

Introduction

This report on the potential NTFP trade in Cambodia is based on 3 years of fieldwork, in the context of a project on *“improving the sustainable management and utilization of non-timber forest products (NTFPs) in Cambodia”*. This project, funded by the International Tropical Timber Organization (ITTO), focused on poverty alleviation in 16 forest dependant communities, in 4 provinces: Kampong Chhnang, Kampong Thom, Mondulkiri and Ratanakiri.

The project aimed to improve the benefits for local communities from the sustainable collection and sale of NTFPs with low to zero negative environmental impact. The o project’s main targets were the national and provincial forest agencies, the local communities belonging to four ethnic groups (Khmer, Charay, Phnorng, and Cham), and all actors playing a role at every step of the market chain (depot keepers, businessmen, middlemen etc).

The project helped to develop better management of NTFP resources, adapted to each situation. Our experience will hopefully contribute to other projects working on the management of NTFPs in areas where people are strongly dependent on natural forest resources.

During this project, we had two main objectives:

1. Local community empowerment: to help reorganize local management of NTFPs with regards to social and legal aspects. Village associations needed to be strengthened by improving the local role in the market channels/chain. We helped to propose management plans to be presented to the local and national authorities, and to obtain authorization for the collection and sale of NTFPs.
2. Ameliorate NTFP management and trade: to improve the management of the resource, including plantations and processing, when necessary.

Methods

During the initial stages of the project, we identified the most important NTFPs according to the local communities. These NTFPs were chosen because they contribute to the local

livelihoods, for food, handicrafts, construction materials and medicine. To collect these data, we used focus group discussions, with groups of men and groups of women. Once the list was prepared, sometimes including a hundred names, we collected and identified samples of all the NTFPs listed, and checked their availability in each village's territory.

A second step was to narrow the number of species identified down to one or two per village, for the project to focus on.

The selection was made during village meetings, working in mixed groups of men and women, when we also gathered more information on each NTFP. This information, based on local knowledge, included the availability, accessibility, evolution of, uses, and potential for market and conservation of each identified species.

The final selection followed these steps:

1. On a flipchart, we wrote all the plant species named by the villagers with the herbarium number and the local name.
2. During a focus group discussion, we asked the villagers to choose 10 species that could be traded. One person led the group through the list. If they provided more than 10 plants, we asked them to reduce the number to 10, if they provide less than 10 plants; we asked them to add more to make it up to 10. We then asked the villagers to select 3 or 4 species from the 10.
3. For each of the 10 plants we asked the following questions, as a basis for discussion:
 - a. Are they still common, seasonal or rare around the village?
 - b. How far do you need to go to find these plants?
 - c. Can this be found in abundance in or outside the Community Forest?
 - d. What is the season for this plant?
 - e. What is the local household use for this plant? If marketable, what would it be used for?
 - f. When was the last time you collected this plant?
 - g. When was the last time you traded this plant?
 - h. Did you trade this plant raw or processed?
 - i. How much did you earn?
 - j. To whom did you sell this plant? How did you get to the buyer?

- k. Have you ever tried to plant this species? If yes, what precisely happened? Does it grow from seed or from vegetative parts?
- l. If you have never sold this plant, why did you add it to the list?

This final list was discussed among the project staff to make the last selection, with the idea of working on one product per village. The action part of the project focused on the identified species. Based on a report provided by a group of socio-economists working for the project, we used information on the market trends and chains to improve the trade of the selected NTFPs. Where it was required, we re-planted the NTFP, in a nursery first, then in the community forests, or near the settlements, on private lands. Training was provided on ways to improve the processing of the raw material (e.g. different types of baskets from rattan).

In this book, we focus on the main NTFPs identified during the project. We kept the final list (10 species per village) developed with the villagers. As some species overlap between several villages, we ended with a list of 17 NTFPs.

We describe each of the species characteristics, and provide information on their ecology, uses, economic values, and potential for trade.

This book is not exhaustive and only provides a contribution to the high diversity of plants used in Cambodia. We hope it will be useful to the practitioners, government institutions and NGOs working on this topic in Cambodia.

Khmer Name : Chheuteal Teuk

Latin Name : *Dipterocarpus alatus* Roxb. ex G Don

Family : Dipterocarpaceae

Description : Big tree, 25-40 m high, trunk of 20 m long, diameter 1.5 m with smooth tree bark. Oval leaf: 15-25cm long, 6-15cm wide. Inflorescence axis, covered by yellowish-grey hair; Fruit is oval with 2 big wings, 15-20m long and 3 small wings, which are undeveloped.

