

**Checklist and approximate quantity of Non-Wood Forest Produce (NWFP)
collected from Peppara Wildlife Sanctuary**

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2002

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Keywords: biodiversity, checklists, forests, non wood forest produce, non timber forest products, illegal trade, wildlife sanctuaries, India.

Abstract

The Peppara Wildlife sanctuary is a traditional resource base for substantial non-wood forest produce (NWFP). Checklist of NWFP from the sanctuary is prepared on the basis of data collected over a period of one given month; it is subject to the season, availability, market demands and to the known trade outlets. Major items such as fuel wood, fodder and some medicinal plants have been quantified. The checklist includes products used at subsistence, local use and commercial levels.

Acknowledgements

From the traditional perspective on non-wood forest produce as just a source of commercial exploitation to the present one of conservation of the wealth of biodiversity, the managers of our forests have come a long way in the sustainable utilization of natural resources. I would like to thank Mr. T. Pradeep Kumar, Wildlife Warden, Thiruvananthapuram and his colleagues in the Dept. of Forests, Kerala for giving me this opportunity to study the trade on NWFP in this area and make a humble contribution to the conservation and management efforts now in way throughout the state.

The services of Sri. Suneesh Kumar, S.K and Sri. P T Sudarsanan, in collecting the data and assistance in the fieldwork is gratefully acknowledged. I am also indebted to Sri. Bhagavan Kani and several other tribal elders and youngsters for the insight they provided into the life of their community.

I am grateful to Sri. Balachandran.V, Nature Trust, Trivandrum, Dr.G. Christopher, Programme Officer, CDS, Trivandrum and Mr. Utkarsh Ghate, FRLHT, Bangalore for their wholehearted support and valuable advice in the various stages of preparation of this report. I am most thankful to Dr. Mohanan. N, Scientist, TBGRI, Palode, for correcting the checklist.

CHAPTER 1

Introduction

1.1 NWFP

Forest resources are generally categorised into a) wood and b) non-wood products. Non-Wood Forest Produce (NWFP) includes all goods of biological origin other than wood, in all its forms, as well as services derived from forests or any land under similar use. They may be of plant or animal origin (Chandrasekharan, 1996). India's forests contain over 3000 plant species, (Negi, 1992) which yield a wide variety of non-wood products ranging from fuel wood to fodder, food, medicinal drugs, fibres, flosses, bamboos, canes, essential oils, edible nuts, fruits, honey, latex, dyes and resins.

As a supplementary source of income, NWFP is important to the tribal people of Kerala. However, traders dominate in determining the terms and conditions of the NWFP markets (Shanker & Muraleedharan, 1996).

The demand for NWFP has increased sharply in the last couple of decades. Together with other adverse impacts on forests, this trend could lead to over-exploitation of forests causing depletion of precious plant resources. It has to be ensured that sustainable harvest levels are maintained. Appropriate strategies should be developed for the preservation and regeneration of the natural resource base as well as to meet the demand on the forest produce. They should address the issues of a) sustainability of the resource, b) needs of the NWFP collectors and c) regulation of the trade (Harrison, ed. 1998). Inventorying and quantification of the NWFP is one of the important primary moves in this direction.

As part of the management plan for the Peppara and Neyyar Wildlife sanctuaries, a checklist and approximate quantification of the NWFP collected from these areas during the month of October 2001 is presented in this report.

1.2. Peppara Wildlife Sanctuary

Peppara Wildlife Sanctuary is situated on the western slopes of the Western Ghats in its southern part in the Nedumangad Taluk in Thiruvananthapuram district. It has an area of 76 km² and lies between 8°34'30" to 8°41'25" N and 77°6'50" to 77°14'5" E. On the northeast side lies the Mundanturai Tiger Reserve of Tamil Nadu, Palode Reserve Forest on the north and Neyyar Wildlife Sanctuary on the south and Agasthyavanam Biological Park on the southwest. The altitudinal range varies from 89m to 1717m above m.s.l. (Chemmunji

peak). Mean temperature varies from 16°C to 35°C and the average annual rainfall is about 3200mm.

Majority of the area belongs to the Southern tropical moist deciduous forests. Other vegetation types range from montane sub-tropical to tropical evergreen forests. Peppara sanctuary has about 20km² of intact southern hilltop evergreen forest along the crest-line continuous with that of the Neyyar sanctuary. Tropical fresh water swamp forests like the *Myristica* swamp forests, large patches of *Ochlandra* (Reed) brakes and small patches of *Bentinckia condapanna* are found here. The sanctuary suffers degradation by way of large scale illicit felling wood, annual fire damage, the presence of the tea estate in the margin of the sanctuary and the presence of several tribal hamlets scattered throughout the area (Nair, S C. 1991) Social forestry plantation and the 'pilgrimage' to Agasthyarkoo dam have also had its adverse impact on the sanctuary.

CHAPTER 2

Objectives & Methodology

2.1. Objectives

- To prepare a checklist of NWFP of the Peppara wildlife sanctuary.
- To make an approximate quantification of the NWFP collected.

2.2. Methodology

The strategy was to identify the routes and exit points (Table.1.) of the NWFP from the Sanctuary and take observations before and at the time of exchange of goods. The data was collected during the month of October 2001 from the collectors and traders at the Kottur and Adiparambu tribal co-operative societies. The markets held at various villages in the periphery were also visited for data collection (Table.2.). Collectors, traders and forest department staff were informally interviewed and direct observations were made at the trade/auction centres. Field visits were made to some areas from where NWFP were being collected to observe the collection techniques. Discreet observation posts were maintained at various points of the collectors' routes to assess the quantity, variety and techniques adopted in NWFP collection.

CHAPTER 3

Results & Discussion

3.1 NWFP collectors

The NWFP collectors in Peppara are of broadly three categories. Tribals who are inhabitants of the sanctuary area, tribals who reside outside the sanctuary and non-tribals who reside in the fringes of the sanctuary.

The tribal community, Kanikkar, have 13 settlements in the sanctuary area with a total population of 750. Their main sources of income are NWFP gathering, agriculture, and manual labour. The Kanikkar residing in the adjacent Paruthiappalli range, Agasthyavanam Biological Park and Neyyar Wildlife sanctuary are also directly dependant on the forest produce of the Peppara sanctuary. The tea estate workers of the Bonnacord estate and other communities from Jersey Farm to Theviyodu constitute the third category that has direct and indirect involvement in the NWFP trade of the sanctuary.

3.2. NWFP collection

The right to collect is exclusively allotted to the members of the tribals' co-operatives. The individuals are issued permits to collect NWFP. However, studies show that this rule is openly flouted. (Christopher & Jayson, 1996) Competition comes from outsiders not only for cane and reed, but also for fuel wood, fodder, gooseberry and Damer. It was observed that practitioners of traditional medicine and their agents from the neighbourhood as well as distant places were directly collecting medicinal drugs. Illegal collection of medicinal plants and small animals such as Dracko, earthworm, birds and other small mammals are common (Menon, 1997).

The methods adopted for NWFP collection were noted to be totally unscientific and ecologically disastrous. Fruits and seeds are often collected by felling the tree or loping large branches or cutting off an entire unit. (eg. *Myristica sp.*, *Terminalia chebula*, *Cinnamomum malabattrum*, *Phyllanthus emblica*, *Calamus sp.* etc) Collection of commercial quantities of fruits and seeds can cause notable changes in the structure and dynamics of a tree population (Peters, 1994) Large scale collection of oil from *Kingiodendron pinnatum* (Kulavu enna), though banned has resulted in its depletion in the forests. Black Damer (*Canarium strictum*) is collected by peeling off the bark of the tree and then setting fire to it for increased exudation of the resin. According to the collectors, *C.strictum* has become very rare in the sanctuary now. Indiscriminate collection of Bamboos and reeds before their flowering has led to their decrease in the sanctuary. The endangered plant Manjavalli (vine of *Coscinium fenestratum*) is near extinction due to its collection by cutting it off at the base. The illegal extraction of Aroogyya paccha (*Trichopus zeylanicus*) is done by pulling out the entire plant.

3.2.1. NWFP Collectors' routes & exit points

The following are the main routes and exit points for the NWFP collectors of Peppara Sanctuary. Goods transported through these routes do not necessarily

reach the trade centres. Part of it may be sold en route or sold elsewhere at a later time. The table shows observations made on a day at these routes and the major NWFP transported.

Table 1
NWFP Collectors' routes & exit points

Route	Fuelwood (Kg.)	Fodder grass (Kg.)	Reed (Kg.)	Fodder leaves (Kg.)
Sundry mukku	510		250	
Anjumaruthummoodu	500	200	550	
Ottakkudy		340		
Meenangal- Peppara Road	450	-	720	
Jersey Farm	1200	750	150	900
Total	2660	1290	1670	900

Note: - Other than the above, Kaleekkal and Kanithadam are also exit points of the collectors. However, due to the inclement weather, there was no NWFP traffic at these points on the day observations were taken.

