1.4 livelihood activities and concerns

Honey from *putiukan* bees (probably *Apis dorsata*, and other species) and *nigwan* bees (probably *Apis florea* or *Apis indica*) was collected seasonally, especially between March and June. Honey was sold for 300 pesos per gallon in the local market and shops. Alternatively, one gallon of honey was also exchanged for a *salop* (approx. 2.5 kgs) of rice. Presently, the people complain about the loss of honey production, and swarms of bees moving elsewhere due to the amount of dust produced by Citinickel operations. The dust covers even the tree canopy with a layer of red soil. Another reason for the disappearance of bees is attributed to the conversion of natural vegetation into oil palms estates and to the use of chemicals in plantations, to which bees are particularly sensitive.

The huge amount of dust produced by Citinickel operations covers the surrounding forest

In addition to this, the people claim that the little honey left in the area has an unusual reddish color (allegedly due to mining dust) and it is not suited for consumption. The people is now forced to go much further from their settlements to look for honey, this is why the prize of honey has increased to about 700 pesos per gallon.

Kenisio Malasan holding a blowpipe

Daily sources of proteins traditionally obtained through trapping (e.g. using *rabay* and other snare traps) and through hunting (e.g. using blowpipe and own made muzzle-guns) have also become scarce because of the combined impact of oil palm plantations and mining. According to the people, at least 8 species of once fairly common birds: *kiyaw* (talking myna), *abukay* (white cockatoo), *kalaw* (hornbill), *labuyo* (wild chicken), *tabon, balud* (green imperial pigeon), *picoy* (blue-naped parrot) and Palawan peacock pheasant can only be spotted very rarely and have completely disappeared from the areas being impacted by mining activities. The same applies to two reptiles: *bayawak* (monitor lizard) and *sawa* (python), and to 9 species of mammals: *durian* (porcupine), *balintong* (pangolin), *amu* (macaque), *pantot* (stink badger), *bising* (tree squirrel), *manturon* (bear cat), *baboy damo* (wild pig) and *dugong* (lamantin) on the coastal areas. Similarly, the areas converted into oil palm plantations have see the disappearance of species that, in the past, were commonly spotted by the people such as *pugo* (quail), *mantod, bayawak, balintong, durian, baboy damo.* According to the people, oil palm development has also caused the disappearance of large trees such as *Apitong*

baboy (Dipterocarpus sp.), *mangga mangga* and bamboo groves which provided shelters to wild species.

The community also complain about the loss of fresh water resources and fish species such (*papait, kasili, pantat, dalag, lugusan, karapay*), shells (*susu*) and shrimps (*udang*). These species were commonly trapped with fish traps (*bubu*), hocks and line and with plant-based fish poison. Today people claim that river sources have become polluted because of siltation from mining sites and the dust which deposits on the water, as well as because of chemicals used by oil palm plantations along riverbanks. They say that fish has developed certain diseases (as 'cuts on the body' and discoloration) or have died altogether. Today only small specimens can be spotted in the river, and there is no use in catching them because of their very small size.

The loss of medicinal plants in the area surrounding people's settlements is a major issue for the local communities. Our informants speak passionately about the importance of medicinal plants and their increasing worries for being unable to procure them. *"It is like we are dying little by little because we no longer have the plants needed to cure ourselves*" says Panglima *Kenisio Malasan.* According to Jomel Asdari *"before we had to walk half hour only to get the raw material for building our houses, for our artifacts and for collecting medicinal plants. Now we have to walk half day to the other side of the mountain before we can find the things we need".*

Paplina Setya showing her basketry

Also the massive migration of landless Filipino to the indigenous territories is blamed as one of the factors leading to the depletion of local resources, including medicinal plants. *"Before there were no other people or companies in the places where we gathered medicinal plants, now such places have been contaminated"* claims Mingrin Sewan. Environmental contamination is further attributed to mining: *"because of the great amount of dust caused by mining operations, we always suffer of cough, running noses and often feel pain in the chest"* (Paplina Setya).

"In spite of oil palm and mining operations we will not give up the use of traditional medicines. Although we must travel far away to get them, these plants are still the only remedy we have for curing ourselves" (Panglima Lonisio Aplino). Yet there is a deep concern on whether the coming generations will be able to use and recognize medicinal plants: *"We are afraid that the traditional knowledge of medicinal plants will not be passed*

to the next generation, also because these plants are now located very far from our settlements and it is difficult to bring the children with us when we look for them. Before, children were following the elders during the collection of medicinal plants and they were instructed on how to collect and use them. Now our children cannot identify these medicinal plants, because they haven't had a chance of seeing them" (Nestor Aplaon).

Agumil Oil Palm expansion on indigenous land in Marebong

The settlement of Marebong being now surrounded by oil palms

Oil palms replacing riparian vegetation along riverbeds in Marebong area

Indigenous swidden in Marebong overlooking Citinickel siltation ponds

C.1.5 local knowledge and plant related beliefs

The lack of shamans (*belyan*) in these communities and neighboring areas signals the progressive decline of traditional cultural practices and rituals. Community members told us that, in the past, both men and women played the role of shaman. Unfortunately, their knowledge died with them, since it was not passed to members of the younger generation, nor the latter were interested in learning it. As a result, shamanic knowledge transmission has been interrupted.

Nevertheless knowledge and beliefs regarding the use of plants continues to persist. Numerous plants are still used by local communities for curing and other purposes (see table no.1). Specific rules exist about the use and collection of medicinal plants. For instance, our informants told us that it is prohibited to gather medicinal plants during noontime. Instead, such plants should be gathered around 6 o'clock in the morning and after 5 o'clock in the afternoon. In fact, local people believes that if such plans are collected around noontime, also the life of the patient to whom such plants are administrated (e.g. in the form of infusion, cataplasm, etc.) will shorten.

Also the smoking of the 'sacred' *pärinaq* (*Kingiodendron alternifolium*) resin used during rituals and prayers should take place when there is no wind, to make sure that smoke will reach the benevolent deities (*diwata*) whose assistance is being sought. On the contrary if the smoke is dispersed by the wind, it will not reach the *diwata* and the ritual will not succeed.

It would appear that there is a certain level of specialization also in the collection of plants. There are ritual plants like *maranggawiri* that can only be collected by female shamans. The use of certain plants for generic uses [e.g. *balasbas* (*Licuala spinosa*)] is open to all but if the same plant is used for ritual purposes (e.g. *turon* trance dance), then, it should be collected only by a male shaman.

The harvesting of edible material from certain plants, such as the extraction of sago from *bätbat* (*Arenga undulatifolia*) is believed to be more productive if it takes place on new moon days.

The legend (*tuturan*) of 'Bätbat and Tubu'

Long time ago, there is a pair of lovers named Omawey (woman) and Kanakan (man). During that time, it was easy to get juice from sugar canes (tubu). One had only to cut them and the juice would easily come out and be ready for collection. When Kanakan cut the *bätbat* palm the starch would automatically come out and be ready for cooking. But one day, Omawey thought of stealing a rice straw from a house of a rich man named Surutan. Then she cut a *bätbat* palm which was planted by Kanakan and put the rice straw on it. Since then, Kanakan's life became so miserable. From that moment on, he had to pound and soak the starch of *bätbat* in water for two consecutive days before he could finally eat it. Because of this, Kanakan got upset with Omawey, and decided to separate from her. He took a rice straw and placed it inside a split sugar cane. From that day on, also the life of Omawey became so miserable and she had to chew the sugar cane before she could finally drink its juice. However, because of these difficulties in surviving and processing food, Omawey and Kanakan decided to marry, and they helped each other for life.

C.2 The Municipality of Rizal

Rizal is a 2nd class municipality in the province of Palawan. According to the 2000 census, it had a population of 31,745 people divided in 6,916 households. Rizal was formerly Barrio Tarampitao Point of Quezon. It became a separate municipality called Marcos on April 1983 by virtue of Batas Pambansa No. 386. On April 1988, it was renamed after national hero Jose P. Rizal by virtue of Republic Act No. 6652.

Sitio Salungsong (Barangay Iraan) is located in the said municipality. Here indigenous agricultural fields are well developed with a combination of banana, sweet potatoes and other root crops. However, part of this land supporting local self-sufficiency, has been grabbed by Filipino migrants who arrived in huge numbers around the year 1999/2000 after the completion of the National Road connecting the north to the south of Palawan and now encircling the whole province's main island. These migrants are now leasing what was once indigenous land to oil palm plantations. Significant portions of indigenous sustainably managed lands (consisting of a mixture of root crops, coconuts, banana and fruit trees) have already been converted into palm oil plantations. Overall, it would appear that, since 2005, a total area of about 1,000 hectares has been transformed into oil palm monocultures and 300 hectares of this have been developed in Barangay Iraan alone and, specifically in Sitio Salungsong, where large forest trees are still found. Here oil palm plantations have expanded close to clean water sources which are essential for the daily needs of local communities.

According to Jun Ali (chairman of the Salam cooperative) interviewed by the ALDAW staff, the expansion of oil palms into the local IPs managed Community Based Forest Management Agreement (CBFM) area has been possible through an agreement entered between the DENR and the cooperative. As a result, the pre-existing CBFM area was changed into a PACBARMA (Protected Area Community-Based Resources Management Agreement) thus allowing the planting of oil palms within its perimeter. A PACBARMA is a tenurial instrument awarded to local communities, including people's organizations, whose members are qualified tenured migrants and interested indigenous people who opt to participate in community-based projects within protected areas covered by the National Integrated Protected Areas System (NIPAS) act. The agreement also provides for the participation of the PACBARMA holders in decision-making processes dealing with the development of the area, with the allocation of resources, etc. Recently, Agumil Philippines, Inc. has interrupted collaboration with Salam cooperative because of high operational costs needed for transporting oil palm produces. The Salam plantation, in fact, is located too far from the main road. It is not yet clear what will happen to the existing plantation if the local cooperative will have to shoulder the cost needed for transporting their produces to the processing plant.

Moreover, oil palm development is not supported by the Mantalingahan Protected Landscape (MMPL), which was established through Presidential Proclamation no. 1815, and which will not allow further oil palm expansion within its perimeter. Overall, the rest of the oil palm expansion in Barangay Iraan has taken place on public land and alienable land, which – nevertheless – included areas that have been customarily used by the local Pälawan communities.

Interviews to indigenous members of oil palm impacted communities in Iraan contradict the explanations provided by government officials. For instance, some of the IPs interviewed during the ALDAW mission claim that they vacated an area of about 1,300 hectares within their CBFM area when they were told that this was classified, instead, as public and alienable land which, legally, could have been converted into oil palm plantations. They were also told that any action to stop oil palm plantations would have represented a violation of state laws. The local IPs, because of fear, finally decided to vacate this area which was planted with fruit trees and various crops and where the people had established a forest tree nursery.

Other local IPs, interviewed during the ALDAW mission, believe that their signatures had been forged and illegally used as a proof of their consensus in favor of oil palm plantations This is to say that the certification of precondition given by the NCIP to the local cooperative for expanding oil palm plantations into the IPs managed CBFMA area was not obtained through transparent FPIC procedures. According to NCIP officials, in this particular case, there is no evidence of illegal procedures since the indigenous community itself (the holder of the CBFMA) consensually submitted an application for oil palm development into their CBFMA area, and this is why no FPIC process was required.

Clearly as it appears, in Rizal Municipality there have been severe violations of indigenous peoples rights in connection with oil palm expansion. This includes the preparation of fake documents allegedly authorizing the oil palm company to enter the area. According to some local informants, former Mayor Samson de Gilio fraudulently used the attendance sheets signed by indigenous representatives during government consultations, as proofs of community acceptance of oil palm development. Despite this, the impacted Pälawan communities have decided not to bring their complaints to the attention of government since, as the ALDAW team was told, they were afraid of possible retaliation on the part of the Muslims members of the cooperative who had entered into private deals with DENR personnel. In addition to this, the affected Pälawan are unaware of the legal procedures that they should follow in order to file a formal complaint against the Salam cooperative and those government officials involved in fraudulent practices.

C.2.1. Sitios Bintatkaris, Salungsong, Kabongbongan, Barangay Iraan: general environmental features

The area occupied by these communities is located on hilly land, with different slope degrees. The settlements are surrounded by secondary and primary forest with patches of

fallow land under different stages of regeneration and some areas are planted with crops (upland rice, etc.). Banana and fruit trees groves, especially planted with durian, are common in the area. There is no *basakan* (irrigated rice cultivation) except in few suitable locations at the bottom of hills.

C.2.2 Population

According to our community organizers who visited this location, the total population in the area consists of about 1,000 people out of which about 40% are indigenous Pälawan, 30% are Filipino Muslims and another 30% are Cebuano and Ilongo coming from the provinces of Negros.

C.2.3 Artifacts production and use of plants

The most common baskets made in the area are *balatak*, *tabig* and *basag* and these are only produced for domestic use and not for the market. Only domestic objects such a *nigu* (flat winnowed trays), pandan mats (*banig*) and rattan mats (*biday*) are sold occasionally. Numerous plant species are used for the production of material objects employed in agriculture, hunting-gathering, music, house building, etc (see table no.1).

C.2.4. Livelihood activities and concerns

The local indigenous Pälawan are mainly devoted to traditional farming with upland rice and root crops representing the main staples. They also continue to diversify their orchards with different species of fruit trees. Only migrants practice wet rice cultivation and plant vegetables for the market. Those IP community members who have lost their land due to oil palm plantations work occasionally in the rice fields owned by migrants. Both IPs and migrants engage in the production of copra. The planting of rubber trees, either supported by private investors or by individual families, is also taking place in the area.
The significant increase of migrant population has led to competition over the use of natural resources. Wild greens were traditionally abundant and collected on daily bases by men, women and children. Today, the people complain about the scarcity of wild food due to overexploitation.

People also claim that, due to the establishment of oil palm plantations, material for basketry and other local items, as well as medicinal plants, are hard to find. People have to walk at least 1/2 hour in order to be able to assess such resources. Yet community members claim that they have not abandoned their knowledge of medicinal plants because this is the only thing on which they can rely in moments of need. Nowadays, there are many useful plants that young people cannot recognize. This implies that there is a degree of knowledge loss due to the fact that certain plant species have become rare, and can only be gathered in distant locations.

Occasionally, the people also produce *banig* and *biday* for the local market and collect and sell wild honey on seasonal bases. Beautiful rattan mats (*biday*) are made by men and sold for about 500.00 pesos each. We were told that it takes about one month for an individual to produce a single piece of biday. Pandan mats (*banig*) made by women, and having a length of about 2.5 meters, are sold for about 300.00 pesos each. It takes about one week for a single individual to produce one mat. Generally, except for domestic uses, women also produce *banig* to sell in the local market (*tabuan*). Also winnowing trays (*nigu*) are occasionally produced for the local market by both men and women and sold for an amount of 50.00 pesos each. According to local informants, for an individual to accomplish the making of one *nigu* takes about 2 days.