Ecology : This species grows in semi-evergreen and deciduous forest, on mud and silt soil especially along the streams. Flowering is from January to February and fruiting in April.

Uses : - Good for construction, board and furniture.
- This species provide resin, an average 30-35 liter/annual/tree.

Market : resin collection is seasonal. Good resin is 2000-2500 riel / kg. Local demand is small and it is mostly exported to Vietnam and Thailand.



Khmer Name : Chheuteal Breus (Chheuteal Bongkuoy)

Latin Name : *Dipterocarpus costatus* Gaertn. f.

Family : Dipterocarpaceae

Description : Big tree; 25-40 m high, trunk about 20 m long diameter 1.5 m. Bark thick, outer bark brown. Leaf oblong-ovate, base round or cordate 8-14cm long, 6-15cm wide. Inflorescence axillary or terminal, pale orange. Fruit nearly globose 1cm diameter with 2 big wings size 6-10cm long, 3 small wings size 1.5cm long without hair.

Ecology : This species grows in lowland evergreen or semi-evergreen forest. Flowering in February and Fruiting in April.

Uses : -Timber used in construction. This species is rich of liquid resin and valuable

Market : Cost and quality of liquid resin changing according to location or provinces, around 2000-2500 riel/ kg. Local demand is lesser than export, to Vietnam and Thailand.



Khmer Name : **Chor Chong**

Latin Name : *Shorea guiso* (B.) Bl.

Family : **Dipterocarpaceae**

Description : Big tree 20-30 m in height, straight trunk with diameter 1m, with thin buttresses. Outer bark is grey-brown and cracked or flaking. Leaf oblong-lanceolate (8 to14) cm x (4 to 8) cm. Inflorescence is a raceme, tomentose, 6-7 cm long, divided into 7-8 short branches. Fruit is ovate, 1cm diameter with 2 big wings size 6 to10cm long and 1.5 to 2cm width and 3 small wing sizes 1.5cm long without hair.

Ecology : This species grows in lowland evergreen or semi-evergreen forest. Flowering is in February and Fruiting in April.

Uses : - Timber used in construction. The species provide hard resin, which coagulate on the trunk and the main branch then drop down.

Market : The value of hard resin is similar to liquid resin, the good quality is 2000-2500 riel/ kg. Most of them exported to Vietnam and Thailand.



Khmer Name : Rang Phnom

Latin Name : *Shorea siamensis* Miq. var. *siamensis*

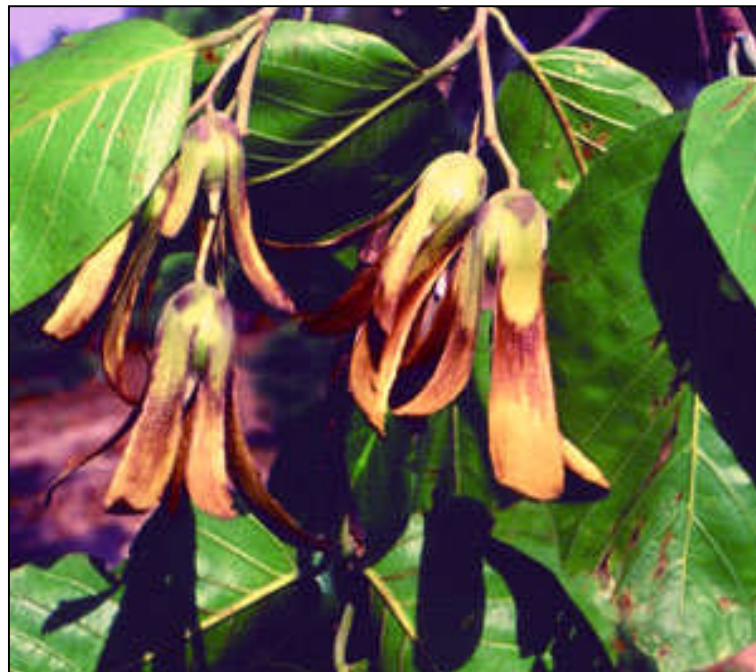
Family : Dipterocarpaceae

Description : Deciduous tree, 10-20m height, trunk unwell straight 20-40cm diameter. Bark thick, outer bark grey-brown, deeply cracked. Inner bark red-brown. Leaf oblong-lanceolate, apex obtuse, base cordate; 12-18cm long and 10-12cm wide. Inflorescence axillary green; petal purple. Fruit ovate with 3 big wings 7-12cm long and 2 small wings 4-6cm long.