3.2.2. Trade Centres of NWFP from Peppara Wildlife sanctuary

The NWFP collected are marketed at the following outlets. It should be noted here that a parallel trade is occurring through illegal channels as well as direct sales either by the collectors taking the products to the buyers or the vice versa. It has been observed that some Kanikkar are bringing the products directly to the crude drug traders in Trivandrum. It has also been reported that buyers come from Tamil Nadu and the products are bought through agents located in the nearby villages.

Table 2
NWFP Trade Centres/Markets

Sl.No.	Trade Centre / Market	Market Days
1	Nedumangad	Tuesday, Saturday
2	Vithura	Daily (evening)
3	Aryanad	Monday, Thursday
4	Kottur	Wednesday, Saturday
5	Kuttichal	Wednesday, Saturday
6	Kattakada	Monday, Thursday
7	Parandode	Daily (evening)

* Apart from these markets, tribals sell their goods in the tribal auction centre held at Kottur every Wednesday and Saturday. Forest officials supervise the auction.

The other outlets are Adiparmbu (Collection centre of Njaraneeli Tribal Co-operative Society) and Kottur (Collection centre of Pottamavu Tribal Co-operative Society).

3.3. NWFP of Peppara:

The wide range of altitude from 89m to 1717m, high rainfall and diversity in vegetation types in Peppara makes it home to a variety of NWFP. Of the recorded NWFP of Peppara (Appendix 1) many are endemic and rare. The items can be classified as follows:

1. Edibles
2. Fuel wood
3. Fodder
4. Medicinal plants
5. Resins & oils
6. Dyes
7. Bamboos and Canes
8. Agricultural products.
9. Others.

All the items are both consumed and traded by the collectors.

1. Edibles

The following list shows the edible wild as well as cultivated plants in the Sanctuary area. Most of the edibles are for own consumption and do not reach the market.

The Kanikkar of Peppara Sanctuary use 54 different types of fruits (Table. 4.). The edibles collected can be classified into major and minor items. Major items are collected in large quantities and form an important part of their diet. Minor items are those that are collected at random during their forays into the forests for NWFP collection.

Table 3
Major edible NWFPs of the Kanikkar

Sl. No.	Local Name	Botanical Name	App.Quantity collected per house per day. (Kg.)	No. of collecting days/year
1	Neduvan	<i>Dioscorea sp.</i>	5	120
2	Nooran	<i>D. pentaphylla</i>	5	30
3	Kavala	<i>D.spicata</i>	5	20
4	Pinnan	<i>Dioscorea sp.</i>	5	5
5	Mukkizhangu	<i>Dioscorea sp</i>	5	15
6	Karuvallykkizhangu	<i>Dioscorea sp</i>	3	5
7	Chananga	<i>Cycas circinalis</i>	4	10
8	Kananchakka	<i>Artocarpus lacucha</i>	35	2
9	Parandakka	<i>Entada rhedii</i>	3	5

Note: - The above quantification is on the basis of interviews with the Kanikkar. It serves only as an indicator and not necessarily accurate. Extensive observations are needed to get accurate data.

Table 4
List Of Edible Plants

	Local name	Botanical name	Part used
1	Ambazham	<i>Spondias indica</i>	Fruits
2	Kashumavu	<i>Anacardium occidentale</i>	Fruits
3	Moradu	<i>Buchnanania latifolia</i>	Fruits
4	Pulichy mavu	<i>Mangifera indica var.</i>	Fruits
5	Vellary mavu	<i>Mangifera indica var.</i>	Fruits
6	Eanthu	<i>Phoenix pusilla</i>	Fruits
7	Makkal valarthy	<i>Ananas comosus var.</i>	Fruits
8	Puruthy	<i>Ananas comosus</i>	Fruits

9	Kattunelly	<i>Garuga pinnata</i>	Fruits
10	Kodampuly	<i>Garcinia gummigutta</i>	Fruits
11	Thanni	<i>Terminalia bellerica</i>	Fruits
12	Koval	<i>Coccinea grandis</i>	Fruits
13	Karakkai	<i>Eleocarpus serratus</i>	Fruits
14	Mootty	<i>Baccaurea courtallensis</i>	Fruits
15	Mulluvenga	<i>Bridelia retusa</i>	Fruits
16	Nellikka	<i>Emblica officinalis</i>	Fruits
17	Vitty	<i>Aporosa lindleyana</i>	Fruits
18	Puly	<i>Tamarindus indica</i>	Fruits
19	Korandy	<i>Salacia beddomei</i>	Fruits
20	Uravu	<i>Persea macrantha</i>	Fruits
21	Anjili	<i>Artocarpus hirsutus</i>	Fruits
22	Kanan Chakka	<i>Artocarpus lacucha</i>	Fruits
23	Pilavu	<i>Artocarpus heterophyllus</i>	Fruits
24	Kallu vazha	<i>Ensete superbum</i>	Fruits
25	Kattu vazha	<i>Musa acuminata</i>	Fruits
26	Panampoovu	<i>Myristica spp.</i>	Fruits
27	Kattuchampa	<i>Syzygium mundagam</i>	Fruits
28	Kattunjara	<i>Syzygium spp.</i>	Fruits
29	Njara	<i>Syzygium caryophyllatum</i>	Fruits
30	Njaval	<i>Syzygium cumini.</i>	Fruits
31	Paera	<i>Psidium guajava</i>	Fruits
32	Kommandy	<i>Passiflora</i>	Fruits
33	Kattukurumulaku	<i>Piper spp.</i>	Fruits
34	Thodaly	<i>Ziziphus oenoplia</i>	Fruits
35	Kara	<i>Randia sp.</i>	Fruits
36	Thetty	<i>Ixora coccinea.</i>	Fruits
37	Elenji	<i>Mimusops elengi</i>	Fruits

38	Iluppa	<i>Madhuca longifolia</i>	Fruits
39	Kadaly vazha	<i>Musa sapientum var.</i>	Fruits
40	Kalluvazha	<i>Ensete superba</i>	Fruits
41	Anachunda	<i>Solanum sp.</i>	Fruits
42	Kothychunda	<i>Solanum sp.</i>	Fruits
43	Thondy	<i>Sterculia balanghas</i>	Fruits
44	Unnam	<i>Grewia tiliaefolia</i>	Fruits
45	Arogyappacha	<i>Trichopus zeylanicus</i>	Fruits
46	Myla	<i>Vitex altissima</i>	Fruits
47	Poochedy	<i>Lantana camera</i>	Fruits
48	Ealakka	<i>Elettaria cardamomum</i>	Fruits
49	Kakklikka		Fruits
50	Kanji		Fruits
51	Njara vazha	<i>Musa sapientum var</i>	Fruits
52	Thommanpulichy	<i>Mangifera indica var.</i>	Fruits
53	Kattunarakam	<i>Atlantia wightii</i>	Fruits, leaves
54	Poovanam	<i>Schleichera oleosa</i>	Fruits, seeds
55	Chembarathy	<i>Hibiscus rosasinensis</i>	Flower
56	Kuppacheera	<i>Amaranthus spinosus</i>	Leaves
57	Oolan thakara	<i>Cassia tora</i>	Leaves
58	Kariveppila	<i>Murraya coenigii</i>	Leaves
59	Thaeila	<i>Camellia sinensis</i>	Leaves
60	Vayana	<i>Cinnamomum zeylanicum</i>	Leaves, flowers
61	Chembu	<i>Colocasia esculenta</i>	Rhizome
62	Koovakkizhangu	<i>Maranta arundinaceae</i>	Rhizome
63	Manga inchi	<i>Curcuma amada</i>	Rhizome
64	Madantha	<i>Alocasia indica</i>	Rhizome, Leaves
65	Eara (Vaei)	<i>Ochlandra sp.</i>	Seeds
66	Kallan mula	<i>Bambusa sp.</i>	Seeds

67	Kallu eara	<i>Ochlandra sp.</i>	Seeds
68	Kari eara	<i>Ochlandra sp.</i>	Seeds
69	Mula	<i>Bambusa bambos.</i>	Seeds
70	Neelamula	<i>Bambusa sp.</i>	Seeds
71	Vally eara	<i>Ochlandra sp.</i>	Seeds
72	Paranda	<i>Entada rhedii</i>	Seeds
73	Oda	<i>Gnetum ula</i>	Seeds
74	Kattellau	<i>Sesamum radiata</i>	Seeds
75	Narunandi	<i>Hemidesmus indicus</i>	Tuber
76	Kachil	<i>Dioscorea oppositifolia</i>	Tuber
77	Karyvallykkizhangu	<i>Dioscorea sp.</i>	Tuber
78	Kavala	<i>Dioscorea spicata</i>	Tuber
79	Neduvan	<i>Dioscorea sp.</i>	Tuber
80	Nooly	<i>Dioscorea tomentosa</i>	Tuber
81	Nooran	<i>Dioscorea pentaphylla</i>	Tuber
82	Mukkezhru	<i>Dioscorea sp.</i>	Tuber
83	Pacheeni		Tuber
84	Pinnan	<i>Dioscorea sp.</i>	Tuber
85	Mukkizhangu	<i>Dioscorea sp.</i>	Tuber
86	Pelayan kadu		Tuber
87	Ayathengu	<i>Arenga wightii</i>	Young Leaves
88	Kantha-kamuku	<i>Bentinckia condapanna</i>	Young leaves
89	Ulatty	<i>Caryotta urens</i>	Young leaves
90	Chananga	<i>Cycas circinalis</i>	Young leaves, seeds

2. Fuel wood

Anything that burns is fuel wood for the sanctuary dependant communities. Most of the trees, woody shrubs and dry leaves are used as fuel.