Honey from both *putiukan* and *nigwuan* bees is collected seasonally. This is sold or bartered to obtain rice. Informants claim that from a single bee hive up to 2 gallons of honey can be collected. The gathering of *beehives* is risky and requires considerable skill. The basic equipment consists of a rope, a smoking torch of *äga äga* (*Artocarpus* sp.) bark or other material, and a 'bush-knight' (*tukaw*). The gatherer climbs the vines encircling the trunk, until he reaches the canopy. If trees are very tall and have a large diameter, the people may build an aerial rattan 'bridge' made of a single rattan pole (generally of *Calamus subinermis* H.A. Wendl. Ex. Becc. and *Calamus merillii* Becc.), linking the forest ground to the canopy. The bees are driven away by smoking the nest. Then the hive is cut, wrapped in leaves, placed in a container, and lowered down with a rope. In the process, the nests are completely destroyed (Novellino 2001a).

Various species of animals were traditionally trapped and hunted and provided a steady source of proteins. However, the number of such species has decreased constantly over the years and some have completely disappeared. Such species include: macaque monkey, wild pig, pangolin, tree squirrel (both red and black species), flying squirrel, monitor lizard, python, dugong (lamantin) in the coastal areas, and birds such as green imperial pigeon, blue-naped parrot, talking myna, quail, agay, kalit. Aside from meat, species such as wild pig and monitor lizard also provide the skin for the drums

(*gimbal*).

During our interviews, the people named at least 20 fresh-water species, which, until recently, featured in their daily diet. Such species include various fish (*silwang, pait, ulpis, lugusan, balanak, kasili, dalag, kawate, bela'h, baribe, tu'long, karepay*), crustaceans such as *udang* (shrimp) and various types of shells. The people attribute the dramatic decline of such resources to the activities of oil palm companies and to the chemicals used in plantations. Local informants claim that, nowadays, they have to walk one hour upriver to access fresh water resources (e.g. shells).

C.2.5. local knowledge and plant related beliefs

Presently, there is still a shaman (*belyan*) performing curing rituals. According to our informants both women and man can become shamans, although only men are in charge of ritual singing and collection of medicinal plants.

The planting, gathering and use of plants is still regulated by particular prohibitions and underlined by specific beliefs. Generally, men gather herbal medicines. It is also prohibited, for instance, to pick/gather medicinal plants under sunshine. Over-heat is believed to greatly reduce the efficacy of such plants. For best results, medicinal plants should be collected early in the morning or in the afternoon after sunset.

The planting of fruit bearing trees must be done on new moon days, and this is believed to increase production. This also applies to the gathering of sago starch from *bätbat* (*Arenga undulatifolia*). The research team was informed that it is not good to plant a tree or root crop after full moon, because it will die.

Food prohibitions related to plants are also common. Most of such prohibitions draw on the analogy between plants' behaviors and the characteristics of the disease affecting the patient (see Novellino 1999c). For instance patients affected by skin eruptions and open ulcers should avoid all food that "opens up". This is because a homology is drawn between the natural opening of boils and the opening of gems, maize cobs, pods. This is to say that the condition of a patient affected by skin ulcer will deteriorate if he eats any food that originates from something that "opens up". Therefore, maize seeds and edible gems (e.g. bamboo shoots) may be interdicted to people suffering from skin eruptions and related pathologies. Generally, Pälawan are concerned about the adverse implications that analogical resemblance between animal/plant characteristics, diseases and body states might have on their health and well being (cf. Novellino 1999c).

The legend (tuturan) of the *bätbat* palm

Long time ago, there was a man and a woman who lived a simple life inside the forest. One day they saw two grasshoppers one on top of the other, like they were holding on each other. So, they also imitated the behavior of grasshoppers and, as a result, they had many children. So, *Lalj* (a powerful superhuman being) got angry and cursed them to suffer in life. From that moment on, life became difficult and people had to exert considerable physical effort to find food and collect starch from *bätbat* palms.

Pälawan myths associated or making reference to the extraction of palm starch offer important insights into peoples' worldview (Novellino 1999d, 2001). The short tales (*tuturan*) collected in Rizal and Española during the ALDAW research reflect a popular

aspect of Pälawan epic which traces the existence of the *bätbat* to a mythical golden age when food was abundant, and the people did not experience starvation and sickness. The myths also describe how an unreasonable and sinful human act changed the course of human destiny (cf. Macdonald 1988, Novellino 1999d, 2001, Revel 1990). Similar myths collected from other areas in Southern Palawan (Novellino 1999d) also narrate how, after the illicit cutting of the legendary *bätbat*, humans were deprived of the privilege to be immortal which was previously granted by deities to those who climbed the palm up to the upper layers of the universe. According to Pälawan mythology, the separation of the human race from the benevolent deities marks the beginning of an age of scarcity and also condemns the people to share the forest domain with malevolent creatures such as *säjtan* and *länggam* responsible for human sickness and death (Novellino 1999b, 2001).

C.3. Methodology and summary of key research findings

Methodologically, Pälawan technology, production of artifacts and uses of plants have proven to be useful indicators for evaluating and better understanding the impact of oil palm plantations on people's daily life. In this report, the term 'technology' refers mainly to "the number and kinds of tools a society uses – together with the knowledge about how to make and use them" (Haviland 1996: 194).

Research outcomes have been arranged in thematic tables (e.g. hunting and fishing tools, musical instruments, farming implements, housework tools, therapeutic/ritual uses, etc). Botanical species have been identified according to their vernacular and scientific names. When doubts have prevailed about scientific identification of Pälawan plants, only the local names have been reported together with the genera and/or plant's family names (if know). Scientific identification has mostly taken placed by comparing photographs of local plants taken in the field with drawing or images found in botanical volumes. In addition to this, further identification has also taken place by comparing the vernacular names of Pälawan plants recorded in the field with the list of local names listed in Madulid's, *Dictionary of Philippine Plant Names* (2001), as well with a similar list found in Nicole Revel's volume *Fleurs de Paroles Histoire Naturelle Palawan.*

Overall, research data collected by Lenita Nangoc (ALDAW Community Organizer) suggest that the disappearance of useful plant species due to oil palm expansion is extremely alarming. Ms. Nangoc's interviews to local informants from selected IPs communities in Rizal indicate that numerous species (see table 1) have already disappeared from the areas being impacted by oil palm plantations while others have been subject to dramatic decline. Her interviews to local community members reveals that about **5** species have registered an overall drop between **60% to 70%,** while another **22** species have registered a drop between **70% and 80%**. Out of the overall amount of species that cannot longer be found in the proximity of people's settlements, **32** of them are plants for medicinal and ritual uses, **27** of them are plants used for making artifacts, objects of daily use as well as for house material, **13** are palms having multiple uses and **7** of them are rattan palms, **4** are useful bamboo species. Another **9** species (no longer found) were used as fish poison, while **3** species provided the poison for the blowpipe darts and **15** are plants used as food/condiment. Instead species which, according to local people, have dropped between **60% to 70%** include **1** medicinal plant, **2** species used for the construction of objects and house material, **1** species used both as fish poison and in rituals, and **1** edible specie. Species that have registered an overall drop between **70% and 80%** include **9** species used for the construction of material objects, **8** species used for medicinal/ritual purposes, **2** edible species, **1** species used for both artifacts making and medicine, **1** species used

for the construction of objects as well as an ingredient for betel chewing. It must be pointed out, however, that Ms. Nangoc's evaluation on the percentage of plants' decline must be regarded as generic estimates since these have been obtained by cross-checking the responses of selected informants to a pre-prepared questionnaire and are not based on mathematical computations.

As it is indicated further in this study, the most common plant species used in basketry have almost or completely disappeared in those areas being directly impacted by oil palm development (see table no. 1). This entails that important fiber plants are no longer available in the areas where they were being originally collected. In such areas, useful plant species have been either exhausted and/or highly depleted and people have to walk several hours or even half day to be able to locate and harvest them. Overall, if massive land conversion for oil palm plantation will be allowed to continue, this may cause additional exhaustion of plant material and fibers which are essential to sustain people's cultural practices, artistic expressions and daily needs. It must be specifies that table 1 only provides a selection of plants used by the Pälawan of 4 communities located in two different barangay and, thus, it does not exhaust Pälawan ethnobotanical knowledge.
As of now, in Rizal, there are other barangay and indigenous communities that have not yet been affected by oil palm development, but it is likely that these too will soon be impacted by ongoing oil palm expansion.

For the purpose of this report, previous research data on plants' uses collected by Dott. Dario Novellino in the early nineties has been double checked with new information gathered by Ms. Nangoc in selected Pälawan communities[8]. Most of these species listed in tables no.1 and no. 2 are found in lowland and medium altitude locations, which coincide exactly with the areas where oil palm expansion is likely to take place. The species listed in **table no.2**, include the vernacular names of **150** useful plant species, belonging to at least **35** plant families. Out of these, **66** local species have been scientifically identified, while for **31** plant names only the genera is known. Overall, the number of unidentified plants amounts to **54** species and only the family name of **11** of them is known.

With reference to the making of artifacts, it must be stressed that Pälawan produce some of the finest baskets made in the Philippines. There is great variation in size, shape, and types of weave (see Novellino 2007a, 2007b, 2009a). Open baskets (*bäka*), baskets with lid (*tinkäp*) and for rice storing (*gäntangan*) are strengthened at the four corners and have a base supported by crossed rods. Other baskets (*bäjung*) for rice are rather flexible and expandable. Flat winnowing tray (*nigu*) are made of Dinochloa sp. and *Donax cannaeformis*. A wide range of rattan species is also used in basketry such as *Calamus javensis; Calamus caesius, Calamus subinermis*, as well as bamboo (mainly *Schizostachyum sp*.) The bark of different species such as *lindägung* (*Trema orientalis*) *bälinad* (*Sterculia sp*.) and *säjapuq*, (*Trichospermum sp*.) provides the material for the basket straps (see Novellino 2007a, 2007b).

The progressive decline of fiber material due to oil palm expansion does have an impact on the actual production of woven crafts, as well on the overall stock of knowledge associated with basketry, which include: **1)** knowledge of basket uses; **2)** knowledge of designs, which may embody an understanding of their meanings; **3)** knowledge of the fibers-providing plants, their morphology, location and availability in the surrounding environment; **4)** knowledge of fiber preparation (splitting, cleaning, darkening, bending etc.) (see Novellino 2009a).

Clearly as it appears, the loss of plant species used in the production of artifacts will not only affect Pälawan artwork and the transmission of basketry/carving skills but the whole cultural complex associated with it. For instance, Pälawan zoomorphic and anthropomorphic carvings are both artistic expressions as well functional tools for carrying out specific ritual offerings (*ungsud*). For instance, the carving of the wild pig (*biek*) is traditionally used for hunting-related rites. Traditionally, prior to the hunt or after a wild pig is killed, the hunter would make a request to the Master of pigs, *Ämpuq ät bjäk,* asking to be forgiven for having killed or for intending to hunt a wild pig (Novellino 1999b). One of the key moments in the hunter's request to the Master of game animals was a sort of 'exchanging practice', known as '*ungsud*' or '*sambi*' (a term which implies an action of giving and receiving). A wooden carving, representing the species that the hunter desires to catch is 'exchanged' for the real animal (Novellino and De Matteis Tortora 1999, Novellino 1999b). This practice still survives amongst some Pälawan groups of the upland but has largely being lost amongst the Pälawan of the lowlands, although skill mastery for the production of certain items still persists. Skill mastery is not solely identifiable with technical precision, it may or may not require an understanding of the entire skill complex that lies behind technical reproduction.

Our research findings also indicate that the a differentiation must be made between the loss of plant material/artifacts induced by land conversion into oil palm plantations, and the loss of certain traditional items that have disappeared long before oil palms were introduced in Palawan. For instance, this is the case of *säpukan* (blowpipe) which is made of two bamboo tubes of a small diameter enclosed in a larger diameter bamboo [*Schizostachyum lumampao* (Blco.) Merr.)]. The darts having an approximate length of 30 centimeters are balanced by a cone-shaped head made from the main veining of the *bätbat* (*Arenga undulatifolia* Becc.) and *busniq* (*Arenga brevipes* Becc.) leaves (Novellino & De Matteis Tortora 1999). At least eight vegetable species are employed in the making of the dards' poison: five of them are trees: *sumandar, uläs, kämändäg, rinsab* (*Alstonia scholaris* (L.) R. Brown), and *sälugän* (*Antiaris toxicaria* Lesch.); two are vines – *lupas* and *ditaq tigbung* while *bigaq badjang* is a species of the genus Alocasia (Novellino 1995-1996, Novellino and De Matteis Tortora 1999).

Today, blowpipe-related plant knowledge and technology is still being held by some Pälawan communities of the uplands and has been largely lost amongst the Pälawan of the lowlands. However, our research team was able to establish that also member of the acculturated Pälawan communities, as those inhabiting the Municipalities of Sofronio Española and Rizal, do keep blowpipes in their houses, either as a sort of family heirloom or as a tool for hunting small preys. Nowadays, the holders of blowpipes amongst lowland Pälawan communities are very few, and their production of hunting gears (e.g. *käraban* – the blowpipe darts' container) cannot be compared in terms of artistic beauty to the equivalent items being skillfully carved by the Pälawan of the hinterlands. The level of attention placed by the latter in the construction of artifacts stands, indeed, an indicator of a higher degree of cultural integrity. Nowadays, few Pälawan of the lowlands still engage in the construction of traditional artifacts with the same level of attentiveness, care and precisions that is displayed, instead, by the Pälawan of the remote hinterlands. The photographs of traditional artifacts, displayed in section b.2.5 of this report, provide clear evidence of the skillful work of which the Pälawan of the uplands are capable of.

Interviews carried out during the ALDAW field appraisals further confirm the findings of previous studies that have placed emphasis on the important role that palms play in Pälawan household food security (see Novellino 1999d). Palms, in fact, yield multiple types of products and provide both food and cash income. Also amongst the communities where the ALDAW investigation has taken place, wild palms are exploited for their edible cabbages (the tender meristematic region found in the growing tip and enclosed by leaf bases). Calamus spp. and Daemonorops spp. yield very little, but Arenga spp. and Oncosperma spp. might provide buds up to two-three kilograms. Raw palm buds are crispy and have a light taste; they are often boiled and served as a side-dish to main staples (e.g rice, cassava). Certain palms such as *bätuq (Caryota mitis)*, *bätbat (Arenga undulatifolia)*, *busniq (Arenga brevipes),*and *nangäq* have been traditionally exploited for their edible starch (Novellino 1999a, Novellino 1999d, 2010). Collection of palm buds, commonly used as vegetable, is not seasonal, and takes place any time, especially when no other side-dishes are available. It would appear that, in recent years, the role of palm food in Pälawan diet has somehow decreased. However, there are indications that palm food still play an important role in the face of dramatic changes that people is experiencing (e.g. increasing crops' failure due to attack of pests and unpredictable weather patterns) (see Novellino 1999). For instance during previous El Niño events, several Pälawan communities in Rizal Municipality have been able to counter famine and crop failures through increasing collection of starch from both wild and cultivated species (Novellino 1999, 1999d). It is likely that the dramatic reduction of starch palms caused by oil palm expansion will further deprive Pälawan communities from an important emergency food (palm starch), thus leaving them with no food options during periods of food shortage and crops' failure. The dramatic reduction of wild palms due to oil palm expansion also entails that Pälawan consumption of so called 'palm cabbages', locally known as *säpwa* or *bänkäs,* as well as the consumption of palm starch (*natäk*) will continue to decline.