Ecology : It is common in lowland deciduous forest, dominated dipterocarps or in the dry evergreen forests, on hill, not higher than 600m. Flowering is in March-April and fruiting in April-June.

Uses : Timber used in construction. The species provide hard resin, which coagulates from the trunk and the main branch, as *Shorea guiso*, but little than.

Market : The hard resin collected from this species is 2000-2500riel/k.g. Most of it is exported to Vietnam and Thailand.



Khmer Name : Chker Sreng

Latin Name : *Cananga latifolia* (Hk. f. & Th.) Fin. & Gagnep.

Family : Annonaceae

Description : Medium size tree; 8-15 m height; 15-30 cm diameter. Outer bark colors pale grey; cracked. Simple leaf, alternate, hairy on both sides. Leaf oblong-lanceolate, apex obtuse, base cordate, 15-25cm long, 10-20cm. wide. Inflorescence axillary, yellowish-green. Fruit is in bunch like Uvaria Fruits.

Ecology : This species grows in semi-evergreen forest and deciduous forest throughout Cambodia.

Uses : The wood is not very durable, and used for temporary structures. Khmer traditional practitioner used for healing medicine.

Market : No report on export of this species. The local people collected for household using and for sell to the local traditional practitioner. The dry stem and root costs 1000-1500riel/kg.



Khmer Name : Kropul Bay

Latin Name : *Litsea glutinosa* (Lour.) C.B. Rob. var. *glutinosa*.

Family : Lauraceae

Description : Medium tree; 8-15 m high; 15-30 cm diameter. Bark thick, cracked, outer bark light brown; Leaf is simple alternate, oblong-ovate 10-15m long and 8-15cm wide; Inflorescence is axillary yellowish-green; Infructescence axes green, fruit outside green turning dark red, ripening black; cut part aromatic.

Ecology : This species is found in semi-evergreen forests or deciduous forests throughout Cambodia.

Uses : Bark popularly use in incense stick. Traditional practitioner used leaves bark and root for medicine (diarrhea, intestine irritation, zonal). yellowish-green.

Market : Leaf and root are used only for household; bark is sold to middlemen in village for 1000 riel/ kg. Before, the bark was trade to Vietnam but not anymore.



Khmer Name : Khmeuss

Latin Name : *Memecylon scutellatum* (Lour.) Naud.

Family : Melastomataceae

Description : Evergreen treelet 5-8 m tall; 5-15cm diameter; Bark thick, outer bark grey; deeply and very roughly cracked. Leaf simple, opposite, leaf blade 4-7 cm long, 2-4cm wide. Inflorescence axillaire; yellow-green; petal bright blue-purple. Fruit globose; green turning blue-purple.

Ecology : This species is found in deciduous forest around Tonle Sap Lake.

Uses : Stems are used as firewood. Khmer traditional practitioners use the leaves to treat the conjunctivitis.

Market : Most of Svay kroam villagers collect the stems for fire and only for household consumption. Some villagers sells it at Market Salalekbram for 800 riel/bunch.



Khmer Name : Phkar Orkide Prey

Latin Name : *Vandopsis gigantea* (Lindi.) Pfitz

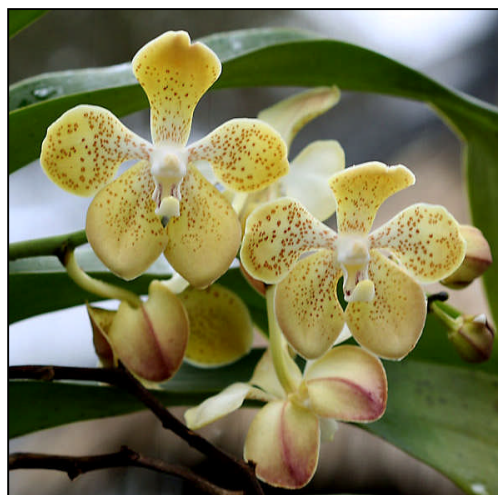
Family : Orchidaceae

Description : Epiphytic plant, Stem very stout; 15-30 cm long; Leaf thick; very fleshy 30-50 cm long; 3-5cm wide. Inflorescence Pendulous, racemose, 25-35cm long; peduncle 4-6 cm long, rachis with 8-16 flowers. Sepals and petals, yellow with red-brown blotches.