Combustibility and calorific value are the two major qualities of fuel wood. The presence of resin, inflammable oil and other extraneous substances in the wood enhances combustibility and calorific value. Ochlandra twigs and coconut palm fronds are used for torches. Wood is generally used as fuel for tribal kitchen. Most of the tribal residences have and Aazhi' (bonfire) in their sleeping quarter. Aazhi is maintained at the watchtowers to ward off cold and mosquitoes and also as a deterrent for wildlife intrusion into the cultivated areas. Large logs are used to light the Aazhi while smaller pieces and twigs are preferred in the kitchens.

It was observed that tribals do not sell fuel wood in the markets. The collectors who sell fuel wood are non-tribals who also use it for own consumption. Their use is limited as kitchen fuel but substantial quantity is removed for the markets. As this is an illegal activity, fuel wood was not seen being sold in the open market but in clandestine. It is transported by head load as well as by bicycles. The estate workers in Bonaccord were also noted to be extracting fuel wood from the surrounding forests for their own consumption. An approximate quantity of 9823 Kg of firewood is collected from the sanctuary. October is the lean period for NWFP collection. Hence the actual amount will be quite high during April May.

It is suggested that a detailed survey should be conducted to ascertain the fuel wood consumption pattern in the area.

Table 5

Fuel wood collected from the sanctuary in a day for own consumption

	Kani Residences within the Sanctuary		Kani Residences outside the Sanctuary		Non-Kani residences	Total
	For Aazhi & Cooking	Only for Cooking	For Aazhi & Cooking	Only for Cooking	Only for Cooking	
No. Of Houses	125	67	12	29	450	683
Appr. Consumption per day (Kg)	31	6	31	6	4	
Total (Kg)	3875	402	372	174	1800	6623

Table 6

Fuel wood collected from the sanctuary in a day

Fuel-wood collected for consumption within the sanctuary	4277 Kg
Fuel-wood collected for consumption outside the sanctuary	2346 Kg
Fuel-wood collected from sanctuary for sale	2660 Kg
Total	9283 Kg

3. Fodder

Fodder grass is collected for cattle and fodder leaves for goats. The Kanikkar were not seen collecting fodder for sale. However, the people residing adjacent to the forests collect it and sell it to the nearby villages. Approximately 1290 Kg of fodder grass and 900 Kg of fodder leaves are taken everyday from the sanctuary. According to the collectors, the fodder grass collected will be thrice this amount during April - May. It is assumed that at least 50% of the cattle, i.e.106 in Bonnacord estate are grazed within the sanctuary. Thus it might be estimated that during a day in October an approximate quantity of 4590 Kg. of fodder is consumed from the Sanctuary.

Table 7

Per day consumption of fodder

Area	No. of Goats	Approximate consumption per day in Kg	No. of Cattle	Approximate consumption per day in Kg
Peppara Sanctuary	67	536	13	156
Chathangode & Valiyakala*	30	240	15	180
Bonnaccord	2	16	106	1272
Total	99	792	134	1608

*The Chanthangode & Valiyakala Kanikkar settlements lie in close proximity to Peppara W/L Sanctuary. Their goats and cattle are let out to graze in the sanctuary area.

4. Medicinal Plants

The pharmaceutical industries, crude drug dealers and traditional vaidyas in and around Trivandrum partly depend on the sanctuary for medicinal plants. Apart from the tribals, illegal collection of medicinal plants is rampant. Traders from Tamil Nadu also directly engage tribals and other collectors for the supply of medicinal plants. Several of the medicinal plants collected and sold are considered to be rare and endemic (eg. *Coscinium fenestratum*, *Symplocos cochinchinensis*)(Mohanani, 1991).

Majority of the legal trade in medicinal plants is routed through the tribal co-operative societies' collection centres at Adiparambu and Kottur. The important items are listed below.

Table 8

Collection of major medicinal plants/plant parts in trade

Sl. No	Local Name	Botanical name	Qt.y collected at a time (Kg)
1.	Adapathiyam	<i>Holostemma ada-kodiam</i>	0.25 - 0.5
2.	Amalpory	<i>Rauvolfia serpentina</i>	0.1 - 0.5
3.	Arogyappacha	<i>Trichopus zeylanicus</i>	0.5 - 2
4.	Chappongu	<i>Caesalpinia sappan</i>	1 - 10
5.	Chittaratha	<i>Alpinia calcarata</i>	1 - 2
6.	Chooral	<i>Calamus rotang</i>	5 - 20
7.	Ealakka	<i>Elettaria cardamomum</i>	0.5 - 1
8.	Garudakkody	<i>Aristolochia indica</i>	0.5 - 2
9.	Kacholam	<i>Kaemphaeria galanga</i>	0.5 - 1
10.	Kadukkakkai	<i>Terminalia chebula</i>	1 - 3
11.	Kadukkappoovu	<i>Terminalia chebula</i>	1 - 5
12.	Karakka	<i>Elaeocarpus serratus</i>	10 - 30
13.	Karutha kunthirikkam	<i>Canarium strictum</i>	0.25 - 1
14.	Kasthurymanjal	<i>Curcuma aromatica</i>	5 - 10
15.	Kattadapathiyam		0.5 - 1
16.	Kattukuarumulaku	<i>Piper spp.</i>	1 - 2
17.	Kodumpuli	<i>Garcinia gummy-gutta</i>	5 - 20
18.	Kolinji	<i>Alpinia galanga</i>	0.5 - 1

19.	Kurumthotty	<i>Sida rhombifolia</i>	0.5 - 2
20.	Manjavally	<i>Cocinium fenestratum</i>	5 - 15
21.	Moovila	<i>Pseudarthria viscida</i>	1 - 2
22.	Narunandy	<i>Hemidesmus indicus</i>	0.5 - 1
23.	Nellikka	<i>Phyllanthus emblica</i>	10 - 40
24.	Orila	<i>Desmodium gangeticum</i>	1 - 2
25.	Pachottypatta	<i>Symplocos cochinchinensis</i>	2 - 20
26.	Padathaly	<i>Cyclea peltata</i>	0.25 - 1
27.	Panampoovu	<i>Myristica spp.</i>	0.5 - 4
28.	Sathavary	<i>Asparargus racemosus</i>	0.5 - 3
29.	Thaen	<i>Honey</i>	0.5 - 1
30.	Thakkalippoovu	<i>Kalangoe lacineata</i>	5 - 20
31.	Thalyppoovu		1 - 2
32.	Vayanapoovu	<i>Cinnamomum zeylanicum</i>	1 - 5
33.	Veluthakunthirikkam	<i>Vateria indica</i>	0.5 - 10

A detailed list can be found in **Appendix 1**.

5. Oils & Resins

Essential oils are volatile, odoriferous liquids occurring in many plants. Different parts of a plant like bark, wood, root, seed, flowers and fruits yield oil. *Hydnocarpus pentandra* (Marotti), *Cymbopogon flexuosus* (Inchipullu) *Vettiveria zizanioides* (Ramachham), Eucalyptus globules (Eukkali) *Cinnamomum zeylanicum* (karuva) etc. are oil-yielding plants in the area.

Resins are exuded as a normal phenomenon and as a result of injury. Extraction of *Kingiodendron pinnatum* (Kulavu enna) is banned due to the fact that the tree has become very rare in the wild; moreover the extraction method of drilling the wood destroys the tree. However, illegal extraction is rampant. The highly inflammable resin has been reported to be the cause of some wildfire due to spillage of the resin when the drilled hole is left uncovered after extraction. Black Damer (Kunthirikkam) is a resin obtained from *Canarium strictum*, an evergreen tree that has become very few in the sanctuary. White Damer (Vellakunthirikkam) from *Vateria indica* is also extracted in substantial quantities from the Sanctuary.

