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Biodiversity Profile of Periya, Palakuda and Potuvil Lagoon System of Ampara District

The World Conservation Union (IUCN) Sri Lanka

March 2009

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Acknowledgement

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Research Team

The task would not have been accomplished if not for the efforts of the dedicated research team comprising of the following members:

Mr. Sarath Ekanayake (Flora Ecologist)
Mr. Sampath De A. Goonatilake (Fauna Ecologist, Archaeology expert)
Mr. Naalin Perera (Fauna Ecologist)
Mr, Dilup Chandranimal (Flora Ecologist)
Mr. Sameera Karunarathna (Fauna Ecologist)
Mr. Anad Navaratneraja (Environment protection expert)

Executive Summary

A study was conducted in Periya-kalapuva, Palakuda, Potuvil lagoon wetland system and immediate surrounding area in the coastal zone of Ampara disttrict in order to document the biodiversity profile (basic structure, composition and functions) of the area for facilitating resuorce management. The results showed the presence of biologically diverse habitats in many different aquatic and terrestrial systems. This biological diversity has resulted in the diversity of landscapes, climatic conditions and human impacts. The key ecosystem types recorded there include Forest related ecosystems: Tropical dry mixed evergreen forests (highly fragmented), Tropical thorn frosts (highly fragmented),Riverine forests, Grasslands; Coastal and marine ecosystems; Mangroves,Sand dunes and beaches, Lagoons; Agricultural ecosystems: Paddy lands, Small crop holdings,Coconut plantations and Home gardens. Botanical explorations resulted in recording 315 higher plant species falling under different categories; Endemics(2), Indigenus (242), Exotic (71), Medicinal(159),Food plants (104) and Invasive Alien Species (9). No plant species was found to be under threatened category. Similarly the diversity of fauna was significant; Butterflies (50 species), Dragonflies(17species), Fish (35 species), Amphibians (14 species), Reptiles (37 species), Birds (102 species) and Mammals (22 species).

Biodiversity profile of the Periya-kalapuva, Palakuda, and Potuvil (PPP) lagoon systems

Chapter 1

Introduction and objectives

1.1 Introduction

An introduction to the project: This biodiversity profile of PPP is produced in conjunction with POST-TSUNAMI ECOSYSTEM RESTORATION PROJECT, SRI LANKA - AMPARA DISTRICT (CIDA/IUCN Ampara Project / Project number: A-032830/ GL Acct/CC/fund: 52302/0300/4118/Vendor: 1001212).Implementation of the Post-Tsunami Ecosystem Restoration Project funded by CIDA was commenced in June 2007. Its primary objective is to restore the ecosystems in the Ampara district in the Eastern province of Sri Lanka, which were affected by the 2004-December Indian Ocean Tsunami and enhance livelihoods of the vulnerable communities with emphasis on women. The Project partly covers the area of jurisdiction of six Divisional Secretary Divisioins[1] (Kalmunai, Akkarapattu, Alayadivembu, Thirukkovil, Pottuvil and Lahugala) five Pradesheeya Sabhas[2] (Kalmunai, Akkarapattu, Alayadivemby, Thirukkovil and Pottuvil). Main interventions of the Project are confined to the Periyakalapu lagoon and surrounding areas in Thirukkovil and Alayadivembu DS divisions.

At the time of project planning south-west part of the Periyakalapu was not accessible owing to the conflict situation. Subsequently since the government control was restored in all parts of the Eastern province, this part of the Periyakalapu was also included for interventions.

The goal of the Project is to contribute to the outgoing overall rehabilitation programme of the Government of Sri Lanka by assisting in the restoration of ecosystems and livelihoods in the eastern coastal region that were affected by the tsunami to enable the communities to move beyond their pre-tsunami poverty levels. The Project envisages restoring the long-neglected and tsunami affected ecosystems in the project area and establishing a sustainable management mechanism with the participation of the local community organizations.