D. FINAL REFLECTIONS AND CONCLUSIONS

During the past 50 years, Pälawan communities, and particularly the Pälawan of the lowlands, have lost access to very important food zones such as marine shores, coral reefs, and mangrove forest. Pälawan have abandoned some of these traditional foraging zones when migrants began to settle in the coastal areas. After the completion of the circumferential road in the year 2000, thousands of new settlers have entered the indigenous land, pushing the people further and further into the interior. Nowadays, because of the ongoing transformation of their traditional 'subsistence' and mobility patterns, Pälawan are experiencing reduced diversity of diet, and widespread malnutrition.

Especially the Pälawan of the lowlands have become increasingly dependent on purchased rice, while traditional consumption of cultivated root crops (cassava, sweet potato, colocasia and dioscorea species) is of a lesser significance today than it was in the past. Sometimes rice is consumed plain, and even the use of wild greens is often insufficient to provide adequate nutrition. In addition to this, amongst the most acculturated communities, imported foods such as tinned sardines, and baked goods (biscuits, bread, cakes) have affected Pälawan preference for traditional food (cf. Novellino 1999a).

Today, low energy intake and low protein-energy ration, in addition to the lack of Vitamin A, are major problems shared by the Pälawan, as well by the rest of the indigenous population province-wide. Overall, there is a nutritional imbalance in favor of

carbohydrates with relatively little of the other nutrients. The overall quantity of food consumed is often insufficient, especially during the hungry months. The scarce intake of meat, poultry, fish and vitamin C-A rich foods limits the absorption of iron. Iron deficiency, low intake of minerals and Riboflavin appear to be widespread throughout Pälawan indigenous communities, and it is generally chronic in South East Asia (cf. Novellino 1999a).

Given the low dietary regime that many lowland Pälawan experience, one can easily predict that the removal of natural vegetation, as well as of agricultural improvements by oil palm plantations may lead to the total collapse of their traditional livelihoods, thus fostering communities' impoverishment and increasing malnutrition.

Nowadays, in Palawan, one major problem faced by local 'activists' has to do with the fact that oil palm development continues to be supported by the provincial government. As a result, no attempts are made on the part of government agencies or departments to challenge the decisions made at the level of the *Sangguniang Panlalawigan* (Provincial Government). In addition to this, it must be pointed out that Governor Alvarez himself (a well-known supporter of agribusiness and member of the same family which logged Northern Palawan forest in the eighties) is chairing the Palawan Council for Sustainable Development (PCSD). This government agency, in principles, should ensure the sustainable future of the province but, in reality, it is playing a rather passive and uncritical role in relation to oil palm development. In fact, PCSD has allowed the expansion of oil palm plantations in the absence of a SEP (Strategic Environmental Plan) clearance. This is just an example to say that the short-sighted approach of the local political class continue to represent a major hindrance to the protection of Palawan environment and to the safeguard of rural and indigenous communities.

In addition to existing oil palm companies such as Agumil, Philippines Inc, PPVOMI and San Andres, Palawan continues to attract more agribusiness firms. One particular corporation, the so called "Green Power Palawan" (GPP) is a Palawan-based company, and one of its directors is Eric Yayen a prominent businessman and the owner of the Kainato restaurant chain, as well as the Vice-President of the Palawan Chamber of Commerce. GPP has gone so far to promise indigenous communities financial and technical assistance for the demarcation and recognition of their ancestral domains. Of course these promises are given (and will never be honored) for the purpose of getting people's consensus to oil palms and the development of large-scale plantations. GPP is looking for large tracts of land and they know that the only people who can provide these are, in fact, the indigenous peoples. Not surprisingly, in its own website GPP states that one of their key objectives is "to develop ancestral lands through long-term agreements". Unofficial sources reveal that GPP works like a sort of middleman: they try to negotiate agreements directly with ancestral land holders and eventually they invite venture groups to occupy and develop these lands with monocultures such as oil palm, rubber, cacao, etc.

While Palawan is becoming the 'last frontier' of industrila agribusiness, the Philippine environmental movement has been unable to come up with joint and coordinate actions to counter oil palm expansion. Indeed, this is a huge issue, and the possibility that our country will become one of the key exporters of oil palm kernels and palm oil in Southeast Asia (after Malaysia and Indonesia) is not so remote. In fact, recently, Mr. Paye (Undersecretary of the Department of Environment and Natural Resources – DENR) has announced the possible conversion of 8 million hectares of Philippine soil into oil palm plantations. But again, civil society's response to Paye's proposal and to the booming of

oil palm industry continues to be weak. On the other hand, indigenous peoples and marginal farmers, through their direct engagement, are gaining, day by day, an in-depth understanding of the impact of palm oil plantations on their life. The magnitude of the problem is such, and the forces behind it so powerful, that local communities are encountering serious difficulties in contrasting corporations without the support and mobilization of NGOs and civil society at large.

The weak response of Philippine civil society and of the national environmental movement to oil palm threats might be attributed to various and often interrelated factors.

a) Luck of information and/or misguiding information

In the Philippines, differently from Malaysia and Indonesia, information on the social impact and environmental hazards of oil palm development is limited and fragmented, thus it is difficult to gain an overall picture of the state of oil palm development nationwide.

Falsely, palm oil development has been presented by its proponents as a strategy for increasing domestic production of edible oil, which will ultimately benefit Filipino consumers. This somehow, has contributed to give a 'benevolent' outlook to oil palm industry.

Government reports on oil palm projects and plans are either one-sided (presenting the positive features and obscuring the negative impact). Some of these documents are for internal use only and hence are not circulated publically. The paucity and little availability of information has prevented NGOs and, civil society at large, to address the oil palm issue with the urgency that it requires.

b) False perceptions

Amongst some sectors of the Philippine civil society a perception exists that biofuels and oil-producing palms could represent a concrete response to global climate change, a way for abating greenhouse gases as a well an alternative to polluting oil-based fuels. Furthermore the idea that degraded areas colonized by grass such as *cogun* (*Imperata cylindrica*) - or used by indigenous people for their slash-and-burn practices - will be colonized, instead, by a 'greener' and more appealing landscapes made of oil palms, might have favorably captured the imagination of those environmentalists advocating for tree planting and against the use of fire in agriculture.

e) Government propaganda

The government propaganda according to which oil palm plantations will be established only on unproductive and unused lands might have also contributed to reassure civil society on the risk of deforestation. In reality, most of so-called 'unproductive' lands are those used by indigenous communities since time immemorial, for swidden cultivation, collection of NTFPs, etc.

f) The narratives of conservationism discourse

The fact that oil palm plantations have expanded also at the expenses of secondary forest has not made environmentalists particularly alarmed since, in the narratives of conservationism discourse what really deserves full protection is primary forest while the combination of secondary forests with other post-fallow vegetation types is somehow

perceived as less valuable in terms of biological diversity. It must be pointed out that post extraction secondary forests constitute a substantial proportion (83%) of all forests in the Philippines and they have become most vulnerable to conversion or degradation due to their proximity to local communities (Lasco, Visco & Pulhin, 2001). This type of forest merits conservation as well, since it can achieve the same level of diversity as primary forests in Southeast Asia (Luna et al., 1999).

g) False perception of indigenous traditional farming practices

Philippine Civil Society, as well as Government representatives, are often unaware of the significant difference between burn and slash technology used by indigenous people and the very destructive slash and burn practices carried out by landless Filipino migrants. By and large, the idea of converting forest land into swiddens, independently of who is doing it (indigenous or non-indigenous) is antagonized and disliked by large sectors of the Filipino society (Novellino 2000, 2000a, 2007). Therefore, the idea that particular areas, rather than being subject to slash and burn farming regimes, will be converted into "evergreen" oil palm plantations might have been perceived by some as a beneficial contribution towards environmental sustainability, as well as a permanent solution to the use of fire in land clearing, which contributes to CO2 emission in the atmosphere.

e) Insufficient collaboration between NGOs

The practice of noninterference amongst Filipino NGOs is generally respected, and no one tends to interfere with what another group is doing. However, on several occasions this practice has also led to the inability of sharing important lessons-learned and working together on key advocacy issues. Paradoxically, in some instances, the NGOs have replicated the same system of the government where little communication goes back and forth between the various departments and, as a result, programs and laws are often conflicting and overlapping. When NGOs do not communicate sufficiently with each other or, in some cases, cannot agree on potential solutions, then it is unlikely that indigenous people (which these NGOs directly or indirectly claim to support) will be able to establish a meaningful partnership amongst themselves on issues such large-scale plantations and oil palm development.

f) Lack of a long-term agenda

Organizations dealing with environmental and human rights issues do not always have a long-term advocacy/campaign work-plan. Many Filipino NGOs and also indigenous organizations rather than being "vision and processes-oriented" (long-term approach) are becoming more "project-based" (short-term approach). In short, rather than sticking to a long-term plan of action, they become implementers of projects whose priorities are mostly dictated by donors. In many case the presence of NGO in a certain community depends on the duration of a given project. When project funds are exhausted the NGO vacate the area. As a result, at the end of a project, local communities lose contact with their NGO partners. The relationship between an NGO and its field partners (especially in moments of needs, e.g. encroachment of corporations, etc.) should be a long term one, even when there is no project ongoing and no money fuelled to sustain such relationship. As of now, with respect to oil palm development in the Philippines, no long-term advocacy/campaign plan has yet to be drafted or agreed upon by potentially concerned NGOs.

g) No steady and continuous paralegal assistance to local communities

Often a simple event, occurring at a particular time, can dictate the future of a community and sometimes even its physical and cultural annihilation. In the majority of cases, when corporations enter indigenous territories, communities have no capacities to deal and counter forces that are extremely powerful and invasive. Many indigenous communities, due to their inability of dealing with such corporations, end up believing in the corporations' promises of a prosperous future (e.g. free medical assistance, livelihood project, free housing, etc) and they end up signing what they should have never signed and that will ultimately lead to their social collapse and loss of livelihood. If these communities, during crucial moments, had people from NGOs and human rights/organizations assisting them in making informed decisions, perhaps, so many thousands hectares of indigenous land would have been saved from devastation by oil palm and other large-scale monocultures.

Some of the largest Filipino NGOs which manifest (very rightly) their disgust about the brutal killing of IPs advocacy leaders, through media and press releases, often do not have a single member of their staff assigned to the impacted areas and, only rarely, they work hand in hand with these vulnerable communities facing constant threat. The Bla'an people of Cotabato who have declared a 'tribal war' against mining corporations, the Manobo and Higaonon leaders of Bukidnon, Agusan and other provinces, who are losing their life's to save their land, are the very people incarnating the civil society's hope for social change and justices. And yet they receive little or minimal support from the NGOs circle, especially at the national level. It would be desirable that the largest Manila-based NGOs, as well as those based in Palawan, would initiate a process whereby funding from abroad is requested for extending much support to these vulnerable communities and their brave indigenous representatives.

H) Compliance to Donors' agenda

In order to achieve massive empowerment at the local level more qualified COs and human resources are needed, this also means that NGOs and Indigenous Peoples Organizations should be, perhaps, less complacent with the agenda of donors and more focused in pushing their own agenda and priorities such as: training more paralegals and qualified COs to be dislocated in oil palm/plantations/mining affected areas in order to re-orient and assist communities, especially at the time when important decisions need to be made, (e.g. whether to accept or reject a given corporation). The presence of well trained COs/paralegals appointed to specific areas, would also entail that unscrupulous officials from NCIP (National Commission on Indigenous Peoples) would have limited chances to extort fake FPIC though illicit practices.

I) Too many international 'events' and too little action at the community level

It is now a common practice of international financing institutions, such as those of the UN Circle as well as for many CGIARS, to invite indigenous persons from Philippines and other countries to attend meetings, conferences and workshops in European or in other foreign locations. In these international fora, indigenous community members (e.g. everyday IPs, living full time in their communities) could hardly mobilize their own knowledge. This is because their claims and aspirations cannot be easily translated into the language in which western discourses on 'environment', 'sustainability', 'identity' and 'science' are framed. In short, these international and very expensive gatherings,

international conferences, etc. represent an inadequate platform for the most disadvantaged and disempowered indigenous peoples to speak out their voice and discuss their priorities.

Indigenous representatives from Philippines and other countries, who frequently participate in these international meetings, are generally educated persons (in the sense of having followed a formal educational curricula) and have acquired international reputation and a legal personality. However, the knowledge and experience they have gained at the international level is not always transferred to the 'people' scattered in the various indigenous communities nation-wide.

Some of these well-known, international indigenous representatives, often speak good English and are well educated, and that's why the international agencies chose them as their 'indigenous' counterparts. In comparison, the voices of the 'people' - at the community level - is seldom heard. Often little communication goes back and forth between the IPs attending international gatherings and the people living at the community level. Hence, a gap exists between international-based debates on IP's rights, oil palm development, agribusiness, etc. and what actually happens in the field.

The raise of extra-judicial killings of indigenous leaders and activists in the Philippines (also with reference to oil palm expansion), the increasing tension between so called 'pro-mining' and 'anti-mining' groups, the fact that corporations through the connivance of NCIP are still able to obtain FPIC through questionable procedures, the simple fact that many IPs are entering into unfair agreements with oil palm and agribusiness corporations, etc. stand as clear evidences that NOGs and Civil Society Institutions have not succeeded in empowering the masses and in building community consensus around crucial issues such as oil palm development.

More financial and human resources for paralegal support and awareness building needs to be invested in order to bring awareness on the impact of oil palm development and other related issues. In comparison, one should economize on conferences, congresses and similar events held in the capital cities (Manila, Cebu, etc.) which seldom lead to concrete actions/changes. Perhaps Filipino NGOs and indigenous peoples organizations, as well, should become more vocal in dictating these priorities to donors and ask a relocation of funds towards communities' perceived priorities and concrete needs.

It would be desirable if all NGOs and POs engaged in advocacy and lobbying for environmental protection, indigenous people's right, etc. would start exchanging their individual strategies and campaign advocacy plans with one another in order to come up with a sort of agreed advocacy "master plan" which should set the targets, key strategies and approaches to best pressure the national government, specific corporations, etc. on the issues that are most urgent (e.g. oil palm expansion). As a result, this agenda should influence the agenda of donors rather than the other way around.