6. Dyes

Neela amari (*Indigofera tinctoria*), Kadukka (*Terminalia chebula*), Chappangu /Pathimukham (*Caesalpinia sappan*) are the plants that yield dye. The handloom weaving industry in Balaramapuram depend on these products for their work and bulk quantities are bought from the markets through the agents.

7. Bamboos and Canes

Bamboos and canes are important minor forest produce of the Sanctuary. *Ochlandra* spp., *Bambusa* spp., *Dendrocalamus* spp., are the genera of bamboos of economic importance. *Ochlandra travancorica* is endemic to Western Ghats. These are taken out of the sanctuary both in its raw form as well as finished products such as ladder, furniture, mats, baskets, sieves, etc. Tribals use them for construction of huts and cattle sheds.

Canes (*Calamus* spp.), are collected extensively; it is reported that it has become rare in the Sanctuary. Some of species are Valli chooral (*Calamus hookerianus*), Ari chooral (*C.travancoricus*), Thannikkodi (*C.gamblei*), Panniparambu (*C.thwaitesii*), Kalakkadan, etc. Like bamboo, canes (rattans) are taken out both in raw form and finished products. Rattan is expensive and the products are very much in demand among the public. The whole rattan population is declining rapidly; the above species are facing immediate threat of extinction (Renuka, 1991).

The hamlet of Kaliyeekkal has about 50 families consisting of Kanikkar, Paraya and Pulaya communities. Around 200 members are actively engaged in basket weaving producing about 2000 baskets (Chooral kutta), which fetch them Rs.9/- per basket from the agent at Manakala. 2 lorry loads of basket leave for Ernakulam every week. Part of the Eera is collected from Paruthipally range. 15 nos.of Eera are required for one basket.

8. Agricultural produce

Other than the NWFPs, agricultural produce of the tribals such as areca nut, betel leaves, bananas, cassava, pepper, pineapple, jackfruits and yams are also sold in the auction centres and markets. They cultivate 17 varieties of banana and 4 varieties of mango. They also cultivate 14 varieties of tapioca, sweet potato, yams etc. Medicinal plants like *Curcuma aromatica* and *Trichopus zeylanicus* are cultivated and sold.

9. Animals

Honey and wax are considered as animal produce. Cheru thenu and Van thenu are the two varieties collected. The wax is also collected and supplied for medicinal purposes.

The Kanikkar for their own consumption hunts small mammals and fish. Incidents of poaching are not rare. However, this falls outside the purview of the study.

10. Others

The Kanikkar find some use for almost all items in the forest. Out of 192 houses within the sanctuary, 142 are thatched with reeds. 23 houses out of 41 in Chathangode and Valiyakala settlements are of similar pattern.

Table 9
Materials used in house construction

	Item	Quantity per house (Kg)	Total
1.	Reed leaves for thatching	400	72800
2.	Pillars (Venga / Maruthu / Myla, Thembavu)	320	58240
3.	Utharam (Venga / Maruthu / Myla)	640	116480
4.	Kazhukkol (Mula / Vatta,)	480	87360
5.	Varichil Mula	700	127400
6.	Mallu (Maruthu / Myla / Thembavu)	50	9100
7.	Fibre (Vakka, Vazhukkan)	80	14560

Fishing is one of the daily pastimes and important source of food for the Kani. Other than using net, fish traps(Kodamba), cast fly etc., they commonly resort to fish poison extracted from the wild plants.

Table 10
Sources of Fish Poison

Sl. No.	Local Name	Botanical Name	Part used
1	Kareencha	<i>Acacia intsia</i>	Bark
2	Pulivaka	<i>Albizia odoratissima</i>	Stem, bark
3	Kolinji	<i>Alpinia galanga</i>	Rhizome
4	Mulluvenga	<i>Bridelia retusa</i>	Bark
5	Neervalam	<i>Croton tiglium</i>	Seeds, Bark
6	Oda	<i>Gnetum ula</i>	Seeds
7	Pongu	<i>Hopea wightiana</i>	Bark
8	Aikkutty vally	<i>Milletia rubignosa</i>	Stem
9	Soapinkai (Thembrakka)	<i>Semecarpus anacardium</i>	Seeds
10	Kakklikka		Fruits

Smoking and chewing tobacco are common among the Kani. The following plants, both cultivated and wild are used.

Table 11
Plants used in chewing & smoking

Sl.No.	Local Name	Botanical Name	Part used
1.	Kamuku	<i>Areca catechu</i>	Seeds
2.	Kana kamuku	<i>Arenga wightii</i>	Seeds
3.	Ganja	<i>Cannabibus sativa</i>	Leaves
4.	Tobacco	<i>Nicotiana tabaccum</i>	Leaves
5.	Vetta	<i>Piper betal</i>	Leaves
6.	Kattuvetta	<i>Piper sp</i>	Leaves
7.	Cuva ila	<i>Schumanianthus variagatus</i>	Leaves

Cuva ila or leaves of *Schumanianthus variagatus* is collected and sold to the hotels of the neighbouring villages. There, it is used as plates. Four ladies from Bonnaccord were found to collect these leaves daily, and sell it in Vithura. Similarly this is the sole income of some of the ladies residing in the periphery of the sanctuary. Further detailed study is necessary for accurate quantification.

CHAPTER 4

Conclusion and Recommendations

This short-term study has brought into focus the NWFP trade based on the resources of Peppara Wildlife Sanctuary. The following points bear consideration.

1. Even in a comparatively lean month like October, the NWFP trade is substantial.
2. A large number of Kani settlements can be found in the interior of Peppara Wildlife Sanctuary, as a result of which NWFP extraction is higher than that from the neighbouring Neyyar Wildlife Sanctuary.
3. Even within the limitations of the present study, ample evidence of illegal collection was noticed. The connected issues are that the illegal collection denies the tribal people of their rights, encourages outsiders in collection of NWFP and endangers the critical flora in the area. Poaching is fallout.
4. Trade in banned NWFP such as *Trichopus zeylanicus*; resin of *Kingiodendron pinnatum*, etc., was noticed during the study even in legal centres.
5. Many tribal NWFP collectors are in deep debt to the traders; lack of trustworthy financing institutions lead the Kani to such debt traps. This

robs the Kani of whatever financial gains he could have made from this activity.

6. The traditional ethics of the Kani in NWFP collection have become non-existent. There were self-imposed restrictions in methods of collection, right of collection in a particular area; sustainable extraction was practised centuries before the phrase became fashionable. Commercial demands and dire poverty are forcing the Kani to dig at his own roots.

The Peppara Wildlife Sanctuary area has been the traditional habitation of Kanikkar for centuries. As the appointed guardians of forests, they had a recognised position in the society till the pre-independence era. Their traditional right to collect NWFP was unquestioned. However, the advent of British rule and the forest laws in the 19th century restricted the Kanikkar's lifestyle. Large-scale encroachment and deforestation in the post-independence period destroyed most of their range and they had to face competition and threat from the outsiders. This resulted in the disintegration of this forest-dwelling community; deprived of their traditional livelihood, the Kanikkar had no choice but to either merge with the outside world or slink away to deeper recesses of the remaining forests. Yet, their unique culture persists and unlike similar forest dwellers, Kanikkar are successfully adapting themselves to the advent of so-called civilization. The Kanikkar's intimate knowledge of their habitat is left untapped in the belated forest conservation policies of the government. Their traditional skills in medicines, taxonomy, sustainable utilization of forest resources and resource conservation are valuable tools in the management of the forests in this area. Pride in their heritage, self-assertion, education, and economic incentives could transform Kanikkar into more productive and respected members of the society.

The conservation of Agasthyamalai region that partly falls in the Peppara Wildlife Sanctuary has been emphasised time and again by numerous scientists and conservationists. (Ali, 1985; Nair SC, 1991; Menon, 1997; Mohanan N, 1991; Mohanan & Henry, 1994 etc.). As the habitat of several rare and endangered flora & fauna and the source of valuable medicinal plants, it cannot be further stressed to regulate human access into the preserved area. The regulations should be effective to ensure sustainable extraction of the resources as well as to prevent all kinds of legal or illegal intrusions.

The present study is too short to provide a sufficiently broad and in-depth picture of the NWFP trade in Peppara Wildlife Sanctuary. As the volume of trade is dependant on factors such as climate, market demand and prices, a study of longer duration, say, at least one to two years is required to understand the various aspects of the NWFP outflow from the sanctuary.