With the Inception report, the project was launched in July 2007, field implementation however commenced in September 2007 with the establishment of the Field Project Office. Project contract was originally signed with IUCN Canada Office where IUCN Sri Lanka (IUCNSL) was the sub-contractee. With the cessation of IUCN Canada Office in June 2008, IUCN Asia Regional Office became the contractee with CIDA for the project. IUCNSL continued to be the sub-contractee.

[1] A district comprise several Divisional Secretary divisions (DS divisions) each administered by a Divisional Secretary (DS).

[2] Pradeshiya Sabha (Divisional Council) is the smallest local authority with elected members.

Site description: The biodiversity investigation was carried out covering three important lagoons of the Ampara district – Periya-kalpuwa, Palakuda and Potuvil lagoons (see figure 1.1).

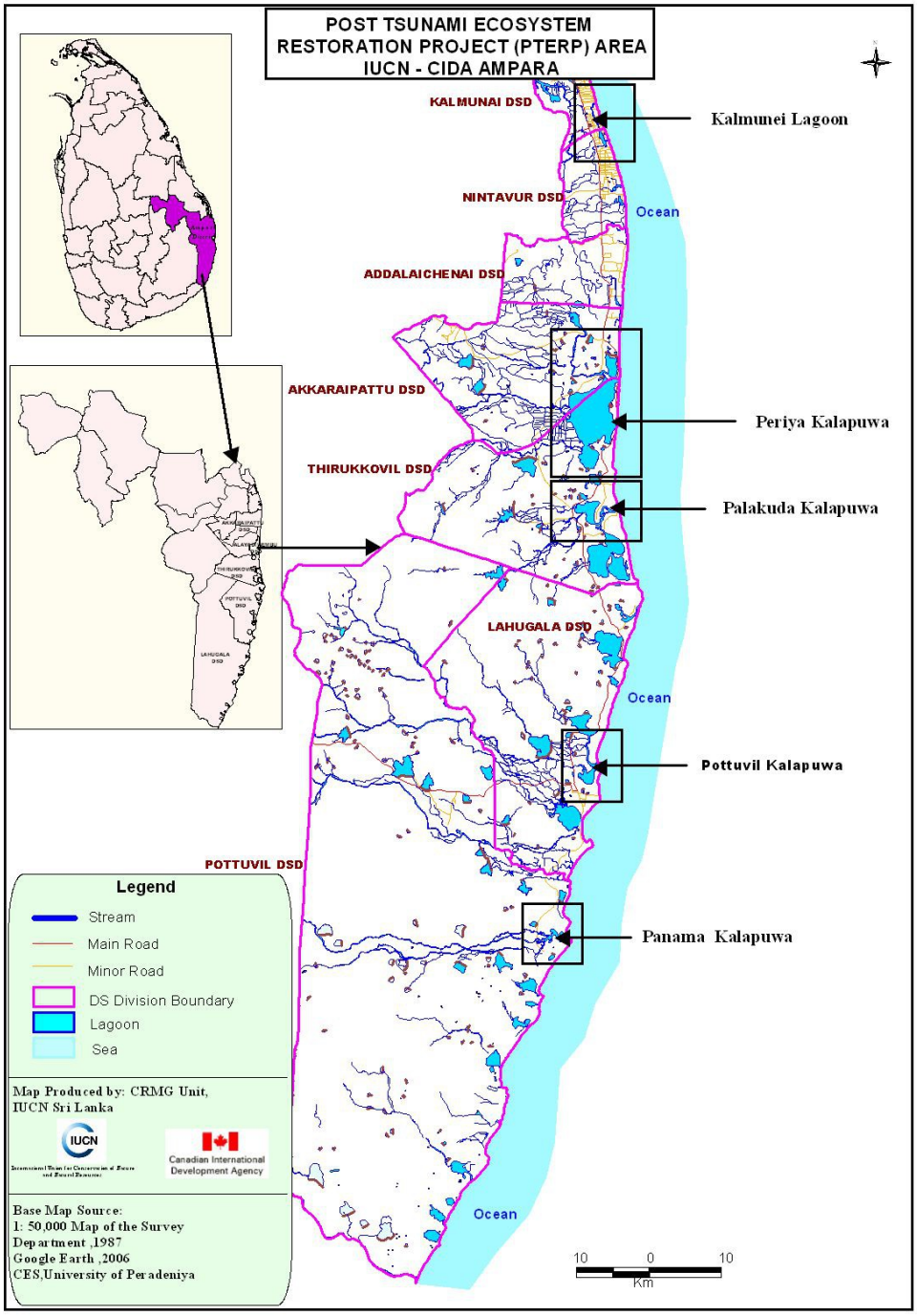

Figure 1.1: Locations of – Periya-kalpuwa, Palakuda and Potuvil lagoons.

Periya-kalapuva: This is the most northern site of the study points and largest lagoon system within the area. It lies 7º 10' 11.55" NL and 81º 50' 36.77" EL bordering the eastern coast belt by small stretch of sand dunes.

Palakuda: Palakuda was situated approximately 9km southwards of the Periyakalapuwa lagoon system and lies 7º 05' 09.87" NL and 81º 50' 38.98" EL.

Potuvil lagoon: Potuvil lagoon connected with sea from the Potuvil point is about 22km south of the Palakuda lagoon system, about 6º 53' 28.84" NL and 81º 50' 13.37" EL.

Physical Characters:

Climate: The study area belongs to Dry Zone Low country agro-ecological regions of Sri Lanka and rainfall variability is also a pronounced feature of the region. The annual rainfall 75% expectancy value is >900 mm (Panabokke, 1996).