Ecology : it grows in deciduous forest, semi-evergreen forest and evergreen forest in some province of Cambodia.

Uses : to decorate house both in cities and rural areas.

Market : This wild orchid is collected for domestic market only not for export. In Mondulkiri province, wild orchid is sold 5000 riel/kg.



Khmer Name : Phdao Seung

Latin Name : *Calamus tetradactylus* Hance

Family : Palmae

Description : Climbing rattan; small and hard cane; 6-10 m long and 0.35-0.75 cm diameter; internodes 10-15 cm long.

Ecology : This species grows in lowland area throughout Cambodia; in mixed deciduous degraded forest and semi-evergreen forest, at an altitude of 300-1000m height.

Uses : There are very few of documents on the use of this species. Some local communities reported that the cane is used for weaving basket and ropes.

Market : There no record on trade of this species in Cambodia. Only collected for household consumption. But the neighbor countries; Lao PDR and Vietnam use this species extensively for crafts.



Khmer Name : Phdao Som

Latin Name : *Daemonorops jenkinsiana* (Griff.) Mart.

Family : Palmae

Description : Clustering; climbing rattan up to 30m long, diameter 1-3 cm; internodes 10-25 cm long ; durable and flexible. Climbing organ; cirrus 50-80 cm long.

Ecology : can be found in many areas in Cambodia, especially in moist areas of semi-evergreen forest, evergreen forest and riparian forest, at an altitude of 500 m.

Uses : Its shoot is edible and eaten by local communities as vegetable. Larvae that live in the rattan shoot are also collected for food and sale. Its cane is flexible and durable, for bending as a decoration for furniture production.

Market : It is heavily collected for domestic and international trade but its harvesting volume is not known. A cane of about 4-5m long is sold 300-500 riel and the price is up to 1200 riel after the first stage of processing.



Khmer Name : Phdao Chhnour

Latin Name : *Myrialepis paradoxa* (Kurz) J. Dransf.

Family : Palmae

Description : Clustering; climbing rattan up to 30 m long, 1.2-3 cm diameter; internodes 12-27 cm long; core soft; poorly flexible. Climbing organ; cirrus 50-150 cm long.

Ecology : This species can be found throughout Cambodia, its habitat range is broad from degraded forests to semi-evergreen forests at an altitude of 300 m.

Uses : the cane has a soft core and a hard bark, it cannot be bent. It is used as a frame of lower quality furniture (local use).

Market : In the southwestern of Cambodia, it is collected for sale to local furniture handicraft. But it is not suitable for export. For a cane of about 4-5 m the price is 600-1000 riel, and rarely 300 riel or up to 1300 riel.



Khmer Name : Phdao Doumbong

Latin Name : *Calamus rudentum* Lour.

Family : Palmae

Description : Clustering; climbing rattan up to 30-45 m long, 1.8-3.5 m diameter; internodes 12-20 cm long and durable. Climbing organ; flagellum 4-8 cm long; moderately dense in rows at the base of flagellum.

Ecology : It is widespread in the east, southeast and southwest of Cambodia; it grows in semi-evergreen forest, riparian forest surrounded by deciduous dipterocarp forest, at an altitude of 50-300m.

Uses : the cane is used for making frame and support for furniture, as well as bookshelves, beds, chair etc. It has a large diameter and is of good quality for furniture production. The demand is high and there is over-harvesting.

Market : In Phnom Penh, the cane 4-5m is 4000 riel and village level 500-3300 riel. It is the most expensive species of all rattans. Export to Vietnam and Hong Kong have been reported but volumes are unknown.



Khmer Name : Phdao Chhvaing (Loving) Krek

Latin Name : *Calamus viminalis* Willd.

Family : Palmae

Description : Clustering; climbing rattan; up to 35 m long; 0.5-1.7cm diameter. internodes 10-30cm long. Climbing organ; flagellum 3m long. Leaf, 150-250 cm long. Small leaf shape like long lance as cluster 2-7 of leaf arrange in many difference line. The cluster of flower is in bunch; 2-4m long and consist of 2-7 clusters. Fruit is round; 1cm and change to colors yellow when ripe.