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Appendix 1 - NWFP of Peppara Wildlife Sanctuary

		CHECKLIST OF NWFP - PEPPARA WILDLIFE SANCTUARY			
	Local Name	Family & Botanical Name	Status	Part used	Use
		<i>Acanthaceae</i>			
1	Adalodakam	• <i>Adathoda vasica</i>		Stem, Leaves, Root	Medicine
2	Kiriyathu	<i>Andrographis paniculata</i>	LR/LC	Plant	Medicine
3	Chelanthy pacha	<i>Dipteracanthus sp.</i>		Leaves, Root	Medicine
4	Karynkurinji	<i>Strobilanthes heyneanus</i>		Leaves	Medicine
		<i>Alangiaceae</i>			
5	Vathamparathy/ Ankolam	<i>Alangium salvifolium</i>		Stem, Bark	Medicine
		<i>Amaranthaceae</i>			
6	Kadalady	<i>Achyranthes aspera</i>		Plant	Medicine
7	Balippoovu / Cheroola	<i>Aerva lanata</i>		Plant	Medicine
8	Kuppacheera	<i>Amaranthus spinosus</i>		Leaves	Fodder, Food
		<i>Amaryllidaceae</i>			
9	Nilappana	<i>Curculigo orchoides</i>		Plant	Medicine
		<i>Anacardiaceae</i>			
10	Kashumavu	<i>Anacardium occidentale</i>		Fruits	Medicine, Food
11	Kulamavu	<i>Buchanania axillaris</i>		Leaves, Stem	Medicine
12	Moonga pezhu	<i>Buchanania lanzan</i>	LR/LC	Stem,	Medicine, Fuelwood
13	Moradu	<i>Buchanania latifolia</i>		Fruits	Food, Fuelwood
14	Chengurinji	<i>Gluta travancorica</i>	EN	Stem	Fuelwood
15	Charu	<i>Holygarna arnottiana</i>	EN	Stem	Medicine, Fuelwood
16	Uthy	<i>Lannea coromandelica</i>		Stem	Medicine, Fuelwood
17	Pulichy mavu	<i>Mangifera indica var.</i>		Fruits	Food

18	Vellary mavu	<i>Mangifera indica</i> var.		Fruits	Food
19	Soapinkai (Thembrakka)	<i>Semecarpus anacardium</i>		Seeds	Medicine, Fish Poison, Marking nut
20	Ambazham	<i>Spondias indica</i>		Fruits	Food
		<i>Apiaceae</i>			
21	Kodangal	<i>Centella asiatica</i>		Plant	Medicine
		<i>Apocynaceae</i>			
22	Mukkampala	<i>Alstonia scholaris</i>		Latex	Medicine
23		<i>Holarrhena pubescens</i>		Bark, Seeds	Medicine
24	Paluvally	<i>Ichnocarpus frutescens</i>		Stem, Leaves	Medicine, Basket making
25		<i>Rauvolfia hookeri</i>		Root	Medicine
26	Sarppagandhi (Amalpory)	<i>Rauvolfia serpentina</i>	EN/R	Root	Medicine
27	Danthappala (Vettupala)	<i>Wrightia tinctoria</i>		Leaves, Bark, Seeds	Medicine
		<i>Araceae</i>			
28	Vayambu	<i>Acorus calamus</i>	VU/R	Rhizome	Medicine
29	Madantha	<i>Alocasia indica</i>		Rhizome, Leaves	Medicine, Food
30	Kalthamara	<i>Ariopsis peltata</i>	R	Plant	Medicine
31	Chembu	<i>Colocasia esculenta</i>		Rhizome	Food
32		<i>Remusatia vivipara</i>		Bulbils	Food
		<i>Arecaceae</i>			
33	Ayathengu	<i>Arenga wightii</i>	EN	Young Leaves, Midrib of Leaves, Inflorescence	Food, Fish traps, Toddy
34	Kantha-kamuku	<i>Bentinckia condapanna</i>	EN/R	Young Leaves, Fruits	Medicine, Food
35	Pannipparambu	<i>Calamus thwaitesii</i>	EN	Stem	Furniture, Basket weaving

36	Chooral	<i>Calamus rotang</i>		Stem	Furniture, Basket weaving
37	Chooral /Ottammoodan	<i>Calamus gambeli</i>		Stem	Furniture, Basket weaving
38	Vally chooral /ary chooral	<i>Calamus travancoricus</i>	EN	Stem	Furniture, Basket weaving
39	Ulatty	<i>Caryotta urens</i>		Young Leaves	Medicine, Food
40	Eanthy	<i>Phoenix loureirii</i>	LR-LC/R	Root, Fruits	Medicine, Food
41	Kana-kamuku	<i>Pinanga dicksoni</i>	EN/R	Fruits, Leaf base	Medicine, Fodder, Chewing
		Aristolochiaceae			
43	Garudakkodi	<i>Aristolochia indica</i>		Root	Medicine
44		<i>Aristolochia tagala</i>	VU/R	Root	Medicine
45	Kuttil vayana	<i>Thottea siliquosa</i>		Plant	Medicine
		Asclepiadaceae			
46	Chakkarakkolly	<i>Gymnema sylvestre</i>		Leaves,	Medicine
47	Narunandi	<i>Hemidesmus indicus</i>		Tuber	Medicine, Fodder, Food
48	Adapathiyan	<i>Holostemma ada-kodien</i>	VU/R	Rhizome, Plant	Medicine
49	Vallyppala	<i>Tylophora indica</i>		Leaves, Root	Medicine
		Asteraceae			
50	Kaithonni,	<i>Eclipta alba</i>		Plant	Medicine
51	Anachuvadi	<i>Elephantopus scaber</i>		Plant	Medicine
52	Moyal cheviyan	<i>Emilia sonchifolia</i>		Plant	Medicine
53	Kuppa manjal	<i>Spilanthes calva</i>		Plant	Medicine
54	Poovamkurunt hil	<i>Vernonia cineria</i>		Plant	Medicine
		Bambusaceae			
55	Mula	<i>Bambusa bambos.</i>		Fruits, Stem	Building construction, Furniture, Tools, Medicine, Food,

56	Kallan mula	<i>Bambusa sp.</i>		Fruits, Stem	Building construction, Furniture, Tools, Medicine, Food,
57	Neelamula	<i>Bambusa sp.</i>		Fruits, Stem	Building construction, Furniture, Tools, Medicine, Food,
58	Kallu eara	<i>Ochlandra sp.</i>		Fruits, Stem	Building construction, Furniture, Tools, Medicine, Food,
59	Kari eara	<i>Ochlandra sp.</i>		Fruits, Stem	Building construction, Furniture, Tools, Medicine, Food,
60	Vally eara	<i>Ochlandra sp.</i>		Fruits, Stem	Building construction, Furniture, Tools, Medicine, Food,
61	Eara (Vaei)	<i>Ochlandra spp.</i>		Fruits, Stem	Building construction, Furniture, Tools, Medicine, Food,
		<i>Barringtoniaceae</i>			
62	Pezhu	<i>Careya arborea</i>		Stem	Agricultural tools, Fuelwood
		<i>Bignoniaceae</i>			
63	Palakappayyan i	<i>Oroxylum indicum</i>	VU/R	Root	Medicine
64	Pathiri	<i>Stereospermum chelonoides</i>		Stem, Root	Medicine, Fuelwood
		<i>Bischofiaceae</i>			
65	Thiruppu	<i>Bischofia javanica</i>		Stem, Leaves	Fuelwood, Fodder
		<i>Bombacaceae</i>			
66	Elavu	<i>Bombax ceiba</i>		Seed hairs, Thorn, Seeds	Medicine, Filling mattresses, Fodder
		<i>Boraginaceae</i>			
67	Thekkada	<i>Heliotropium indicum</i>		Plant	Medicine
68	Kalloorvanchy	<i>Rotula aquatica</i>		Plant	Medicine
		<i>Bromeliaceae</i>			
69	Puruthy	<i>Ananas comosus</i>		Fruits	Food
70	Makkal valarthy	<i>Ananas comosus var.</i>		Fruits	Food

		<i>Burseraceae</i>			
71	Karutha Kunthirikkam	<i>Canarium strictum</i>	VU/R	Resin	Medicine, Paint, Mosquito repellent
72	Kattunelly	<i>Garuga pinnata</i>		Fruits	Medicine, Food
		<i>Cannabinaceae</i>			
73	Kanchavu	<i>Cannabis sativa</i>		Inflorescence	Medicine, Smoking
		<i>Capparaceae</i>			
74	Nirmathalam	<i>Creteva magna</i>		Stem,	Medicine
		<i>Clusiaceae</i>			
75	Pinna (Punna)	<i>Calophyllum inophyllum</i>		Seeds, Stem	Medicine, Fuelwood
76	kattupunna	<i>Calophyllum polyanthum</i>		Seeds, Stem	Medicine, Fuelwood
77	Kodampuly (chanampuly)	<i>Garcinia gummi-gutta</i>	VU/G	Fruits	Food
78	Nangu	<i>Mesua ferrea</i>		Stem	Fuelwood
79	Poothamkolly	<i>Poeciloneuron indicum</i>	EN	Stem	Medicine, Walking stick
		<i>Combretaceae</i>			
80	Pinjani valli (pullanji valli)	<i>Calycopteris floribunda</i>		Stem, Leaves	Medicine
81	Attumaruthu	<i>Terminalia arjuna</i>	LR-NT/R	Seeds, Stem, Leaves	Medicine, Fuelwood, Fodder
82	Thanni	<i>Terminalia bellerica</i>		Fruits	Medicine, Food
83	Kadukka	<i>Terminalia chebula</i>		Fruits, Galls on Leaves	Medicine
84	Thembavu	<i>Terminalia crenulata</i>		Bark	Medicine
85	Maruthu	<i>Terminalia paniculata</i>		Branches	Building construction, Fuelwood
		<i>Convolvulaceae</i>			
86	Vishnukranthy	<i>Evolvulus alsinoides</i>		Plant	Medicine
87	Mothalakkanda	<i>Ipomoea mauritania</i>		Tuber	Medicine
88	Palmuthakku	<i>Ipomoea paniculata</i>		Tuber	Medicine