Soil: The coastal flat terrain of the study area consists with Regosols on recent beach dune sands. Inland flat terrain consist with mixed of Solodized Solonetz, Solonchaks and soils on recent marine calcareous sediments, Redish brown earths Non-calcic Brown soils and low humic grey soil, and alluvial soils of variable drainage and texture (Panabokke, 1996)
Geomorphology: Residual landforms become exceptional near the coast of Periya – kalapuva and Palakuda area. Instead flood plains, with distributary systems that commence as high above sea level as 35m, and as far from the coastline as 25km, and other features such as river terraces, large lakes and lagoons predominate. Sand dunes in the Periya-kalapuva area diminish, because during the dry season when sand is most readily mobilised winds blow offshore (Swan, 1983). The coastal line consists of barrier beaches of varying widths, which increase in the northern part of the study area. Those further south have undergone considerable recession and re-development. Two reefs of beach rock, an outer and an inner, run northwards from Tirukkovil area, which is between the Periyakalapuwa and Palakuda lagoon (Swan, 1983). The coastal plan shape suggests that the coastline has not attained substantial stability in the face of the prevailing shore processes and that it is erosion prone in places. The Red and yellow latosols similar to those in the north and northwest of the island cover a small area around the Potuvil lagoon (Swan, 1983).
Hydrology: Periyakalapuwa watered by several rivers such as *Tillial Aru*, *Neethai Aru* and *Talipola Aru*) flowing from Northwest, western and Southwestern side. Palakuda lagoon watered by two major rivers *Rufuskulam Aru* and *Kangikaidichi Aru* and connected with *Mulliadi Kalapuva* from southward. Potuvil lagoon is connected with *Ureni kalapuva* from north end and watered by irrigation channels of *Rotakulama* and *Kujua Odi*, which is a tribute of *Karada Oya*. Threes tree lagoons connected with ocean during the peak of flood season (November-December) of Northeast Monsoon.