Surely the struggle to save Palawan (as many other biodiversity hot spots in our country) has not only to do with saving trees and rare species. More importantly, it is about nourishing the Filipino cultural heritage, so powerfully represented by those indigenous communities that, after resisting Spanish and American invaders, are now countering new forms of 'colonialism' being pushed through by mining and agribusiness corporations.

The ongoing anti-oil palm advocacy launched by ALDAW while emphasizing the importance of biodiversity and rural livelihood, it also tries to foster respect and appreciation for the culture of those indigenous societies that are the most hit by oil palm expansion and mining. Changing the dominant colonial mentality that still depict the 'katutubo' as primitive and uncivilized people in need of being mainstreamed into the urban society, remain for all of us a fundamental challenge. In fact, one of our primary aims should be that of making all Filipinos aware of the fact that the last remaining biodiversity hot spots in the country (e.g. Palawan) completely overlap with the indigenous territory. This implies that if these areas are still beautiful and green (as they are), this is exactly because the 'katutubo' have maintained them in a sustainable state, over thousands of years. We should enlighten and inspire the everyday people to understand that forests are not only places inhabited by rare species, but they are actually the 'cradle' of indigenous cultures, from whom all Filipinos have originated. Until this simple concept is understood, forest will continue to be regarded as the 'place of nature' separated from 'culture'.

Environmental plundering by oil palm companies is not only a crime against nature but it is also a crime against culture, a sort of genocide that annihilates the most profound roots of the Filipino's history and ultimately plunders the cultural heritage of the whole nation. The beauty of Filipino people (its cultural diversity expressed through the distinct cultures of hundreds of indigenous culture) and the magnificence of the Philippine environment are two sides of the same coin, and are inextricably linked to one another, they are indivisible. The struggle against oil palm expansion (and monocultures in general) is a must and should be taken on board seriously by each Filipino organization/institution that has placed environmental protection and the safeguard of biocultural diversity at the top of its agenda.

E. ANNEXES

Annex no. 1 POLICY RECCOMENDATIONS

ALDAW field findings suggest that if oil palm expansion continues to push through this will surely cause irreversible changes to Plawan biocultural diversity, as well as to indigenous sacred and worship sites, which occupy a special position in people's cosmology and worldview. Furthermore, with the conversion of more ancestral land into oil palm plantations, the resource-base on which many Pälawan indigenous communities depend for their survival, including water sources and NTFPs extractive reserves will be depleted to an unprecedented level. The destruction of these areas by oil palm operations has already infringed the following rights under the IPRA law:

> **a) *Rights of Ownership -*** *The right to claim ownership over lands, bodies of water traditionally and actually occupied by ICCs/IPs, sacred places, traditional hunting and fishing grounds, and all improvements made by them at any time within the domains;* (Chapter III, Sec. 7, item a)
>
> **b) *Rights to Religious, Cultural Sites and Ceremonies -*** which includes *"the right to maintain, protect and have access to their religious and cultural sites"* (Chapter VI, Section 33).
>
> **c) *Right to Develop Lands and Natural Resources -*** **"***Subject to Section 56 hereof, right to develop, control and use lands and territories traditionally occupied, owned, or used; to manage and conserve natural resources within the territories and uphold the responsibilities for future generations; to benefit and share the*

profits from allocation and utilization of the natural resources found therein; the right to negotiate the terms and conditions for the exploitation of natural resources in the areas for the purpose of ensuring ecological, environmental protection and the conservation measures, pursuant to national and customary laws; the right to an informed and intelligent participation in the formulation and implementation of any project, government or private, that will affect or impact upon the ancestral domains and to receive just and fair compensation for any damages which they sustain as a result of the project; and the right to effective measures by the government to prevent any interfere with, alienation and encroachment upon these rights"; (Chapter III, Sec. 7, item b).

In consideration of the fact that such rights have already been bluntly violated, and that no NCIP Certificate of Pre-Condition (PC) has been obtained by Agumil Philippines, Inc. by the Palawan Palm Oil & Vegetable Oil Mill, Inc (PPOVOMI) and other agribusiness enterprises, **the National Commission on Indigenous Peoples (NCIP)** should then act promptly and uncompromisingly to file a case against such companies before its Regional Hearing Office (RHO). This is not a matter to be further postponed since the Palawan Provincial Office of NCIP has already ascertained that oil palm plantations overlap with the ancestral domain of Tagbanua and Pälawan tribes in at least 16 barangay belonging to five municipalities (see documents below).

In line with its mission to preserve, develop and promote Philippine arts and the richness of indigenous cultures, **the National Commission for Culture and Arts (NCCA)** should take appropriate actions to safeguard Palawan knowledge, livelihood and cultural expressions which are now being threaded by the conversion of indigenous ancestral lands into of oil palm plantations. This is in line with **Republic Act No. 10066 (March 26, 2010),** *[National Cultural Heritage Act of 2009],* Providing for the Protection and Conservation of the National Cultural Heritage, as well with NCCA functions as mandated by RA No. 7356. Such functions, amongst others, include the regulation of "activities inimical to the preservation/conservation of national cultural heritage/properties" and the investigation of "such inimical activities in conjunction with the proper government agencies, such as the Department of Interior and Local Government, the National Historical Institute, the National Museum and other such agencies, with the aim of prosecuting such activities and recommending other actions such as legislation, executive issuances and other appropriate actions".

As of now, **PCSD, DENR, PCA** and **DAR** do not appear to possess any map of oil palm plantations in Palawan. There is no evidence that any social, cultural, economic or environmental baseline study or impact assessment has been undertaken by such agencies before or since the establishment of the plantations. The fact that such documents are nowhere to be found raises the question of the legality and status of oil palm plantations in Palawan. Undoubtedly, in the absence of accurate feasibility studies and not knowing the unintended consequences of oil palm expansion, both environmental sustainability and local livelihoods are being put at serious risk. The concerned government agencies as well as the oil palm companies should produce, as soon as possible, reliable maps showing the exact locations of planned oil palm expansion as well as the areas already been converted into oil palm plantations.

With reference to oil palm expansion, the **PCSD** should ascertain for itself the social acceptability of and environmental damage caused by such operations. Specifically it should respond immediately to the complains of oil palm impacted communities that were

documented by PCSD staff during a an appraisal mission facilitated by ALDAW and which took place in 6 southern municipalities between 16-19 November 2013. The outcomes of this appraisal should be made public and be circulated amongst NGOs and the concerned government agencies.

DENR and **PCSD** should ensure the removal of oil palms planted by Agumil Philippines, Inc. in illegally cleared forest, and that the depleted areas be reforested with endemic species. Soil erosion control measures should be implemented with haste along deforested riverbanks. Specifically **DENR-EMB** should take immediate actions to respond to the ocular inspection of the 1st Multipartite Monitoring Team (MMT) that took place in the Municipality of Quezon between 12-14 November 2013. Some of these findings indicate that **1)** Agumil and some of its cooperative out-growers have expanded their plantations without SEP clearance and outside of the ECC area, this is with particular reference to the following areas: Berong, Malatgao, Alfonso XIII, Tabon, Maasin and Kalatabak; **2)** Agumil has clear-cut virgin forest to the extent of completely eradicating large trees and riparian vegetation along the Liambungan River in Berong. Moreover, illegal road construction by Agumil, along the Liambungan riverbanks, has accelerated soil erosion. DENR should then proceed to immediately charge Agumil for the cutting of timber in natural and residual forest, thus in violation of Executive Order 23, S 2011; **3)** oil palms in Berong have also been planted in cleared second-growth vegetation inside the CADT land of the local Tagbanua communities of Berong; **4)** Agumil was unable to provide the MMT with: a) a map of planted oil palms, b) with the Environmental Impact Assessment for that area, c) with the Self Monitoring Report (SMR), d) the Compliance Monitoring Report (CMR), e) as well as with the Environmental Management Plan (EMP). Agumil failed to present any of this documentation. The environmental impact statement/study (EIS) was submitted at a later stage, but was regarded by the MMT as incomplete and not updated. Agumil should be made accountable for the failure to submitting the required documentation.

The provincial government, through its **Provincial Cooperative Development Office (PCDO),** and in collaboration with **the Cooperative Development Authority office** in Puerto Princesa City and **the Department of Agrarian Reform (DAR**), should reassess the contracts that have been entered between Agumil and local farmers cooperatives and suggest suitable ways for rectifying them. The people, in fact, has entered into memorandum of agreements with Agumil which were written in English and which they could not understand. A cursory look at the so called Production Technical Marketing Agreement (PTMA) entered between farmers' cooperatives and the Agumil shows that they are solely in favor of the company and at the complete disadvantage of cooperatives. For instance PTMA Section 1.14 recites that: If the cooperatives mismanage the operation they shall "…*hand over the management to AGPI…*". A former cooperative chairman explains that 'mismanagement' must be interpreted here as the inability of farmers to produce the required quantity of fresh fruit brunches per hectare, e.g. as the failure to meet the company's own expectations and projections. In short 'underproduction' and partial crop failure are regarded by Agumil as sufficient reasons for taking over the management of the land and taking away from cooperatives all decision-making power. (cf. Larsen at all 2014). A Management Services Agreement (MSA) sets out the terms and conditions for AGPI to manage the project on lands provided by the cooperatives. Both contracts contain provisions, which place the overall control of plantations, production and sale with AGPI while the majority of financial and managerial risks stay with the cooperatives. For instance, AGPI is entitled to take over management if the project is not managed to their satisfaction. In addition to this, AGPI is imposing a 14% interest rate on all additional expenses (e.g. loans for purchasing fertilizer) and a 10% management fee which further

contribute to deepening the cooperatives' debt (see Larsen at all 2014). In addition to this Agumil's sister company, the Palawan Palm & Vegetable Oil Mills Inc (PPVOMI), rather than guaranteeing growers proceeds from the sale of fruit brunches according to the prizes set by the world market, it relies on its own 'pricing formula' which makes the proceeds contingent on the internal milling efficiency of the PPVOMI plant, prior to the deduction of 15% gross profit for PPVOMI. The so called 'pricing formula' is further calculated on PPVOMI's own reports about the selling price for CPO and kernel oil which, of course, farmers/growers have no chance to verify and audit (see Larsen at all 2014). As of now, all request made by officials and members of such cooperatives to amend the terms and conditions of such agreements have remained unheard.

The issue of farmers' indebtedness with both Agumil and **the Land Bank of the Philippines** should be carefully assessed by the concerned government agencies. It would appear the conditions for farmers to become indebted have been engraved into oil palm development schemes since their very inception. The bank commits 80% financial assistance while the remaining 20% becomes the borrower's equity. For newly formed cooperatives, having little experience and no capital, it is most impossible to provide the required financial counterpart. However, Agumil has found ways to overcome this constraint by setting up the equity for the cooperatives in order for the LBP to commit the 80% equity (cf. Barraquias 2010, Larsen at all 2014, ALDAW 2013). However, according to farmers, the Agumil did not inform them that a compounded interest rate of 14%. had been applied to the equity that AGPI had set up for them. As a result, cooperatives have now double loans, both from AGPI and LBP. Interestingly enough, a key provision contained in such loans-contract states that loans must be fully amortized before farmers can take out profit on the sales of oil palm fruit bunches. Many farmers now fear that their debts will continue to pile up for the entire duration of the project (30 years) and, being unable to meet payment schedules, they may end up losing their lands whose titles are being withhold by LBP as collaterals. As soon as possible the Land Bank of the Philippines should commit Itself to restructure cooperatives' loans, particularly with reference to amortization schedule and with the final objective of reducing penalties In case of delayed amortization (cf. Larsen at all. 2014).

Furthermore, the Land Bank should put binding policies in place to protect the poor and the environment, as well as to monitor the social and economic impact of its loan facility on the affected communities. They should also identify ways for compensating communities for the damage they have received because of oil palm development and they should return them the original land titles which are still being withhold by the bank. Overall, the Bank should make plans for restoring the livelihoods of the affected communities through the project they have financed before committing more funds for oil palm expansion. It is worth nothing that Land Bank has an Emission Reduction Purchase Agreement (ERPA) with the World Bank under the Clean Development Mechanism (CDM). It is suggested that this mechanism should help to identify and finance suited technologies to reduce methane emissions by the palm oil processing plant in Maasin (see Neame and Villarante 2013)

The Department of Labour and Industry (DOLE) should investigate allegations of unfair working conditions experienced by plantation laborers. It should also support plantations workers to form unions/ associations as they wish, so to be able to better negotiate their rights with agribusiness enterprises.

In view of the alarming destruction of coconuts in Southern Palawan by beetles and other pests, **PCA** and **DA** should improve their pest eradication control measures and provide communities with sufficient technical means to counter pests' infestation.

The provincial government should move quickly and resolutely to approve a moratorium on further oil palm expansion in Palawan. On 29 September 2014, Dennis Socrates, the Vice-Governor of Palawan Province (Philippines) has met a delegation of farmers and indigenous peoples belonging to the recently established Coalition against Land Grabbing (CALG). CALG members, accompanied by Bishop Pedro Arrigo from the Apostolic Vicariate of Palawan, have delivered a petition signed by more than 4,200 individuals from oil palm impacted communities, asking Governor Alvarez to pass a moratorium on oil palm expansion. The latter should be put in place with no hesitation, at least until reliable scientific data becomes available on the real benefits gained from oil palm development in comparison to its unintended costs such as increased carbon dioxide (from cleared plantation areas), loss of traditional access to land and resources, reduced land productivity, loss of traditional livelihood, biodiversity loss, etc. The government of Palawan rather than pushing for industrial agricultural schemes that do not foster local consumption and are geared towards export, it should promote – instead - micro-credit programs for small land holders and public investments to support peasant agriculture, family farming, artisanal fishing and indigenous food procurement systems that are sustainable and based on ecological methods.

A serious review of existing and proposed oil palm plantations is urgently needed, in order to assess their present ecological status and the overlapping between them and those areas that are still conserved and managed by indigenous people as well with the ECAN land categories within the SEP law. Unless such review is carried out, there is a high risk that the environmental and ecological sustainability of the province, its agricultural productivity, and people's food security, will be severely and irremediably compromised.