89	Prasirini	<i>Merremia tridentata</i>		Plant	Medicine
		<i>Crassulaceae</i>			
90	Thakkalippoovu (chodakka)	<i>Kalangoe lacineata</i>		Flower	Toy
		<i>Cruciferae</i>			
91	Kattukaduku	<i>Brassica sp.</i>		Seeds	Medicine
		<i>Cucurbitaceae</i>			
92	Koval	<i>Coccinea grandis</i>		Fruits	Medicine, Food
93		<i>Mukia madraspatna</i>		Fruits	Medicine
94	Kattupadavalam	<i>Trychosanthes cucumariana</i>	DD	Plant	Medicine
		<i>Cycadaceae</i>			
95	Chananga	<i>Cycas circinalis</i>	CR/R	Young Leaves, Seeds	Food
		<i>Cyperaceae</i>			
96		<i>Cyperus castaneus</i>		Plant	Fodder
97	Muthanga	<i>Cyperus rotundus</i>		Plant, Tuber	Fodder, Medicine
98		<i>Cyperus tenuispica</i>		Plant	Fodder
99		<i>Fimbristylis aestivalis</i>		Plant	Fodder
100		<i>Fimbristylis dichotoma</i>		Plant	Fodder
101		<i>Fimbristylis miliacea</i>		Plant	Fodder
102		<i>Kyllinga melanosperma</i>		Plant	Fodder
103		<i>Scleria levis</i>		Plant	Fodder
104		<i>Scleria lithosperma</i>		Plant	Fodder
		<i>Dilleniaceae</i>			
105		<i>Acrotrema arnottiana</i>	EN	Plant	Medicine
106	Malmpunna	<i>Dillenia pentagyna</i>		Stem, Leaves	Medicine, Fuelwood

		<i>Dioscoreaceae</i>			
107	Kachil	<i>Dioscorea oppositifolia</i>		Tuber	Food
108	Nooran	<i>Dioscorea pentaphylla</i>		Tuber	Food
109	Karyvallykkizhangu	<i>Dioscorea sp.</i>		Tuber	Medicine, Food
110	Neduvan	<i>Dioscorea sp.</i>		Tuber	Food
111	Mukkizhangu	<i>Dioscorea sp.</i>		Tuber	Food
112	Kavala	<i>Dioscorea spicata</i>		Tuber	Food
113	Nooly	<i>Dioscorea tomentosa</i>		Tuber	Food
		<i>Dipterocarpaceae</i>			
114	Thambakam	<i>Hopea parviflora</i>		Stem	Fuelwood
115	Pongu	<i>Hopea wightiana</i>		Bark, Stem	Fish poison, Fuelwood
116	Vella Kunthirikkam	<i>Vateria indica</i>	LR-NT/G	Resin	Medicine, Paint
		<i>Droseraceae</i>			
117		<i>Drosera burmanii</i>		Plant	Medicine
		<i>Elaecarpaceae</i>			
118	Karakkai	<i>Eleocarpus serratus</i>		Fruits	Food, Fuelwood
119		<i>Elaeocarpus tuberculatus</i>		Fruits	Medicine
		<i>Euphorbiaceae</i>			
120	Kuppameni	<i>Acalypha indica</i>		Plant	Medicine
121	Vitty	<i>Aporosa lindleyana</i>		Fruits	Food
122	Mootty	<i>Baccaurea courtallensis</i>	EN	Fruits	Food
123	Mulluvenga	<i>Bridelia retusa</i>		Fruits, Stem	Food, Fuelwood
124	Nellikka	<i>Emblica officinalis</i>		Fruits	Medicine, Food
125	Chittirappala	<i>Euphorbia hirta</i>		Plant	Medicine
126	Kattavanakku	<i>Jatropha curcas</i>		Stem, Seeds	Medicine, Fodder
127	Vatta	<i>Macranga peltata</i>		Leaves	Plate
128	Chengolla	<i>Mallotus philippensis</i>		Stem,	Fuelwood

				Leaves	
129	Keezhanelly	<i>Phyllanthus amarus</i>		Plant	Medicine
130		<i>Phyllanthus debilis</i>		Plant	Medicine
131	Aavanakku	<i>Ricinus communis</i>		Root, Seeds	Medicine, oil
132	Choriyanam	<i>Tragia involucrata</i>		Plant, Root	Medicine
		<i>Fabaceae</i>			
133	Vellakkunny	<i>Abrus precatorius</i>		Root, Fruits	Medicine
134	Karingaly	<i>Acacia catechu</i>		Stem, Flower	Medicine
135	Kareencha	<i>Acacia instia</i>		Bark	Fish poison
136	Velleencha	<i>Acacia sp.</i>		Bark	Scrubber
137	Manchady	<i>Adenanthera pavonia</i>		Seeds	Medicine, Fuelwood
138	Pulivaka	<i>Albizia odoratissima</i>		Stem, Bark	Medicine, Fodder, Fish poison
139	Mandaram	<i>Bauhinia purpurea</i>		Bark	Medicine
140	Plash, Chamatha,	<i>Butea monosperma</i>		Bark	Medicine
141	Kazhanji	<i>Caesalpinia bonducella</i>		Seeds	Medicine
142	Chappanga	<i>Caesalpinia sappan</i>		Stem	Medicine
143	Konna	<i>Cassia fistula</i>		Bark, Stem	Medicine, Fuelwood
144	Oolan thakara	<i>Cassia tora</i>		Leaves	Medicine, Fodder, Food
145	Sanghupushpa m	<i>Clitoria ternatea</i>		Leaves, Flowers	Medicine
146	Velletti	<i>Dalbergia lanceolaria</i>		Stem	Fuelwood
147	Eatty	<i>Dalbergia latifolia</i>		Medicine, Fuelwood	Fuelwood
148	Orila	<i>Desmodium gangeticum</i>		Root	Medicine
149	Paranda	<i>Entada rhedii</i>		Seeds, Bark, Seeds	Medicine, Food
150	Murukku	<i>Erythina indica</i>		Bark, Leaves	Medicine, Fodder

151	Mullumurukku	<i>Erythrina varigata</i>		Leaves, Stem	Plate, Fencing
152	Velykkonna	<i>Glyricidia glabra</i>		Stem, Leaves	Fertiliser, Fodder
153	Palavan	<i>Humboldtia unijuga</i>	EN/CR	Root galls	Medicine
154	Neelayamari	<i>Indigofera tinctoria</i>		Leaves	Medicine, Dye
155	Kulavu	<i>Kingiodendron pinnatum</i>	EN/G	Oil	Fuelwood
156	Aikkutty vally	<i>Millettia rubignosa</i>	EN/R	Stem	Fish poison
157	Thottavady	<i>Mimosa pudica</i>		Plant	Medicine
158	Naikkurana	<i>Mucuna puricata</i>		Leaves, Seed hairs	Medicine
159	Kattupayar	<i>Phaseolus sp.</i>		Fruit, Stem	Medicine
160	Kattuzhunnu	<i>Phaseolus sp.</i>		Fruit, Stem	Medicine
161	Ungu	<i>Pongamia pinnata</i>		Bark, Fruits,Stem	Medicine, Fuelwood
162	Moovila	<i>Pseudarthria viscida</i>	LR- NT/R	Root	Medicine
163	Venga	<i>Pterocarpus marsupium</i>		Stem, Leaves	Medicine, Fuelwood, Fodder, Building constructions
164	Plachy vally	<i>Spatholobus roxburghii</i>		Bark	Fish poison
165	Puly	<i>Tamarindus indica</i>		Stem, Leaves, Fruits	Medicine, Food, Fodder, Fuelwood
166	Kozzhinjil	<i>Tephrosia purpurea</i>		Plant	Medicine
		<i>Flacourtiaceae</i>			
167	Marotty	<i>Hydnocarpus alpina</i>		Seed, Stem	Medicine, Oil, Fuelwood
168	Plamanja	<i>Fungus</i>			Medicine
		<i>Gentianaceae</i>			
169		<i>Hoppea fastigiata</i>		Plant	Medicine
		<i>Gnetaceae</i>			
170	Oda	<i>Gnetum ula</i>		Stem, Fruits	Medicine, Fish poison, Food