Historical aspects:
The area was civilized since 3rd centaury BC and large number of ruins belongs to ancient Buddhist monastic were recorded around the area.
Potuvil area: At "line-malei" (so-called because an old survey line runs by it) a small rocky hill about 4km northwest of Potuvil point, there are inscriptions by three early kings, *Bhatikabaya* (22BC-7AC), *Mahadatika mahanaga* (7-19AD), and *Kanittha Tissa* (167-186AD) (Paranavitana, 1983). The site is named Sipavatha Vihara in all the inscriptions, a name unknown from the chronicles. In the inscription of *Kanittha Tissa* the grantor was the *Ratiya* (District administrator) who administrated the division named *Huvanaka*, which is identical with *Huvaca-kannika* mentioned in the *Mahavansa* as a district in *Rohana* in the 1st century. If *Huvaca-kannika* was a sub-division of the area afterwards known as *Huvaratta* (present *Uva*), then *Huvaratta* extended in the 1st century as far as the sea near Potuvil(Nicholas, 1963). Several ancient Monastic ruins can be seen further south of the Potuvil lagoon are *Muhudu maha Viharaya, Ulla*, and *Satravela*. During the survey period large number of pottery fragments (BRW- Black and

Red wear; RW- Rare mica corded Red wear) found from the both bank of the Potuvil lagoon and point.

Periya-kalapuva and Palakuda area: According to chronicles, Ministers of King Parakramabahu (12AD) *Lankadhikarins Kitti*, *Bhuta* and *Manju*, starting from Valivasaragama, a meeting-place of many roads outside and to westward of the Digavapi district, marched eastward and after fighting at *Savanaviyala*, a strongholds with twelve gates, they turned northward up the coast, captured *Gomayagama* and *Chaggama* (present *Sakamam* which situated in-between *Palakuda* and *Periyakalapuwa*) and arrived at *Balapasana* (between *Sakamam* and *Malvatta*i) (Nicholas, 1963). Ruin Stupas can be seen on the top of the rocky hills around the Periyakalapuva and *Sakamama*. An isolated rock shelter with drip ledge cutting also found nears the *Kudinilam* road.

Scope of the Project

This biodiversity profiling work attempt to the collection and/or collation of core information on ecosystem types and species found in and around PPP in order to facilitate management, including the development of an information base for monitoring activities of this valuable landscape. Further, this biodiversity profile would be extremely useful in the preparation of management plans for scientific management of the PPP.

The objective of this project is to identify the various habitats/ecosystems types and species of plants and animals within the wider PPP landscape, which contribute to the sustenance of livelihoods and valuable ecosystem services of this coastal landscape in Sri Lanka. It would enable the identification of unique and endangered plant and animal species and serve to document the existing conservation issues. The information gathered under the above objectives would be extremely useful in preparing a detailed management plan for the PPP, whilst also contributing to the promotion of eco-tourism and environmental communication.

The present study focused on inventorying field level information pertaining to the flora, fauna and habitats of PPP. The taxa involved include higher plants (mostly), birds, mammals, fish, amphibians and reptiles. This is expected to facilitate future planning for development and resource management through appropriate analysis and synthesis of the biological information. Hence this exercise is essentially a precursor study for local level resource management in PPP, and as such, no attempt has been made to provide detailed analyses and recommendations, which are beyond the scope of this work.

1.5 Specific Objectives of the study

The present study focussed on the following specific objectives:

- Document the terrestrial and aquatic habitat/ecosystem types within PPP.
- Document the structure and composition of key vegetation types within PPP.
- Document the species composition and relative abundance of selected key habitats of PPP.
- Document the species with known use values for livelihoods.
- Document the current threats to biodiversity within PPP and recommend provisional remedial measures.

Chapter 2

Study method

A literature survey was conducted to gather published data on the biodiversity of the study area. However, as no specific literature was found of the site (Periya-kalapuva, Palakuda, and Potuvil lagoon systems - PPP) focusing on the aspects under consideration. Therefore, several field visits were made to carry out a reconnaissance survey of the area in order to select sampling points and appropriate sampling techniques. Direct and indirect methods also used to establish the document the fauna and flora of the site