Annex no.2

TABLE NO1. LIST OF USEFUL PLANT SPECIES AMONGST THE PÄLAWAN OF SOFRONIO ESPAÑOLA AND RIZAL, SOUTHERN PALAWAN

Local name	Scientific name and family	Uses	Additional remarks
PLANTS FOR THE CONSTRUCTION OF MATERIAL OBJECTS AND FOR HOUSE MAKING			
Äblas	*Code: pat1-1*	House-posts (Riz.)	It is believed that certain types of caterpillars (*ulad*) originate from this plant. Completely depleted (Riz.)
Ägtap	*Code: pat1-2*	A more recent type of coconut grater made of a wooden seat to which it is inserted a metal rounded tip to scrape the endocarp from the coconut shell (Riz.)	
Änilaw	*Code: pat1-3*	Handle of the long-blade knife *(tukäw)*(Riz. + Esp.)	
Älumangi	*Code: pat1-4*	Used to cure stomach-ache (Esp.) Planted around the house as a protection against malevolent entities.	
Ändaramäy	*Code: pat1-5*	A rope is made from the bark to be used in the construction of *'siyud'* (scoop nets) (Esp. + Riz.)	Approx 70% drop (Riz.)
Ängkukubi	*Code: pat1-6*	For manufacturing the two-strings lute *'kudlong'* (Riz.)	Completely disappeared (Riz.)
Apad apad	*Code: pat1-7*	For manufacturing mortars *'läsung'*, large cooking spoon *'lalu'*, handles of various objects and canoes *'gubang'* (Esp. + Riz.)	Approx 70% drop (Riz.)
Apaq dalan	*Code: pat1-8*	Used for its 'magical' power that makes oneself irresistible to the person he/she loves or is interested in. The flowers are soaked in coconut oil and used as a perfume. (RIZ)	
Apugan		Handle of dard quiver 'karaban (Esp. + Riz.), mortar (*läsong*), sheet and handle of machete	Completely disappeared (Riz.)
Aljäw	*Code: pat1-9*	Mortars (l*äsong*), canoes (*gubang*) (Riz.)	Completely depleted (Riz.)
Bälinad	*Code: pat1-10*	The bark is used a strap for	Approx. 80% drop (Riz.)

		baskets, and the wood is used to make handles for knifes. (Esp. Riz)	
Bangkuang Pangdan	*Code: pat1-11*	Woven crafts such a mats (*banig*), bags for rice (*bayong*), etc. (Esp. + Riz.)	
Bayug		Canoes (*gubang*), mortar *(läsung)* sheets for macetes *(taguban)* and handles of knifes (Riz.)	Completely depleted (Riz.)
Bintangur	*Code: pat1-12*	Two-string lute (kudläng o kujapi) (Riz.)	Completely depleted (Riz.)
Buldung	*Code: pat1-13*	Flat winnowed trays '' (Esp. + Riz); tying material for making roofs-sections (*pawid*) and for tying fish together when carrying or selling them.	About 60% drop (Riz.)
Bunot bunot	*Code: pat1-14*	The barks used as a straps for baskets (Esp. + Riz.)	Completely depleted (Riz.)
Buntalinaw	*Code: pat1-15*	Used for the sheats of machetes (Esp. + Riz.), handles of dards' quivers *(karaban)*, handles of knifes, spoons *(lalu)*, mortars *'(läsung).*	Completely disappeared (Riz.)
Dikläj		Handle of the traditional forged axe *(wäsäy)* and of other items. (Riz.)	
Dipanga	*Code: pat1-16*	Handles of darts' quivers *'karaban'* (Esp. + Riz)	Completely disappeared (Riz.)
Dungän		Boats and canoes (*gubang*) (Riz.)	
Kämlit	*Code: pat1-17*	Two-strings lute (*kudläng*) (Riz.)	Approx over 70% drop (Riz.)
Kälasa	*Code: pat1-18*	Canoe (guban), sheet for machete, mortar *'läsung'* (Riz.)	Approx over 70% drop (Riz.)
Gähid	*Code: pat1-19*	Used as a weaving material to make huts, small plates as well as a tying material in the making of pigs' spring traps (*bäwug*) (Riz. + Esp.)	The makings of huts and plates from this plant seems to be acquired by Filipino migrants. Completely depleted (Riz.)
Gängas	*Code: pat1-20*	Handle of machete (Esp. + Riz.)	Completely depleted (Riz.)
Lanipga	*Code: pat1-21*	Handle of machete, mortar (Esp. + Riz.), canoe, sheat for machete	Completely depleted (Riz.)
Malabakir		Handle of machete (Esp.+ Riz.)	Completely depleted (Riz.)
Malaupas		Mortars (*läsung)*, spoons (l*alu'*) . (Esp. + Riz.) .	Completely depleted (Riz.)

Maraitum		Cooking spoon (*luluag*) (Esp. + Riz.)	Completely depleted (Riz.)
Mararangu		Canoe (gubang), mortar (*läsung*) handle of machete, two-string lute (kudläng) (Riz.)	Completely depleted (Riz.)
Natuq	*Code: pat1-22*	Handle of machete, mortar, canoe *(gubang*), wooden-plate for gold panning (*paningan*) (Esp. + Riz.)	Completely depleted (Riz.)
Sälugän	*Code: pat1-23*	The bark is processed to make g-strings *(ba'ag*) for men. The toxic sap is the basic ingredient for poisoning the blowpipe's darts (Esp. + Riz.)	
Säjapuq	*Code: pat1-24*	*The bark is used as a strap for baskets and the wood to make handles of knifes (Esp. + Riz.)*	About 70% drop (Riz.)
Sjar	*Code: pat1-25*	Canoes, boats and their parts	
Tägbäk	*Code: pat1-26*	Thatching and flooring of temporary shelters	
Tägäp	*Code: pat1-27*	The ropes made from the bark is used to make scooping nets for catching fish (Riz + Esp.)	Also used to make bark-clothes such as G-strings
Täguli		Used as a material for making spring-traps for wild pigs and monkeys (Riz)	The branches of this plant are wrapped in a cloth and tied around the body as a belt. This is said to add strength to the body
Tägab	*Code: pat1-28*	Cooking spoons and mortars (Rz. + Esp.)	
PLANTS FOR THERAPEUTIC AND RITUAL USES			
Abang-abang	*Code: pat1-29*	Used to cure wounds. The leaves are pounded and applied on the wound. The plant is edible to animals such as buffaloes (Esp. + Rizal). The root is also attributed with anti-piretic proterpties.	
Agäw agäw	*Code: pat1-30*	Used for ritual purposes, the leaves are pounded and applied to major wounds. If this plant will climb around another plant, the latter will slowly die (Esp. + Riz.)	Can be used as a talisman to attract animal games. For this purpose the smoke produced by burning this plant is passed on snare traps and hunting tools.
Aljäw	*Code: pat1-31*	The decoction of the roots is taken internally against cholera (Riz)	
Änduramäy	*Code: pat1-32*	It is attributed with anti-piretic properties. (Riz. +	

		Esp.)	
Andarasa o Rasa rasa	*Code: pat1-33*	The juice obtained from squeezing the boiled roots is used to reduce body temperature (Esp. + Rizal).	
Bälinad	*Code: pat1-34*	Used particularly to cure hemorrhagic wounds. The young leaves of the tip can be placed directly on the forehead against headache. (Riz. + Esp.)	
Buri	*Code: pat1-101*	The juice squeezed from fruits is believed to have some curative properties (Esp.)	
Änuling	*Code: pat1-35*	The grated bark is placed on the forehead, against headache. (Riz.)	
Änupul	*Code: pat1-36*	Used to lower body temperature the young leaves are pounded and used topically to reduce fever (Esp. + Riz.) The root is boiled and drank to increase fertility in women. (Esp. + Riz.). It is also believed to have antipyretic properties. It is used as well during agricultural rituals.	The water from this vine is also used to water the young rice plants in the *pinädungan* (a ritual area at the centre of the field) to protect them from diseases. Leaves are edible.
Apaq dalan	*Code: pat1-37*	The root is believed to keep away malevolent spirits such as *balbalan* (Riz.)	
Ärimbangun	*Code: pat1-38*	Used to improve sights, especially when eyes are blurred. It is also used by the shaman during agricultural rituals. When rice is affected by disease, the terminal branch of this plant is burned and inserted in a vertical position in the center of the swidden. The leaves can be placed on the body part affecetd by pain, particularly effective for muscular pains of the hips (Riz.)	
Banaba	*Code: pat1-39*	The bark is said to be effective against the cure of UTI and kidneys disorders. (Esp. + Riz.)	
Bangkal		Used as a purga for large herbivorous (caws and buffalos) for the purpose of devorming them . The young tips of this plant are used (Esp.). Used to cure stomach	

		ache and to induce abortion. The juice of the bark is used (Riz.)	
Bäjaj	*Code: pat1-40*	Used as a remedy to avoid those illenesseses cause by the sudden change of temperature (pasma), as well as to cure UTI, kidney disorders and cougth (Riz.)	
Bujän	*Code: pat1-41*	The leaves are made to be smelled by people suddnely becoming unconscious (Esp. + Riz.) The flowers are placed on the body (*tapal*) to reduce convulsions.	
Bukagan	*Code: pat1-42*	The bark soaked in water is said to be a remedy againt the bites of snakes and dogs (Riz).	Completely depleted (Riz.)
Butuq käting	*Code: pat1-43*	The pounded leaves are said to have various medical properties (Riz.)	
Binuwäq	*Code: pat1-44*	The water of the boiled bark is use to reduce body pain (Esp. + Riz.)	
Bulubulu	*Code: pat1-45*	The root is boiled and used as a remedy against caught, but also against diarrhoea with blood (Esp.)	
Buldung	*Code: pat1-46*	Used for agricultural rituals, the leaves on the tip are said to have antipyretic properties (Esp. + Riz.).	
Dägdagbasung	*Code: pat1-47*	The leaves are used during rituals for the swidden field *(uma*) and for human ailments (Riz.)	
Dalajdalaj		The roots are pounded and applied to wounds to stop bleeding (Riz)	
Däläs	*Code: pat1-48*	Used for agricultural rituals, and the boiled roots of this plant are said to be effective against the worst cases of missles . (Esp+ Riz). The boiled roots are also effective to reduce body temperature of infants. The seeds are used to produce necklaces.	It is believed that swallowing eight seeds of this plant is an effective remedy against skin eruptions (Riz.)

Dunkalang	*Code: pat1-49*	The inner part of this plant is grated and applied to the bites of poisonous animals such as alupjan (scolpendra) (Esp. + Riz.). Also effective against headache.	Leaves are said to magically attract wild pigs
Gapas	*Code: pat1-50*	The roots are boiled and used during rituals. It is said to be particularly effective against therapies aiming at solving problems of bones dislocation (Riz.).	A talisman is made with the cotton produced by this plant to become insensible to any struck from enemies.
Kadläm	*Code: pat1-51*	This plant has a strong scent and it is used ritually to cure rice diseases (Riz.)	
Kämburanga	*Code: pat1-52*	The young leaves of tip are used during curing rituals, and during the performance of orations (*tawar*) (Esp. + Riz)	
Kämilit	*Code: pat1-53*	The bark is said to be an effective antipyretic for children and the juice from the boiled bark can be equally used for stomach and intestinal disorders (Riz.)	
Kapal- kapal	*Code: pat1-54*	The pouded leaves are placed directly on those swolled body parts (e.g. due to insect bites) and on the forehead in case of headacke and to reduce fever (Esp. + Riz).	
Kawang kawang o Salingkawan	vine	A kind of vine used to make braclets and the fruit is used as a defense against vampires and other malevolent entities (Riz. + Esp.)	
Käjajubang	*Code: pat1-55*	Used in rituals and the leaves are said to keep malevolent beings away (Riz.).	
Kilala	*Code: pat1-56*	Used during curing rituals (Riz. + Esp.)	It is planted around the house to protect the household from malevolent entities and also in the cemeteries to prevent the raising of the deaths in the form of zombies.
Kunit	*Code: pat1-57*	Used during curing rituals. The juice from this root is also a remedy against stomach and intestinal disorders (Riz. + Esp.).	
Kusur	*Code: pat1-58*	Used for ritual purposes. The smoke from its leaves is very effective to send bees away from their nests (Riz.)	

Lindägung	*Code: pat1-59*	The juice from the bark is used as a remedy against mouth pustules and tonsillitis (Esp. + Riz.) The scraped leaves are applied to the head agaist head-ache and to reduce body temperature (Riz.)	Completely depleted (Riz.)
Maingit		The root is believed to keep vampires away (Esp. + Riz). The leaves are burned in the middle of the swidden field against certain pests affecting rice.	
Mata- Mata	*Code: pat1-60*	The leaves and roots are used as a remedy against tootache and also as a defense against malevolent spirits (Riz.)	The branch of this plant is placed in the *pinädungan* as a protection for the rice plants (Riz.)
Marabaqaj o Marabay	*Code: pat1-61*	The bark is used during massages to reduce stomach ache. The leaves are also burned in the swidden field to contrast pests (Esp. + Riz.).	Also used for fish poison
Marangguri	Grass	It is used during agricultural rituals to cure rice. The leaves are used as a remedy against toothache. The pounded root is used to stop wound bleeding and also as a remedy against intestinal and stomach disorders (Riz.)	
Palad-täkiq	*Code: pat1-62*	It is used for various rituals and the boiled roots are a remedy against relapse because of overwork, etc. It is also effective against cough. The boiled fruits are used to cure ulcers and 'high blood' (Esp. + Rizal).	Used as a sort of talisman after proper request to the mystical owner in charge of this plant (*Ämpuq päpalad*) (Riz.)
Palu – palu	*Code: pat1-63*	The steam is pounded to be used during therapeutic massages to solve problems of bones dislocation. The inner part, soaked in water, is a powerful anthipiretic (Esp. + Riz.)	
Päräk- idäng	*Code: pat1-64*	Used during curing rituals. The root is boiled and is said to be effective against intestinal and stomach disorders. The pounded leaves are applied to wounds to stop bleeding. The boiled	The leaves of this plant are passed on the muzzle of hunting dogs to increase their ability to smell wild pigs (Riz.)

		leaves are also effective against cough. (Esp. + Riz).	
Pärinaq	*Code: pat1-65*	This is one of the most important ingredients used in rituals. The leaves or resin are burned to keep malevolent entities away (Esp. + Riz.)	The exoduses of this plant solidify quickly and are burned as a sort of incense to establish contacts with supernatural entities
Piratäw	*Code: pat1-66*	Used in rituals. The leaves are said to keep malevolent entities away (Riz.)	The bark is put into water which is used to wash the eyes in order to 'see' beehives in the forest and/or to be able to determine the illness of a patient
Rinsab* o *Marseb	*Code: pat1-67*	The latex is used to cure wounds and to make scars to disappear (Riz.).	The decoction of the bark is used as a remedy against stomachache and to lower down fever. The wood is also used for various purposes.
Ruku – ruku	*Code: pat1-68*	The most popular plant used during diagnostic and curing rituals. It is believed to provide the shaman (*balyan*) with the gift of clairvoyance. (Esp. + Riz.)	
Säränit	*Code: pat1-69*	Used during curing rituals. The juice from the bark is used to increase fertility. The fruits are sweet and edible. The leaves are said to have antipyretic properties and can be applied directly to the body (Esp. + Riz).	It is believed to magically attract fish.
Silad	*Code: pat1-70*	Strips of Licuala leaves are tied into bunches (*dung-dung*) and used by the shaman during the trance-dance (*tarek*) (Riz. + Esp.) and as a decoration for the *pinädungan* (Riz.)	
Sumandar		The juice from the bark can be used for making the poison for the blowpipe's darts (Riz).	Also used as fish poison
Tabuq	*Code: pat1-71*	The internal fluid substance of this plant is believed to help to increase milk production in women who have just delivered. The fruits are mixed with rice seeds to increase harvest (Riz.)	
Tanaki	*Code: pat1-72*	The root is used as a remedy against fever. The internal part is boiled and drank as a remedy against malaria. (Esp.	The plant is placed in the *pinädungan* to protect the growing rice from pests.