		<i>Hippocrateaceae</i>			
171	Korandy	<i>Salacia beddomei</i>	EN/R	Fruits	Medicine, Food
		<i> Icacinaceae</i>			
172		<i>Sarcostigma kleinii</i>		Stem, Leaves	Medicine
		<i>Lamiaceae</i>			
173	Nattappochedy	<i>Hyptis suaveolens</i>		Plant	Medicine
174	Thumba	<i>Leucas aspera</i>		Leaves	Medicine
175	Kattu thulasi	<i>Oscimum basilicum</i>		Plant	Medicine
176	Thulasi	<i>Oscimum sanctum</i>		Leaves	Medicine
		<i>Lauraceae</i>			
177		<i>Cinnamomum sulphuratum</i>	VU/G	Leaves, Fruits	Medicine
178	Vayana	<i>Cinnamomum zeylanicum</i>		Leaves, Flowers	Food
179	Uravu	<i>Persea macrantha</i>	EN/R	Stem, fruit	Fuelwood, Fodder
		<i>Liliaceae</i>			
180	Kattarvazha	<i>Aloe barbadensis</i>		Leaves	Medicine, Cosmetic
181	Sathavari	<i>Asparagus racemosus</i>		Tuber	Medicine
182	Menthonny	<i>Gloriosa superba</i>	LR-NT/R	Tuber	Medicine
		<i>Lobeliaceae</i>			
183	Kattupukayila	<i>Lobelia nicotianaefolia</i>		Plant	Medicine
184	Vallykkanjiram	<i>Strychnos bourdilloni</i>		Seeds	Medicine
185	Kanjiram	<i>Strychnos nux-vomica</i>		Seeds	Medicine
		<i>Lycopodiaceae</i>			
186	Kalchada	<i>Lycopodium phlegmare</i>		Plant	Medicine
		<i>Lythraceae</i>			
187	Venthekku	<i>Lagerstroemia microcarpa</i>	EN	Stem, Leaves	Fuelwood, Fodder, Building construction

188	Mylanchy	<i>Lawsonia alba</i>		Leaves	Dye, Medicine
189	Thathiri	<i>Woodfordia fruticosa</i>		Flowers	Medicine
		<i>Malvaceae</i>			
190	Oorakam	<i>Abutilon indicum</i>		Root, Leaves, Seed	Medicine
191		<i>Hibiscus hispidissimus</i>		Flowers, Leaves,	Medicine
192	Chembarathy	<i>Hibiscus rosasinensis</i>		Flowers, Leaves,	Medicine, Fodder, Shampoo
193		<i>Sida acuta</i>		Root	Medicine
194		<i>Sida glutinosa</i>		Root	Medicine
195	Kurumthotty	<i>Sida rhombifolia</i>		Root	Medicine
196	Cheelanthy	<i>Thespesia populnea</i>		Stem, Leaves	Fuelwood, Fodder, Building construction
		<i>Marantaceae</i>			
197	Koovakkizhang u	<i>Maranta arundinaceae</i>		Rhizome	Food
198	Cuva ila	<i>Shumannianthus virgatus</i>		Leaves	Plate
		<i>Melastomaceae</i>			
199	Kayambu	<i>Memecylon umbellatum</i>		Leaves, Bark	Medicine
		<i>Meliaceae</i>			
200	Punyava	<i>Aglaia elaeagnoidea</i>	EN	Fruit	Medicine
201	Chuvanna Akil	<i>Chukrasia tabularis</i>		Stem	Medicine,
202	Akil	<i>Dysoxylum binectarifera</i>	EN/G	Bark	Medicine
203		<i>Melia dubia</i>		Bark	Medicine
204	Nilanarakam	<i>Naragamia alata</i>		Plant	Medicine
		<i>Menispermaceae</i>			
205	Malathangi	<i>Cissampelos pareira</i>		Plant	Medicine
206	Manjavally	<i>Coscinium fenestratum</i>	CR/R	Stem	Medicine
207	Padathaly	<i>Cyclea peltata</i>		Rhizome, Leaves	Medicine, Shampoo

208		<i>Stephania japonica</i>		Leaves	Medicine
209	Amruthu	<i>Tinospora cordifolia</i>		Leaves, Stem	Medicine
		<i>Moraceae</i>			
210	Maravuri	<i>Antiaris toxicaria</i>		Bark	Bed, Fish poison
211	Pilavu	<i>Artocarpus heterophyllus</i>		Fruits, Leaves, Stem	Medicine, Food, Fuelwood
212	Anjili	<i>Artocarpus hirsutus</i>	VU/ G/ EN	Fruit, Stem, Leaves	Medicine, Food, Fuelwood
213	Kanan Chakka(KattuP ilavu)	<i>Artocarpus lacucha</i>	R	Fruits	Food, Fuelwood
214	Peral	<i>Ficus benghalensis</i>		Bark	Medicine
215	Earuma nakku	<i>Ficus hispida</i>		Stem, Leaves	Fuelwood, Fodder
216		<i>Ficus microcarpa</i>		Bark	Medicine
217	Athy	<i>Ficus racemosa</i>		Bark	Medicine
		<i>Musaceae</i>			
218	Kallu vazha	<i>Ensete superbum</i>	EN	Fruits, Seeds	Medicine, Food
219	Kattu vazha	<i>Musa acuminata</i>	R	Fruits, Seeds	Medicine, Food
220	Njara vazha	<i>Musa sapientium</i>		Fruits	Food
		<i>Myristicaceae</i>			
221	Chorappanu	<i>Knema attenuata</i>	LR- NT/ G	Aril,	Medicine
222	Panampoovu (Ponnampoovu)	<i>Myristica dactyloides</i>		Fruits, Seeds, Aril	Fodder, Paint
		<i>Myrsinaceae</i>			
223	Vizhal	<i>Embelia ribes</i>	LR- NT/ R	Seeds	Medicine
224	Kirithy	<i>Maesa indica</i>		Bark	Medicine
		<i>Myrtaceae</i>			

225	Eucaly	<i>Eucalyptus globulus</i>		Stem	Medicine, Building construction
226	Paera	<i>Psidium guajava</i>		Fruits	Food
227	Njara	<i>Syzygium caryophyllatum.</i>		Fruits	Medicine
228	Njaval	<i>Syzygium cumini</i>		Fruits	Food
229	Kattuchampa	<i>Syzygium mundagam</i>		Fruits, Stem	Food, Fuelwood
230	Kattunjara	<i>Syzygium spp.</i>		Fruits, Stem	Food, Fuelwood
		<i>Nyctaginaceae</i>			
231	Thazhuthama	<i>Boerhaavia diffusa</i>		Plant, Root	Medicine, Fodder, Food
		<i>Oleaceae</i>			
232	Kattumulla	<i>Jasminum flexile</i>		Flower	Medicine
233		<i>Myxopyrum smilacifolium</i>		Leaves, Flowers	Medicine
234	Edana	<i>Olea dioica</i>		Stem, Leaves	Fuelwood, Fodder
		<i>Orchidaceae</i>			
235	Chathan kizhangu			Tuber	Medicine
		<i>Oxalidaceae</i>			
236	Nilamthengu	<i>Biophytum sensitivum</i>		Plant	Medicine, Fodder
237	Puliyarila	<i>Oxalis corniculata</i>		Plant	Medicine
		<i>Pandanaceae</i>			
238	Kaitha	<i>Pandanus thwaitesii</i>		Leaves	Weaving mats
		<i>Passifloraceae</i>			
239	Kommandy (bongikkai)	<i>Passiflora edulis</i>		Fruits	Food
		<i>Pedaliaceae</i>			
240	Kattellau	<i>Sesamum radiatum</i>		Seeds, Plant	Medicine, Fodder
		<i>Periplocaceae</i>			
241	Athyaal (Amrithapala)	<i>Janakia arayalpathra</i>	EN/R	Tuber	Medicine
		<i>Piperaceae</i>			
242	Kattukurumula	<i>Piper galeatum</i>		Stem, Leaves,	Medicine, Food