Ecology : Scattered in many areas in Cambodia, especially in dry places. It grows in semi-evergreen forest mix- deciduous forest and on the termite mound in dipterocap forest, at an altitude of 50-500m. Normally, it is resistant to forest fire.

Uses : The cane is good furniture, Some are used to make basket book shelf, bed, chair and sofa.

Market : a stem of 4-5m long is sold 220-350riel. They collect a lot of this type to supply domestic and international demand, therefore now it is over collected.



Khmer Name : Phdao Kontong

Latin Name : *Calamus palustris* Griff..

Family : Palmae

Description : Clustering; climbing rattan; up to 30 m long; 0.3-2 cm diameter. internodes of 10-25 cm long. Climbing organ; cirrus 40-50 cm long. Leaf 60-110cm long excluding cirrus; leaflet in groups of 2-5, leaflet of the middle rachis 17-40 x 2.5-7.5 cm; base cuneate to obtuse; margin sparsely bristly; apex acuminate. Inflorescence spiny, female 2-branched; male 3-branched; primary bract tubular. Fruit oval; green turning yellow when ripe; 0.7-1.2 x 0.7-1 cm; beak 0.2 cm long, perianth widely divided at the base.

Ecology : The species is found throughout Cambodia, in semi-evergreen forest, evergreen forest and sometimes riparian forest, at an altitude that range from sea level to 500 m.

Uses : Its cane is classified as a small rattan of good quality for handicraft and furniture. It is used to make bookshelves, and cored for waving chair and salon.

Market : The cane is collected for either domestic use or international trade. A cane 4-5m long is sold 200-350riel.



Khmer Name : **Ro Peak**

Latin Name : *Calamus salicifolius* Becc.

Family : **Palmae**

Description : Clustering; weakly-climbing rattan; cane 2-6 m long, 0.25-0.5cm diameter; internodes 5-23 cm long, durable and flexible, no climbing organ. Leaf 15-30 cm; leaflets in groups of 2-3; lanceolate or liner; base cuneate; smaller at apex; margin serrate with sparse bristle; sparsely bristly on the middle vein. Inflorescence stiffly erects 25-30cm long including appendix. Fruit oval 1cm diameter; pale yellow when ripe.

Ecology : This species is widespread on the central plain, especially around Tonle Sap Lake and south-eastern part of Cambodia, in rice field, natural grasslands and severely degraded bush land of lowland areas, at an altitude below 100m.

Uses : It is used for handicrafts such as basket, matting and rope that provide income to the local communities. The local people collect its shoot for food.

Market : A cane of 4-5m long costs 100-150 riel/cane. it is collected for domestic handicrafts only. No record on export of this species.



Khmer Name : Russey Pingpong

Latin Name : *Thyrsostachys siamensis* (Kurz ex Munro) Gamb.

Family : Gramineae, Bambusoideae

Description : Densely tufted bamboo, Culm dark green, erect or with arching tips, 8-14m tall, 4-8 cm diameter; internodes 20-40cm long. Leaf blade oblique-oblong, 7-15 cm long, 2-4 cm wide, green above, light green underneath.

Ecology : This species is originated from Burma and Thailand, widely introduced to many tropical countries, especially in South-East Asia. It resists to long droughts, grows in deciduous forest or semi-evergreen forest with rainfall below 1000mm.

Uses : Culm used it for construction in communities, fishing material, household equipments; many kind of basket. It is an important bamboo for local cash income.

Market : The culm of 8-10 m long is sold 8000-10000riel, and it is for domestic only not for export.



Khmer Name : Russey Prey

Latin Name : *Bambusa bambos* (L.) Voss ex Vilm.

Family : Gramineae, Bambusoideae

Description : Densely tufted bamboo, Culm erect, dark green, 15-25 m tall; 10-15 cm diameter; internodes usually 20-40 cm long, branches, and many thorns. Leaf blade oblique-oblong, 10-30 cm long, 3-5 cm wide, green above, light green underneath.

Ecology : This species is distributed in deciduous forest, semi-evergreen forest in Cambodia and in some South-East Asia countries.

Uses : This species is used for: fishing material, ladder for climbing the sugar palm tree. It is also used as a tool and as many kind of baskets as well. It is considered as the main source of local income.

Market : It is sold 8000-10000riel/Culm. in the trade is only domestic.



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