Study of plant life: For the each sites, general area surveys were carried out in order to document the flora in different habitat types. In addition, major ecological services provided by major habitat types, threats and human disturbances associated with those habitat types were also noted. Lists of plants were prepared for the general area and with reference to plots laid in different locations covering the key habitat types (Table 2.1). Abundance of plant species in different sub plots were documented through commonly applied visual estimation where percentage cover of different species were noted and the mean values for each site was aligned with Braun-Blanquet cover values; <1% cover, 1-5% cover , 6-25% cover, 26-50% cover, 51-75% cover and 76-100% cover (cited in Southerland, 1997) and indicated as ABCDE&F respectively. Species data were presented as stand alone floristic composition of different sites in order to understand the floristic diversity of different habits and diversity *within* a certain type of habitat. Altogether, 16 sites were sampled in line with available time and resources. Several plant specimens were collected and identified using available relevant taxonomic keys in the published guides (Table 2.2) and comparison with National Herbarium floral specimens.

Table 2.1 Sampling plots observed in different habitat types.

Plot No.	Plot sizes and habitat type.
1	Periya lagoon, Aquatic vegetation (lentic flora) of lagoon, 2mx2m, 10 sub plots
2	Periya lagoon, Grassland – wet type, 1mx1m, 10 sub plots
3	Periya lagoon, Thorn scrubs, 5mx5m, 5 sub plots
4	Periya lagoon, Thorn scrubs, 5mx5m, 5 sub plots
5	Periya lagoon, Grassland – dry type, 1mx1m, 10 sub plots
6	Periya lagoon, Beach vegetation, 2mx2m, 10 sub plots
7	Palakuda lagoon, Grassland – wet type, 1mx1m, 10 sub plots
8	Palakuda lagoon, Mangroves, 5mx10m, 5 sub plots
9	Palakuda lagoon, Beach vegetation, 2mx2m, 10 sub plots

10	Potuvil lagoon, Mangroves, 5mx10m, 5 sub plots
11	Potuvil lagoon, Sand dunes, 5mx10m, 5 sub plots
12	Periya lagoon, Dry evergreen forest (disturbed), 10mx10m, 5 sub plots
13	Periya lagoon, Grassland – wet type, 1mx1m, 10 sub plots
14	Potuvil lagoon, Grassland – wet type, 1mx1m, 10 sub plots
15	Periya lagoon, Aquatic vegetation (lentic flora) of lagoon, 2mx2m, 10 sub plots
16	Periya lagoon, Aquatic vegetation (swampy/marshy) of lagoon, 2mx2m, 10 sub plots

Figure 2.1 A sampling plot of 1mx1m in grassland habitat.

Study of animal life: Fauna sampling also carried out parallel to the floral transects. Visual Encounter Survey (VES) methods were used to record faunal species. Both direct and indirect observations (animal signs such as pellets, tracks and food remains) were made within transects. In addition, reliable evidence from surrounding villagers were also taken and verified through field guides (table 2) and photos. Specific sampling techniques are summarized below in table 2.

Table 2.2: Key references used for identification and nomenclature of species

Group	Source
Flora	Dassanayake and Fosberg (eds.) (1980 - 1991); Dassanayake, Fosberg, and Clayton, (eds.) (1994 - 1995); Dassanayake, and Clayton (eds.) (1996 - 2004).
Fish	Pethiyagoda (1991), De Bruin, Russell and Boguscha (1994), Jayaram (1999), Perhiyagoda (2006*)*.
Herpetofauna (Amphibians and Reptiles)	Das and De Silva (2005); Manamendra-Arachchi and Pethiyagoda (2006); Somaveera (2007)
Birds	Harrison and Worfolk (1999); Kotagama (2006)
Mammals	Phillips (1935); Cobet & Hill (1992); Bates and Harrison (1997), Weerakoon and Goonatilake (2006)
Butterflies	D'Abrera (1998); Woodhouse (1950); Perera and Bambaradeniya (2006)

Table 2.3: Sampling techniques used to document fauna

Group	Method
Fish	Cast netting, Fisherman catch
Herpetofauna (Amphibians and Reptiles)	50m x 5m belt transects, Data was taken only daytime.
Birds	200m radius point transects (direct observations & calls)
Mammals	100m x 5m belt transects, direct and indirect observations Communication with villagers and confirmed by field guides.
Butterflies	100m x 10m belt transects

The species status (indigenous, exotic, endemic, migrant ect.) and conservation status (Criticaly endangered, endangered, vulnerable, near threatened ect.) was recorded according to available above publications and National status report (IUCN SL and MENR, 2007).