	ku			Fruits	
243	Kattuvetta	<i>Piper sp.</i>		Leaves	Medicine, Chewing
244	Kattukurumula ku	<i>Piper spp.</i>		Stem, Leaves, Fruits	Medicine, Food, Fish poison
	Kurumulaku	<i>Piper nigrum</i>			
		<i>Poaceae</i>			
245		<i>Apluda mutica</i>		Plant	Fodder
246		<i>Brachiaria repans</i>		Plant	Fodder
247	Poochakkuru	<i>Coix lachryma jobi</i>		Seeds, Plant	Fodder
248	Injippullu	<i>Cymbopogon flexuvous</i>		Plant	Medicine, Oil
249	Karuka	<i>Cynodon dactylon</i>		Plant	Medicine, Rituals
250	Kallan mula	<i>Dendrocalamus strictus</i>		Seeds	Medicine
251	Attudarbha	<i>Desmostachya bipinnata</i>		Root	Medicine, Fodder
252		<i>Oplismenus compositus</i>		Plant	Fodder
253	Annoottynellu	<i>Oryza meyeriana</i>		Fruits	Medicine, Fodder
254	Nellu	<i>Oryza sativa</i>		Fruits	Medicine, Fodder
255		<i>Themeda triandra</i>		Plant	Fodder
256	Ramacham	<i>Vetiveria zizanioides</i>		Root	Medicine, Fodder
		<i>Polygalaceae</i>			
257		<i>Polygala wightiana</i>		Plant	Medicine
		<i>Ranunculaceae</i>			
258	Mookippody vally	<i>Narvelia zeylanica</i>		Root	Medicine
		<i>Rhamnaceae</i>			
259	Vembada	<i>Ventilago madraspatna</i>		Bark	Medicine
260	Thodaly	<i>Ziziphus oenoplia</i>		Plant, Root	Medicine
261	Vanthodaly	<i>Ziziphus rugosa</i>		Fruits	Medicine, Food
		<i>Rhizophoraceae</i>			
262	Vallavam	<i>Carallia brachiata</i>		Stem	Fuelwood

		Rubiaceae			
263	Manjakkadam u	<i>Adina cordifolia</i>		Bark, Flowers	Medicine
264	Kadambu	<i>Neolamarkia cadamba</i>		Bark, Stem	Medicine, Fuelwood
265	Karintharavu	<i>Borreria hispida</i>		Plant	Medicine
266	Thetty	<i>Ixora coccinea.</i>		Fruits	Food, Rituals
267	Manjanathy	<i>Morinda pubescens</i>		Fruits	Medicine
268	Vellilam	<i>Mussaenda frondosa</i>		Leaves	Shampoo, Fodder
269	Parppidakappu llu	<i>Oldenlandia corymbosa</i>		Plant	Shampoo, Fodder
270		<i>Ophiorrhiza mungos</i>		Plant	Medicine
271	Pavatta	<i>Pavatta tomentosa</i>		Root, Leaves	Medicine
272	Kara	<i>Randia sp.</i>		Fruits	Food
273	Manjatty	<i>Rubia cordifolia</i>		Root	Medicine
		Rutaceae			
274	Kattunarakam	<i>Atlantia wightii</i>		Fruits, Leaves	Food, Medicine
275	Panji	<i>Glycosmis pentaphylla</i>		Leaves and Stem	Medicine
276	Kariveppila	<i>Murraya koenigii</i>		Leaves	Medicine, Food
		Sapindaceae			
277	Uzhinja	<i>Cardiospermum helicacabum</i>		Plant	Medicine
278	Chempoovam (Pasakkotta)	<i>Dimocarpus longan</i>		Stem	Fuelwood
279	Poovanam	<i>Schleichera oleosa</i>		Bark, Fruits, Seeds	Fuelwood, Fodder
		Sapotaceae			
280	Iluppa	<i>Madhuca nerifolia</i>		Fruits, Stem	Food, Fuelwood
281	Elenji	<i>Mimusops elengi</i>		Fruits	Medicine, Food
		Scrophulariaceae			
282	Kallurikky	<i>Scoparia dulcis</i>		Plant	Medicine
		Simarubiaceae			

283	Perumaram	<i>Ailanthus exelsa</i>		Bark, Leaves	Medicine
		<i>Smilacaceae</i>			
		<i>Smilax zeylanica</i>	VU/ R	Roots	Medicine
		<i>Solanaceae</i>			
284	Pukaila	<i>Nicotiana tabaccum</i>		Leaves	Smoking, Chewing
285	Manathakkali	<i>Solanum nigrum</i>		Plant, Fruit, Leaves	Medicine
286	Anachunda	Solanum sp.		Fruits	Food
287	Kothychunda	Solanum sp.		Fruits	Food
288	Chunda	Solanum torvum		Fruits	Food
		<i>Sterculiaceae</i>			
289	Edampiri valampiri(Vizh ukkan)	<i>Helicteris isora</i>		Stem fibre, Stem,Fruits	Medicine, Rope, Fuelwood, Fodder
290	Elluttypattah	<i>Pterospermum rubiginosum</i>	EN	Bark	Medicine
291	Thondy	<i>Sterculia balanghas</i>		Fruits	Food
292	Vakka (muruthan)	<i>Sterculia villosa</i>		Stem fibre	Fibre, Fuelwood
		<i>Symplocaceae</i>			
293	Pachotty	<i>Symplocos cochinchinensis</i>	LR- NT/ R	Bark	Medicine
		<i>Theaceae</i>			
294	Thaeila	<i>Camellia sinensis</i>		Leaves	Beverage
		<i>Thymeliaceae</i>			
295	Akil	<i>Dysoxylum malabaricum</i>		Bark	Medicine
		<i>Tiliaceae</i>			
296		<i>Grewia microcos</i>		Leaves	Medicine
297	Unnam	<i>Grewia tiliaefolia</i>		Fruit, Bark	Fodder, Rope
		<i>Trichopodiaceae</i>			
298	Arogyappacha (chathanga)	<i>Trichopus zeylanicus</i>	R	Plant, Fruits	Medicine, Food

		<i>Umbelliferae</i>			
299	Vatham kolly	<i>Heracleum candolleanum</i>		Stem, Leaves	Medicine
		<i>Verbenaceae</i>			
300	Peruvalam	<i>Clerodendrum infortunatum</i>		Young Leaves, Plant	Medicine, Fodder
301	Kumbil	<i>Gmelina arborea</i>		Stem, Leaves	Fuelwood, Fodder
302	Poochedy	<i>Lantana camera</i>		Fruits, Stem	Food, Fodder
303	Myla	<i>Vitex altissima</i>		Fruits, Stem	Medicine, Fuelwood
304	Karinochi	<i>Vitex nigundo</i>		Plant	Medicine
		<i>Violaceae</i>			
305	Orilathamara	<i>Ionidium suffruticosum</i>		Plant	Medicine
		<i>Vitaceae</i>			
306	Seberavally	<i>Ampelocissus tomentosa</i>		Roots	Medicine
		<i>Xanthophyllaceae</i>			
307	Mottal	<i>Xanthophyllum arnottianum</i>		Bark	Medicine, Fuelwood
		<i>Zingiberaceae</i>			
308	Chittaratha	<i>Alpina calcarata</i>		Rhizome	Medicine
309	Kolinji	<i>Alpina galanga</i>		Rhizome	Medicine
310		<i>Amomum hypoleucum</i>		Rhizome	Medicine
311	Chenthy	<i>Costus speciosus</i>		Rhizome	Medicine
312	Manga inchi	<i>Curcuma amada</i>		Rhizome	Medicine, Food
313	Kasthurymanja I	<i>Curcuma aromatica</i>		Rhizome	Medicine, Cosmetic
314	Kachooram	<i>Curcuma zeodaria</i>		Rhizome	Medicine
315	Ealakka	<i>Elettaria cardamomum</i>		Fruits	Food, Medicine
316	Kacholam	<i>Kaempferia galanga</i>		Rhizome	Medicine
317		<i>Zingiber neesatum</i>	EN/ R	Rhizome	Medicine
318		<i>Zingiber zerumbet</i>		Rhizome	Medicine
319		<i>Zingiber wightianum</i>		Rhizome	Medicine

320	Thookkuthaen	Apis sp.		Honey	Medicine, Food
321	Cheruthaen	Dammer bee		Honey	Medicine, Food
322	Theepacha			Bark	Fish poison
323	Kakklikka			Fruits	Fish poison
324	Kanji			Fruits	Food
325	Njara vazha			Fruits	Medicine
326	Thommanpulichy			Fruits	Food
327	Karimthumba			Plant	Medicine
328	Kattadapathiy an			Rhizome	Medicine
329	Mai vally			Bark	Medicine
330	Neeruvatty kizhangu			Tuber	Medicine
331	Pelayan kadu			Rhizome	Medicine, Food
332	Thalyppoovu			Flower	Medicine

KEY

VU/R	- Vulnerable Regionally
VU/G	- Vulnerable Globally
EN/R	- Endangered Regionally
EN/G	- Endangered Globally
CR/R	- Critically Endangered
LR-LC	- Low Risk, Least Concerned
LR-NT/R	- Low Risk, Near Threatened, Regionally
LR-NT/G	- Low Risk, Near Threatened, Globally
LR-LC/R	- Low Risk, Least Concerned, Regionally
DD	- Data Deficient

Notes to readers

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