		+ Riz). Used during agricultural rituals: it is inserted in the ground at the centre of the field (Riz.). The fluid contained in its steam can be drunk.	
Tängan tängan	*Code: pat1-73*	The juice from the bark is used in treating bones' dislocations and mussel pains (Riz. + Esp.)	
Täbug	*Code: pat1-74*	The root is boiled and used to treat headaches. The pounded leaves are applied directly to the body to reduce temperature (Riz.).	
Tajädan	*Code: pat1-75*	The skin of this root crop is boiled to treat body numbness (Esp + Riz). The inner part is pounded and applied to the body against rheum (Riz.)	The rhizome is used as a defence against malevolent spirits
Tirungan	*Code: pat1-76*	The young leaves of the tip are boiled and used to treat stomach and intestinal disorders (Riz.).	
WILD FOOD PLANTS			
Ägutäj	*Code: pat1-77*	Edible marrow and inflorescence (Riz. + Esp.)	Approx. 80% drop (Riz.)
Ämlung	*Code: pat1-78*	Young leaves (Riz. + Esp.)	
Äntutuhuq	*Code: pat1-79*	Tuber (Riz.)	
Äpari	*Code: pat1-80*	Tuber (Esp- + Riz)	
Asang asang	*Code: pat1-81*	Edible tips (Riz.)	
Babasalan		Edible leaves preferably cooked with fish (Esp. + Riz)	
Badak	*Code: pat1-82*	Edible fruits (Riz)	Completely depleted (Riz.)
Bagu	*Code: pat1-83*	Edible young leaves and fruits (Esp. + Riz.)	
Bulnuq	*Code: pat1-84*	Edible fruits (Esp. + Riz.)	Completely depleted (Riz.)
Duro manok	*Code: pat1-85*	Edible young leaves (Riz.)	
Genti	Wild tuber	(Riz.)	
Käljat	Vine	Fruits can be roasted (Riz.)	
Kändis	*Code: pat1-86*	Used as condiments: it gives a sour taste to food (fruits and leaves used) (Riz. + Esp.)	
Kädäg	*Code: pat1-87*	Young leaves (Riz.)	
Lima lima	*Code: pat1-88*	Tuber (Esp + Riz.)	
Lipso	*Code: pat1-89*	Used as condiments, it gives	

		a sour taste to food (leaves), commonly cooked with rice (Riz. + Esp.)	
Muta muta	*Code: pat1-90*	Edible fruits (Riz.)	
Piratäw	*Code: pat1-91*	Edible leaves (Riz. + Esp.)	
Puklo puklo	vine	Edible young leaves (Riz.)	
Saguri	root	Tuber (Riz.)	Consumed after being boiled
Säruwak	*Code: pat1-92*	Tuber (Riz.)	The inner tuber has a yellow colour
Serey serey	vine	Edible young leaves (Esp. + Riz.)	
Tuwad	*Code: pat1-93*	Tuber (Riz)	It has external spikes and the inner tuber is white
Ulansiman	*Code: pat1-94*	Edible young leaves (Riz.)	
EDIBLE MUSHROOMS			
Ämurung		Esp + Riz	Growing at the ground level
Äridep	*Code: pat1-95*	Esp. + Riz.	Growing, especially, on the dead trunks of *Arenga undulatifolia*
Bäsiqbäsiq		Riz.	Growing on decaying trees
Bulaw		Riz. + Esp.	Growing on tree trunks
Kalasan		Riz. + Esp.	Growing on tree trunks
Kampilaton		Riz.	Growing on decaying trees
Kuhung	*Code: pat1-96*	Esp. + Riz.	Growing on the ground. In Palawan mythology the shape of this mushroom is compared to the shape of the Earth
Kudop Kudop		Small size-mushroom (Esp. Riz.)	Growing on the felled trees, especially after forest clearing for *kaingin*
Lana lana		Riz.	Frequently seen on the decaying trunks of *Arenga undulatifolia*
Mananim bulo		Riz.	Growing in swidden fields especially after burning
Punti punti		Riz	Growing on the decaying trunks of banana
Sarip sarip		Riz.	Growing on tree trunks, and having a black colour
Tälungäg	*Code: pat1-97*	Riz. + Esp.	Growing on the decaying felled trees.
Tulägbuk	*Code: pat1-98*	Riz.	
Ulasan		Riz	
PLANTS FOR FISH POISON			
Apalang	*Code: pat1-99*	Fruits are used (Esp.)	
Bägna	vine	Bark is used (Riz.)	
Bäsak	*Code: pat1-100*	Bark is used (Riz)	The fruits are pounded and mixed together with the fruits of *bätbat*

			(Arenga undulatifolia) to be used as fish-poison
Pangi	*Code: pat1-102*	Leaves are used (Esp. + Riz)	
Känumäy	*Code: pat1-103*	bark and sap used (Riz.)	The sap of this plant is highly irritant to the eyes. Completely depleted (Riz.)
Kärut* o *Kudut	*Code: pat1-104*	The jiuce from the pounded tubers is one ingridient for fish poisoning. (Esp. + Riz.).	
Lagtang	*Code: pat1-105*	The juice from the squeezed fruits (Riz.)	Fruits and leaves are used as a light fish poison that only have an effect on small fish
Mägalsa* o *Mälägisa	*Code: pat1-106*	Seeds are used for fish poison (Riz.)	This small tree is cultivated
Payung	vine	Esp.	
Saheg			The juice from the pounded bark also has curative properties (Riz.)
Ulam	*Code: pat1-107*	Pounded leaves and fruits (Esp. + Riz.)	A childe who is late in learning how to walk is beaten seven times with the young leaves of this plant. It is believed that this will enhance the child's walking skill. The flowering of this plant signals the time when fields need to be weeded. The flower is said to cause allergies. The fruits are used as fish-poison. Approx 60% drop (Riz.)
OTHER TOXIC PLANTS			
Ditaq tigbung* o *Ditarabun	tree	An effective poison for blowpipe darts. Used in the hunting of monkeys and wild pigs. The toxicity is said to be able to kill human as well (Riz.)	
Badjang	*Code: pat1-108*	The sap of this plant is mixed with the sap of *Antiaris toxicaria* to poison the blowpipe darts (Riz.)	It seems to have also some anti-hemorragic properties. (Riz)
Gähid	*Code: pat1-109*	The sap is toxic and it is used as one of the ingredients for the mixture employed in poisoning darts for the blowpipe, for the hunting of wild pigs and monkeys (Esp. + Riz.)	
BAMBOOS			
Bikal	*Code: pat1-110*	Flat winnoved trays (*nigu*), baskets (*tinkop*) (Esp. + Riz.)	Approx. 60% drop (Riz.)
Binsag	*Code: pat1-111*	Flat winnowed trays (*nigo*), baskets (*tinkop*) (Esp + Riz.).	Edible marrow and shoots. Completely depleted (Riz.)

Bungbung	*Code: pat1-112*	Baskets (*tabig*), flat winnowed trays (*nigu*), walling mats (*sawali*), roofing (*tadtad*), fishing (Esp. + Riz.)	Also used to make a musical instrument (*sanger-sanger*). This is a vibraphone mainly used amongst the Pälawan of Quezon and Brooke's Point. Completely depleted (Riz.)
Käwuajan	*Code: pat1-113*	Flat winnowed tray (*nigu)*, baskets (*tinkop*), *pagang* (musical instrument) Esp + Riz	Edible marrow. The shoot (*rabong*) is edible
Näpnap	*Code: pat1-114*	Baskets *(tabig), nigu, sawali*, *balanan*, fishing traps, roofing (*tadtad*) (Esp. + Riz.), pigs' sping trap (*bawag)*(Riz.)	Completely depleted (Riz.)
Päsungan	*Code: pat1-115*	Material for making 'clips' (*gigipit*) to keep the main fibres tied to the circular frame during construction of *nigu* (flat winnowed trays).(Esp. + Rizal)	Edible marrow (*ubud*)
Sumbiling	*Code: pat1-116*	*Tabig, nigu, sawali, balanan, salug* (a kind of fishing trap), *sapukan, suling, sawali, ,nigu*, roofing (*tadtad*), (Esp. + Riz.), *balatik* (Riz.)	
Täring	*Code: pat1-117*	Unit of measurement for rice (*gantangan*), flooring, etc. (Riz. + Esp.)	One gantang is almost equivalent to 2.5 kg.
Uläs	*Code: pat1-118*	The juice from the pounded bark is an effective dart's poison for wild pigs (Riz.)	
PALMS			
Alusag		Riz.	
Ämagas	*Code: pat1-119*	*Tabig, nigu,tupur, tingkäp* (Esp. + Riz.)	Edible marrow (*ubud*). Completely depleted (Riz.)
Änibung	*Code: pat1-120*	Flooring (*datag*) Esp. + Riz.	Edible marrow (*ubud*). Completely depleted (Riz.)
Ärurug	*Code: pat1-121*	*Biday*, fish baskets, tying material for making *nigu*, bags, snare traps for chickens (*rabay*) , fishing traps (*bakungan*) (Esp + Riz)	Completely depleted (Riz.)
Banga	*Code: pat1-122*	Dibble stick (*tutugda*) (Esp. + Riz.)	
Bätbät	*Code: pat1-123*	Spear trap for pigs (*bawog*)	Used for extracting edible starch.

			Completely depleted (Riz.)
Bugtung	*Code: pat1-124*	A type of spear (*kalawit*), handle of the harvesting knife (*gelit*), backpacks (*kiba*), (Esp. + Riz)	Completely depleted (Riz.)
Buklid	*Code: pat1-125*		Edible marrow (*ubud*)
Busniq	*Code: pat1-126*	Straps for baskets and backpacks (*rarung*) and also used to make devoration in the weaving of *nigu* (Riz)	Completely depleted (Riz.)
Diplak	*Code: pat1-127*	Riz.	Edible marrow (*ubud*)
Kalapag o Palapag o Palaran		Fibers for weaving (Riz. + Esp.)	
Kälapi	*Code: pat1-128*	Baskets (*tabig*), rice baskets, fish baskets, handle of spear (Riz.)	Completely depleted (Riz.)
Pärasan	*Code: pat1-129*	Tying material for baskets (Riz. + Esp.)	Edible marrow (*ubud*)
Pisa	*Code: pat1-130*	Dibble stick (*tutugda*), flooring (*datag*), seed used as an ingredient for betel chewing (Esp. + Riz.)	About 70% drop (Riz.)
Sika	*Code: pat1-131*	Mats (*biday*), fish baskets, tying material for *nigu, rabay* , fishing trap (*bakungan*), back-packs (*rarong*) (Esp. + Riz)	Completely depleted (Riz.)
Silad	*Code: pat1-132*	Leaves are stripped and tied together to be used during *terek* dances (Riz.)	Completely depleted (Riz.)
Tikäd manok	*Code: pat1-133*	Tying material for house construction, and for the handle of the scoping fishing (siyud) (Esp + Rizal), fishing traps	Completely depleted (Riz.)
Timbärangan		*Rarung, bayung, tabig*. (Riz)	
Uriras	*Code: pat1-134*		Edible marrow (*ubud*)
OTHER PLANTS			
Aräkak	*Code: pat1-135*	The resin is used for torches (Riz.)	
Balugu	*Code: pat1-136*	The bark is beaten and the juice used as a shampoo (Riz + Esp.)	
Bäribiran	*Code: pat1-137*	A type of tree used for bringing the dead to the graveyard and for other minor uses (Riz.)	
Tagbak	*Code: pat1-138*	The steam is used as temporary flooring for over-	Completely depleted (Riz.)

		night shelters. Fruits are edible. It indicates that the soil is suitable for the planting of rice (Riz. + Esp.)	
Tirungan		Fruits eaten by birds (Riz.)	Completely depleted (Riz.)
Uriang	vine	Used for fencing	

LEGEND TABLE NO.1 : the table provides a list of local plant names divided according to their generic uses: **a)** plants for the construction of objects and for house making (37 species); **b)** plants for therapeutic and ritual uses (55 species); **c)** wild food plants (24 species); **d)** edible mushrooms (15 species); **e)** plants for fish poison (11 species); **f)** other toxic plants (3 species); **g)** bamboos (9 species); **h)** useful palms (19 species); **I)** other plants for various uses (6 species). The reported plants names and uses were originally recorder in southern Palawan between 1992 and 1996 by anthropologist Dario Novellino, when he was a visiting research affiliate of the Institute of Philippine Culture (Ateneo de Manila University). Dr. Novellino has kindly agreed to provide these unpublished information to ALDAW exclusively for the purpose of supporting indigenous Pälawan claims against oil palm expansion and to facilitate the completion of this report. Ms. Lenita Nangcod (former ALDAW CO) was in charge of determining whether and to what extent the list of plant species and uses provided by Dr. Novellino was also relevant to the Pälawan of sitio Maribong and Pasi (Bgy. Pulot, Municipality of Espanola) and to the Pälawan of sitio Bintatkaris, Salungsong and Kabongbongan (Bgy. Iraan, Municipality of Rizal) where her appraisal was carried out. The abbreviations Riz. and/or Esp. associated to the listed plants indicate that their uses have been documented in one municipality or in both (eg. Riz + Esp.). Ms. Lenita Nangcod is also responsible for setting a percentage (60%, 70% drop, etc.) with reference to the decline of particular species within oil palm impacted areas in Bgy. Iraan (Municipality of Rizal). These figures, obtained through questionnaires and open discussions with indigenous informants, must be regarded as a tentative estimates since they are not based on mathematical/statistical calculations. For the purpose of preventing identification of listed species, the scientific and families names have been substituted by a code number. Where no codes are associated to a vernacular plant name, it means that no corresponding scientific name was identified. This might have occurred when no bibliographic references were available for triangulation and crosschecking and/or when no comparison was possible between the photo of plants taken in the field and the relevant photos/sketches found in scientific/botanical publications

Annex no.3

TABLE NO. 2 MATERIAL OBJECTS AND RELATED PLANT SPECIES AMONGST THE PÄLAWAN OF RIZAL MUNICIPALITY				
ARTIFACTS/OBJECTS	**PLANTS' LOCAL NAMES**	**SCIENTIFIC NAMES**	**FAMILY NAMES**	**OTHER INFORMATION AND NOTES**
MUSICAL INSTRUMENTS				
Gimbal (drum)	*Banga*	*Code: pat2-1*	*Code: pat2-1a*	The *ubud* (*palm cabbage*) is not edible
	Dädkutan+	*Code: pat2-2*	*Code: pat2-2a*	
	Kajakaja+			The local plant name *nigi* is also used by Tagbanua indigenous communities of Central Palawan and is associated with *Xylocarpus granatum*. See Madulid 2001
	Mägluja+			
	Nigi	*Code: pat2-3*	*Code: pat2-3a*	
Babasal (biters for the drum)	*Ulangu*			Generally all hardwood trees are suited for this purpose
	Kajakaja+			
	Dädkutan+			
Suling and ***Babäräk*** (flutes)	*Sumbiling*	*Code: pat2-4*	*Code: pat2-4a*	
	Binsag	*Code: pat2-5*	ibid	
	Bungbung	*Code: pat2-6*	ibid	
	Näpnap	*Code: pat2-7*	ibid	
Aruding (Jew's harp)	*Bätbat*	*Code: pat2-8*	*Code: pat2-8a*	
Pagang (chordophone having between 4 to 12 strings)	*Käwuajan*	*Code: pat2-9*	*Code: pat2-9a*	This large bamboo is also used as a container for the water.
Äiagong (two-strings chordophone)	*Käwuajan**			Most popular in the Municipalities of Brooke's Point and Bataraza
Kudläng, kujapi o ***päkat***	*Apad apad*	*Code: pat2-10*	*Code: pat2-10a*	Traditionally before the acquisition of nylon, the strings of the lutes were obtained from the roots of *bätbat (Arenga undulatifolia)*
	Ängkukubi	*Code: pat2-11* *Code: pat2-12*	*Code: pat2-11a* *Code: pat2-12a*	The bark and fruits of *ängkukubi* are also used as an ingredient for betel chewing.

	Bintangur *Kärampi* *Kulbi* *Sämbulawan* *Tägas*	*Code: pat2-13* *Code: pat2-14*	*Code: pat2-13a* *Code: pat2-14a*	
Gabang o ***kulintangan*** (xylophone) Body Wooden bars	*Kämlit* *änibung*	*Code: pat2-15* *Code: pat2-16*	*Code: pat2-15a* *Code: pat2-16a*	Mainly used by *Panimusan* (Palawan Muslims)
TOOLS FOR HUNTING, TRAPPING AND GATHERING				
Säpukan (blowpipe) ***Käraban*** (darts' container) ***Savitan*** (handle of the dart's container)	*Sumbiling** *Bungbung** *Ärisurang* *Buntalinaw* *Dipanga* *Tägas**	*Code: pat2-17* *Code: pat2-18*	*Code: pat2-17a* *Code: pat2-18a*	Pälawan blowpipes are made of two bamboo tubes of a small diameter enclosed in a larger diameter bamboo. The inner part of the tubes is smoothen up by using the leaves of *agupit*, having abrasive properties. The main decoration of the dart container's handle is a stylised wild pig *(biäk).* The fruits are edible.
Basläy (single-pointed dart) and ***Barawang*** **(**arrow-shaped darts) ***Lubat*** (dart's head) **Bujak, *Surajang,***	*Bungbung** *Bätbat** *Näpnap** *Sumbiling** *Bätbat** *Bätbat** *Busniq*	*Code: pat2-19* *Code: pat2-20*	*Code: pat2-19a* *ibid*	The darts having an approximate length of 30 centimetres are balanced by a cone-shaped head (*lubat*) made from the main veining (*luba*) of the leaves of *bätbat (Arenga undulatifolia), busniq (Arenga brevipes)* and *täpikan* (*Caryota mitis*),

Kälawit (three types of spears) Spear's handle	*Täpikan* *Bänga** *Buntalinaw**	*Code: pat2-21* *Code: pat2-22* *Code: pat2-23*	*Ibid* *Ibid* *Ibid* *Ibid*	
Tagi (a spear made entirely of wooden material) Handle Point	*Bugtung* *Kälapag* *Silad* *Tabuljan* *Bätbat** *Bungbung**			In Bisayan language a tree named *tambulyan* has been identified as *Leea sp*. (Leeaceae). See Madulid 2001
Bäqang (snare trap for squirrels, monkeys, monitor lizards, wild cats, etc) ***Binbin*** and ***kulimbuq*** (snare traps for birds) ***Pidlung*** (snare trap for birds)		*Code: pat2-24*	*Code: pat2-24a*	The fibres of the bark are used to make ropes

Pitik (snare trap for wild cats) Ropes used for the traps listed above	*Tägäp* *Pärangiq*	*Code: pat2-25*	*Code: pat2-25a*	The inner fibres of the pineapple twisted together make strong ropes
Bawäg (spear spring trap for wild pigs and porcupines) Pointed stick **Säklaw** (a decorated stick used to position the rope of ***bawäg***) Ropes of the spring trap ***Bäräbatan*** (woven container for the points of bawäg)	*Bäbanatuq* *Tägas** *Gähid* *Ärurug* Various species of rattan	*Code: pat2-26* *Code: pat2-27*	*Code: pat2-26a* *Code: pat2-27a* *ibid*	
Bilagung (a type of snare)	*Tägäp**			Fibres from the bark of this tree are used to make the rope for the snare. This is a single snare placed on the trails frequented by wild pigs.
Raway o Rabay (snare trap for wild chickens) ***Usuk usuk*** (Sticks to keep the snares in place) Snares	*Änibung** *Bänga** *Sika*	*Code: pat2-28*	*ibid*	
Tutuläng (a long sequence of well-tied rattan strings and poles.) ***Nawj*** (strings) poles	*Sika** *Mäläqäg* *Timbärangan*	*Code: pat2-29* *Code: pat2-30*	Ibid Ibid	It is used to climb tall trees during the collection of wild-honey and nestlings. The gatherer will throw a stone attached to a rattan string so that it will pass over a tree branch and fall again on the ground. Then more strings will be tied to it to create a sort of aerial bridge that will allow the gatherer to reach the tree's canopy.

TOOLS FOR FISHING AND MATERIAL FOR BOAT MAKING				
Sjud (scoop-net) **Handle** **Woven net**	 *Tikäd manok* *Tägäp** *Tabas*	*Code: pat2-31* *Code: pat2-32*	Ibid	This type of rattan is said to be very resistant to water and thus it is a chosen material for the making of these objects that are subject to constant humidity and direct contact with water.
Tiwägan (fishing rode) ***Täli*** *(fishing line)*	*Pärätungän* *Sumbiling** *Päräng**iq**	*Code: pat2-33*	*Code: pat2-33a*	The fruits and marrow of this plant are edible. Leaves can be used as thatch and the steams for house walls. The roots provide material for the construction of snare-traps for wild chickens.
Asag (conical fishing trap with one entrance only) ***Bubuq*** (conical fishing trap with two entrances)	*Tikäd it manuk**			
Bungsud (fish fence) Main material Tying material	 *Bungbung** *Timbärangan** *Näpnap** *Kandis-kandis (vine)* *Lämiring (vine)*			The natural flow of small streams and shallow rivers is diverted with stones and fish are forced to enter the fence.
Diving snorkels	*Pägatpat*	*Code: pat2-34*	*Code: pat2-34a*	In several Philippine languages the local plant name *pagatpat* is associated to *Sonneratia caseolaris* (L.) Eng. Sonneratiaceae, See Madulid 2001.
Lambuq (small boat), canoes and their parts	*Ängri* *Aljäw* *Apad-apad* *Bajug*	*Code: pat2-35* *Code: pat2-36* *Code: pat2-37* *Code: pat2-38* *Code: pat2-39* *Code: pat2-40*	*Code: pat2-35a* *Code: pat2-36a* *Code: pat2-37a* *Code: pat2-38a* *Code: pat2-39a* *Code: pat2-40a*	This bamboo is used for the outriggers *(tadik)* of the boats. Amongst the Pälawan the word *bajug* is associated to both a bamboo and to a tree species.

	Bitangur			The fruits attract wild pigs in specific locations where the hunters will try to catch them.
	Bubug	*Code: pat2-41*	*Code: pat2-41a*	In Tagbanua language the term *Dungän is associated to the species Ehretia philippinensis* (?) A.DC. Boraginaceae. See Madulid 2001. Obviously this herbaceous plant cannot be the same species that Pälawan use for boat building
	Däw	*Code: pat2-42*	*Code: pat2-42a*	The term *indang* recurs frequently in various Philippine languages and is associated with species belonging to the following families: Euphorbiaceae, Lauraceae, Moraceae, Verbenaceae. See Madulid 2001.
	Dungän	*Code: pat2-43*	*Code: pat2-43a*	
		Code: pat2-44	*Code: pat2-44a*	
	Indang	*Code: pat2-45*	*Code: pat2-45a*	
	Länipgaq			
	Natuq			
	*Sämbuläwan**			
	Sjar			
	Tabigiq			

	Tämbilakan			
Bugsaj (paddles for boats)	*Ängkukubi** *Mälabakir*			
TOOLS FOR THE GATHERING OF WILD HONEY				
Biaw or ***käpal*** (temporary containers used for the collection of wild honey)	*Änibung** *Lindägung* *Mämaqan*	*Code: pat2-46* *Code: pat2-47*	*Code: pat2-46a* *Code: pat2-47a*	The old dry fronds are used. The fruits of this palm also provide an important ingredient for betel chewing which is a common practice among the Pälawan. Leaves of *Piper betle* L. or of different Piperaceae are chewed with tobacco leafs, nuts of A*reca catechu*, and shell-lime. The mixture has tonic properties. Aside from *Areca catechu* L:, the nut of the wild *Areca vidaliana* Becc. can be used as a second class ingredient in betel chewing.
Bunuqut (torch of dried leaves) Tying material for keeping the leaves together.	*Bätbät** *Kälapi** *Silad** *Mäingit* *Säjapuq*	*Code: pat2-48*	*Code: pat2-48a*	This is used to send away the bees from the honeycomb and/or nest. Dried leaves of different plant species can be used to make the torch.
BASKETRY				
Main fibres for weaving the body of rigid baskets (such as ***tinkäp, bäka-bäka, täbig, tibung,*** *etc.)* and flat-winnowed trays (***niguq***)	*Ämagas* *Ärurug** *Buldung* *Bätung* *Binsag* *Bungbung** *Näpnap** *Sumbiling** *Timbärangan**	*Code: pat2-49* *Code: pat2-50* *Code: pat2-51*	*Code: pat2-49a* *Code: pat2-50a* *Code: pat2-51a*	

Base of baskets (***lämpi***)	*Kälapi* *Mäläkawit* *Nunuk (root)* *Paläw* *Sulsul-bäsing*	*Code: pat2-52* Vine ? *Code: pat2-53* *Code: pat2-54* *Vine*	*Code: pat2-52a* *Code: pat2-53a* *Code: pat2-54a*	Only the inner part of the rattan cane is used for this purpose The root of this *Ficus* species is used.
Material used for tying together the different parts of a basket	*Ärurug** *Mäläqäg** *Sika** *Timbärangan**			
Material used to make the 'cross' at the centre of the baskte's base	*Bälinawnaw* *Säpuk-Bungäw*	*Code: pat2-55* *Code: pat2-56*	*Code: pat2-55a* *Code: pat2-56a*	Most probably this species corresponds to *Lepisanthes fruticosa* (Roxb.) Leenh. Although in Tagbanua language the plant named *balinawnaw* has been identified as *Lepisanthes rubiginosa* (Roxb.) Leenh, see Madulid 2001. Also used as a material for the construction of snare traps
Material for making 'clips' (*gigipit*) to keep the main fibres tied to the circular frame during construction of *nigu* (flat winnowed trays).	*Pasungan*	*Code: pat2-57*	*Code: pat2-57b*	The shoots of this climbing bamboo are edible
Bajung (soft baskets for rice)	*Buri* *Limbägas* *Pängdan*	*Code: pat2-58* *Code: pat2-59* *Code: pat2-60*	*Code: pat2-58a* *Code: pat2-59a* *Code: pat2-60a*	Widely in the Philippines, the leaves of this plant are utilized for thatching and for making hats, bags, ropes and mats. Fibres from the leafstalk make beautiful 'buntal' hats. A great quantity of starch can be obtained from the trunk. The sap, collected by making a series of slices on the exposed growing point, is made into e fermented dink, vinegar and muscovado sugar. Pandanus leaves are split to remove the thick rib and rough edge and are further folded or split to the correct width.

	*Sika** *Timbärangan**			
pupgaqan (squeezer for the grated cassava)	*Ämagas** *Timbärangan**			
Main material for the straps of baskets	*Bälinad* *Bäbaräkän* *Bunut bunut* *Tägäp**	*Code: pat2-61* *Code: pat2-62*	*Code: pat2-61a* *Code: pat2-63a*	The bark is used. The wood of this species may be used to fence graveyards. Bunut-bunut o Bonot-Bonot in Cebuano language is associated to three species of the genera Glochidion: *Glochidion camiguinense, Glochidion philippicum* and *G. rubrum.* See Madulid 2001. The bark is used.

MATS

Ampäran (a mat for drying rice) ***Dam-dam*** (a type of soft mat)	*Buri**			This palm can also be used for the extraction of starch (*natäk)*. However the extraction of palm flour from this species is regarded much harder than *natäk* extraction from *gumbia (Metroxylon sagu).*
Dakuq (mat for drying rice)	*Ärurug**			
Täpär (a type of mat)	*Ämagas** *Mägsäpuqun** *Mäinget+* *Näpnap** *Sumbiling**			
Timpungan (a type of mat)	*Sumbiling**			
Arisäw (mats for drying tobacco leaves)	*Bungbung** *Näpnap** *Sumbiling**			
Bidaj (fine mat made of rattan strips) Main material Rattan species used for tying the strips together ***Lämpi*** (Rattan knots located around the perimeter of the mat)	*Bugtung** *Mägpujan+* *Sika** *Ämagas** *Ärurug** *Mäläqäg** *Sika** *Timbärangan** *Bugtung** *Kälapi** *Mägpujan+*			

AGRICULTURAL TOOLS				
Tutugda (dibble stick)	*Änibung** *Bänga** *Pisa uriras*	*Code: pat2-64*	*Code: pat2-64a*	The fruits are also used as ingredients for betel chewing.
Tutungan (bamboo stick to propagate fire during the burning of the swiddens)	Various species of bamboo			
Gälit (harvesting knife)	*Sumbiling** *Bungtung**			
Wäsäy (traditionally forged axe). Material for the handle	*Ananiug* *Dikläj* *Mägapis* *Tabinälan*			
Läkut (bark container for the storage of rice seeds) Body Tying material	*Mägbärangan* *Mäglämbung* *Mälbuq* *Sika**	 *Code: pat2-66*	*Code: pat2-65a* *Code: pat2-66a*	 *Mälbuq* o *Malbo* in Tagbanua language is associated with *Elaeocarpus cumingii*
DOMESTIC AND HOUSE UTENSILS				
Suduq (medium-size spoon)	*Bintäwas* *Mälaga* *Mälbäk+*	*Code: pat2-67*	*Code: pat2-67a*	
Luluag (large cooking spoon)	*Ämämlug* *Ginuqu* *Mälaga** *Mälbäk+*	*Code: pat2-68*	*Code: pat2-68a*	
Säsäratan (strainer) Handle Tying material Fibres	 *Timbärangan** *Ämagas** *Näpnap**			
Isap o ***burungutan*** (wooden bowl)	*Njug*	*Code: pat2-69*	*Code: pat2-69a*	*Cocos nucifera* is commonly used in cooking. The endosperm is grated and squeezed, and the liquid obtained is boiled with vegetables and other ingredients. The endocarp of the green, unripe fruit contains a sweet refreshing liquid. The fresh endosperm is considered as a delicacy and often given to children as a snack.

Pänkaqan (coconut grater) A traditional type made entirely of hard wood. A more recent type of coconut grater made of a wooden seat to which it is inserted a metal rounded tip to scrape the endocarp from the coconut shell	*Äblas* *Änibung** *Bänga** *Tägas** *Ägtap* *Läuna*	*Code: pat2-70* *Code: pat2-71*	*Code: pat2-70a* *Code: pat2-71a*	*Ablas* in Tabganua language corresponds to *Vitex pubescent*, see Madulid 2001 *Agtap* in Tagbanua language correspond to *Neonauclea calycina* (Bartrl.) Merr. (Rubiaceae) see Madulid 2001
Liligidan (a rattan steam in its spiky leaf sheath used as a scraper for cassava)	*Bugtung** *Pärasan*	*Code: pat2-72*	*Code: pat2-72a*	
Lälängätan (wooden cutter used to chop tobacco leaves)	Various hard wood species can be used			
Bullais (simple item to remove the tobacco leaves from branches)	*Bungbung**			
Gäntangan (container for the rice)	*Several tree species are used*			*Gäntang* is a local unit of measurement which corresponds to about 2.5 kg of rice. A *Gäntangan*, entirely made of wood, contains approximately this amount of rice. Another type of *gäntangan* is entirely made of rattan fibres. The fibres of *ämagas (Calamus sp.)* are used for the basket's body, the fibres of *sika (Calamus caesius)* are used for the lateral sticks of the basket, the tying material are made of *ärurug (Calamus javensis)* and the base of the basket is made of *kälapi (Calamus merrillii).* Other rattan species can also be used in addition to those mentioned above.
Läsung (mortar)	*Apad apad** *Apugan* *Ägtäp** *Buntalinaw* *Dankaqan+* *Däw** *Kälasa* *Mägpunti*	*Code: pat2-73*	*Code: pat2-73a* *Code: pat2-74a*	Similar plant words such as *dankala* (*Calophyllum inophyllum*) and *dankalan (Sterculia ceramica)* are used by some ethnic groups of Mindoro, see Madulid 2001.

	*Natuq** *Sämbulawan** *Tämbilakan**	*Code: pat2-74*		
Laluq (pestle)	*Bangkal* *Buntalinaw** *Bunug* *Dankaqan+* *Läuna+* *Mägpaw* *Märaparäj* *Tulambak*	*Code: pat2-75* *Code: pat2-76* *Code: pat2-77* *Code: pat2-79*	*Code: pat2-75a* *Code: pat2-76a* *Code: pat2-77a* *Code: pat2-78a* *Code: pat2-79a*	In Tagbanua language the local name *Tulambak* is associated to *Memecylon terminaflorum*, see Madulid 2001. Most probably the Pälawan use the same vernacular name for the same species.
Läudan (water container)	*Batung o Rabuk*	*Code: pat2-80*	*Code: pat2-80a*	Cultivated in various municipalities. Also used for flooring
Läbungan (Malay forge) Chambers ***umbak-umbak*** (stick of the pistons) ***Kärmo*** *(circular and terminal portions of the pistons)*	*Änibung** *Bänga** *Käwuajan** *Mägluja+* *Manabaliq+* *Käwajan** *Manabaliq+* Various hard wood species are used			
Uqusät (pointed item used in the weaving of baskets, flat-winnowed trays, mats, etc.	*Bugtung**			
Särimakädan (torch holder)	*Dädkutan+* *Kämlit**			This is a sort of tripod with a concave portion on the top where the resin torch is inserted
Saläng (torch of resin				

wrapped in leaves) Species used for the torch's leaves Species from which exudes and resins are collected	*Kälapi** *Pärätungän** *Ängri** *Kälasa** *Lanäj* *Räkak* *Saläng* *Silad** *Udaw-udaw* *Upak-upak*	 *Code: pat2-81* *Code: pat2-82*	 *Code: pat2-81a* *Code: pat2-82a*	 The resin of *räkak* was traditionally used to make long torches for night fishing on the seashores and coral reefs. With one hand the person would hold the torch using the other hand to spear the fish.
ITEMS OF PERSONAL USE				
Äläp *(tobacco container worn on the waist)* ***Sukisuki*** (small tobacco container)	*Bungbung**			*Äläp is constituted by two bamboo tubes. One contains the components for making the fire: a stone and a piece of metal (santikan) as well as the dried material (lublub) used for triggering fire [made from täpikan (Caryota mitis Lour.)] while the other contains the tobacco and the leaves to make cigarettes.* Bee-wax *(kalulut)* is often placed on the top part of the *äläp* and red seeds of a species known as *pinpin* are stuck on it.
Dälaken *(container for the lime 'apug')*				This is entirely made out of sea shell
Nanga (container for tobacco and small amulets)	*Nanga*	*Code: pat2-83*	*Code: pat2-83a*	This object has the same name of the plant used to make it. The seeds of this palm are emptied and a wooden cover is made to close it.
Salapaq (tobacco and betel box)	*Buntälinaw** *Ginuqu** *Mälaga** *Tegas**			Usually the Palawan use metal *salapaq* made of silver, copper and other metal leagues. These precious heirlooms are part of the family's inheritance (*pusaka*), and were traditionally obtained through exchanges with the Muslims of the Sulu sultanate. Wooden *salapaq* are, in fact, a replica of the metal ones.
Sudaj (comb)	*Ginuqu** *Kälulingaw* *Kulimawa* *Mägdugiang* *Märäitum* *Märäparay+*	 *Code: pat2-84* *Code: pat2-85*	 *Code: pat2-84a* *Code: pat2-85a*	
Galang o täklang (Bracelet)	*Buntälinaw**			
Kukuät (small flat wooden stick to remove fleas from	*Bätbat** *Bungbung**			

hairs)	*Käwuajan** *Märuwaq** *Sumbiling**			
Paqis (small knife with curved blade) handle	*Bugtung** *Kämlit** *Mägäritgärit* *Unapung*			In Tausug language *unapong* corresponds to *Kleinhovia hospita* L. var. Sterculiaceae. See Madulid 2001
Tukäw (long-blade knife) ***Pulu*** (handle)	*Anilaw*	*Code: pat2-86*	*Code: pat2-86a*	The local plant name *Anilaw* recurs frequently in many Philippine languages and it is associated with different species of various plant families. However, a comparison between different Filipino languages shows that one of the most common species associated with it is *Colona serratifolia*. See Madulid 2001
	Apugan+			
	Asang-asang	*Code: pat2-87*	*Code: pat2-87a*	
	Bäkan	*Code: pat2-88*	*Code: pat2-88a*	
	Gängas	*Code: pat2-89*	*Code: pat2-89a*	In several Philippine languages the local name *bakan* refers to *Litsea perrottetii* (Bl.) F.-Vill. and, in Tabanua language, the same name is associated with *Litsea whitfordii* Merr.
	*Kämlit**			
	Tabuq	*Code: pat2-90*	*Code: pat2-90a*	
	Bunät-bunät	*Code: pat2-91*	*Code: pat2-91a*	
Änkap o ***sarong*** (sheath)	*Nangkaq*	*Code: pat2-92*	*Code: pat2-92a*	In Tagbanua language the plant name *bunot bunot* is associated with Commersonia bartramia. See Madulid 2001
	Nara	*Code: pat2-93*	*Code: pat2-93a*	
	Unapung			
	*Apad apad** *Bajug**			
	Dädkutan+ *Angkukubi** *Mäkärumpi* *Nara**			In Tausug language the plant name unapong is associated with Kleinhovia hospita L. var Hospita (Sterculiaceae) Occasionally the seeds of *pänsar Bixa orellana* (L.) Bixaceae were passed directly on the sheaths to give them a red colour.

Kasing	*Ginuqu**			
Rärung (type of back-pack) ***Kuluq*** (strap for the head) ***Kulibaba*** (straps for the shoulders) ***Sanig at talutud*** (back support)	*Bugtung** *Timbärangan** *Tägäp** *Bälinad** *Säjapuq**			
Kuluq **(**mono-use back-pack made of woven leaves.	Various palms			
STATUES OF RITUAL USE				
Täwtäw (anthropomorphic statues) and ***biek-biek*** (zoomorphic pig figures)	*Apugan+* *Dädkutan+* *Kulaj* *Ginuqu** *Mälaga** *Tegas**		Rutaceae	Anthropomorphic and zoomorphic figures are used as '*ungsäd*', a sort of ritual exchange. For instance the anthropomorphic figures will be offered in exchange for a patient affected by a certain disease. It is believed that the illness will move away from him/her and 'transfer' instead on the wooden figure. Figures of animal game such as wild pigs are exchanged for the real animal to the 'Master of wild pigs' (*Ampuq biek*) before the hunting starts.
MATERIAL FOR HOUSE CONSTRUCTION	*Äblas* *Aguhu* *Ämpäplut* *Anajam* *Ängkukubi** *Angri** *Änilaw** *Bäbanatuq* *Bakäw* *Banäbaq*	*Code: pat2-94* *Code: pat2-95* *Code: pat2-96* *Code:pat2-97* *Code: pat2-98* *Code: pat2-99*	*Code: pat2-94a* *Code: pat2-95a* Code: pat2-96a *Code:pat2-97a* *Code: pat2-98a* Rhizopheraceae *Code: pat2-99a*	Low-quality material.

	*Bangkal** *Bintangur** *Binuawäq* *Märäitum** *Märaupas* *Mämläg* *Pututan* *Räkak** *Tämbilakan** *Unapung*+	*Code: pat2-100*	*Code: pat2-100a* *Code: pat2-101a* *Code: pat2-102a*	The plant word *pututan* is found in many Philippine languages and is associated with different plant species. In Cebuano, Ibanag and Tagalog the corresponding scientific species is *Bruguiera gymnorrhiza* (L.) Rhizopheraceae and sometimes to *Bruguiera sexangula* (Tagalog only). However, the same word in Tagalog language can refer to *Bruguiera cylindrica*, *Aegiceras floridum* (Myrsinaceae) o *Timonius appenduculatus* Merr. (Rubiaceae). See Madulid 2001
Datag (Flooring)	*Anibung** *Banga** *Pisa uriras**			
Atep (Thatch)	*Bätbat** *Busnig**, *Batuq o Putäl* *Nipa*	*Code: pat2-103*	*Code: pat2-103a*	This palm is also a provider of starch *(nätäk).* The outer layer of the trunk can abe used as walling for the rice granary *(längkaw).* Such granaries are standing on four poles passing through wooden disks *(äriring)* made of different tree species such as *ginuqu* (*Koompassia excelsa*) which prevent rats from climbing up.
Other Material objects	*Bäribiran*	*Code: pat2-104a*	*Code: pat2-104a*	.

LEGEND

The vernacular names of 150 useful plant species, belonging to at least 35 plant families, is reported. Out of these, 66 local species have been scientifically identified, while of an additional 31 plant names only the genera is known. Overall, the number of unidentified plants amounts to 54 species and only the family name of 11 of these is known. Most of these plants names and uses have been recorded between 1992 and 1996 amongst the Pälawan of Barangay Panalingaan, Ransang and Latud, Municipality of Rizal.

The asterisk symbol (*), following the vernacular name of a plant, indicates that the corresponding scientific name for that species has already been reported elsewhere in the table. For the purpose of preventing easy identification of the listed species, the scientific and families names have been substituted by a code number. When the code number is associated only to plants' families it means that the latin name of the corresponding species is not known. Where no codes ara associated to a vernacular plant name, it means that no scientific identification was possible. Generally, this is because no sufficient bibliographic references were available for triangulation and crosschecking and/or because no comparison was possible between the photo taken in the field and relevant photos/sketches of corresponding species found in botanical volumes. The symbol (+) following the vernacular name refers to unidentified plant species which have been listed in the table more than once, since these are associated with the construction of different objects/artefacts and have multiple uses. The word Ibid signifies that a particular species belongs to the same plants' family of the preceeding species mentioned above, in the table.

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ACRONYMS

A&D - Alienable and Disposable Land
AGPI - Agumil Philippines Inc.
ALDAW – Ancestral Land/Domain Watch
CADT - Certificate of Ancestral Domain Title
CALG – Coalition against Land Grabbing
CALT - Certificate of Ancestral Land Title
CAVDEAL - Cavite Ideal International Construction and Development Corporation
CBFMA - Community Based Forest Management Agreement
CPO - Crude Palm Oil
DA - Department of Agriculture
DAR - Department of Agrarian Reform
DENR - Department of Environment and Natural Resources
DOLE - Department of Labor and Employment
ECAN - Environmental Critical Area Network
ECC - Environmental Compliance Certificate
EIA - Environmental Impact Assessment
ELAC - Environmental Legal Assistance Centre
FFB - Fresh Fruit Bunches
FPIC - Free Prior Informed Consent
ICCAs – Indigenous Communities Conserved Areas and Territories
ICPO - International Criminal Police Organization (*INTERPOL)*
IPRA - Indigenous Peoples Rights Act
LBP - Land Bank of the Philippines
LGU - Local Government Unit
NATRIPAL - United Tribes of Palawan
NCIP - National Commission on Indigenous Peoples
NGOs - Non-Government Organizations
NIPAS – National Integrated Protected Areas System
NTFPs – Non-Timber Forest Products
MMT - Multi-Partite Monitoring Team
PCA - Philippine Coconut Authority
PCSD - Palawan Council for Sustainable Development
PACBARMA - Protected Area Community-Based Resources Management Agreement
PHP – Philippine Peso

PPOIDC - Palawan Palm Oil Industry Development Council
PPVOMI - Palawan Palm & Vegetable Oil Mills Inc.
PODO - Palm Oil Development Office
POPDC - Philippine Palm Oil Development Council
PPOIC - Philippine Palm Oil Industry Council
SEP - Strategic Environmental Plan

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USD1 = 40.74PHP (on 7 March 2013)

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