Chapter 3.

Results and discussion on ecosystems and Plant life

Ecosystem diversity

The study area (Periya-kalapuva, Palakuda, Potuvil lagoon) is biologically diverse with many different aquatic and terrestrial habitats. This biological diversity has resulted in the diversity of landscapes, climatic conditions and human impacts. The key ecosystem types recorded there are as follows.

Forest related ecosystems

Tropical dry mixed evergreen forests (highly fragmented)
Tropical thorn frosts (highly fragmented)
Riverine forests
Grasslands

Coastal and marine ecosystems

Mangroves
Sand dunes and beaches
Lagoons

Agricultural ecosystems

Paddy lands
Small crop holdings
Coconut plantations
Home gardens

Those habitat types (synonymous with vegetation types) found in the (PPP) were identified and grouped according to the classification adopted in a document produced by the Ministry of Forestry and Environment (2002). In addition to the major habitat types, several sub types or deviants were identified and documented in order to accommodate site specific variations of habitats.

The structure and common plant species in each habitat type

Forest related ecosystems

Tropical dry mixed evergreen forests (highly fragmented): Some patches of tropical dry mixed evergreen forests are found towards western part of Periyakalapuwa. Those forests are highly disturbed and almost always associated with rockout crops and hence lack typical features of such forests. Vegetation is not dense and shows patchy distribution over the rocky landscape west of Periyakalapu. It is a tree dominated vegetation type with a canopy of 15m-20m, a shrub layer of 3m-4m and a ground layer consisting of herbaceous plants (upto 0.5m). Forest canopy is discontinuous and leaf fall can be observed during the dry season (July-September). Many shrubby plants have thorny or spiny structures and are well-adapted to extreme drought conditions. Understory is sparse on rocky substratum. Plants grow among the boulders, rock crevices or are fixed in soil. Ground water retention is very low since often bedrock is found beneath the thin soil layer. In certain places, the depressions formed on the open rock surface act as natural mini pools accumulating rain water and thereby contributing to the sustenance of animal life. In areas where there are caves, a host of wild animals use it as a safe abode to survive the harsh climatic conditions. Several elephants live in this rocky forested area.

Common plant species: *Ficus amplissima, Ficus mollis, Cantunaregam spinosa, Cordia dichotoma, Grewia carpinifolia, Phyllanthus maderaspatensis & Cordia curassavica*

Tropical thorn frosts/scrublands (highly fragmented): Scrublands are thick impenetrable thorny or spiny, woody vegetation growing upto 2m-5m in height. These are also found mainly west of Periyakalapuwa, associated with highly disturbed rocky habitats. Two major strata can be recognized; the shrub canopy and the layer of herbaceous (upto 0.5m) plants that grow underneath. Sometimes, there are isolated trees growing amidst scrublands. Many plants have microphyllous (small) leaves and the exposed shrubs are much branched. The ground layer abounds with herbaceous life forms as it receives direct sun light. Plant species growing in these areas are well adapted to dry conditions.
Common plant species: *Lantana camara, Opuntia monacantha, Benkara malabarica, Calotropis gigantean, Canthium coromandelicum & Phyllanthus reticulates.*

Riverine forests: This vegetation type is associated with feeder streams of PPP and usually 8m-10m wide in the flat areas on the lower reaches of rivers. Often paddy lands have invaded the potential riverine forest areas drastically reducing the extent. Vegetation height is about 15m-25m with almost a closed canopy belt of forests. Sub-canopy (10m) and shrub/herb (0.5m-3m) layers can also be distinguished. General luxuriance compared to other forests makes it more akin to a wet zone vegetation. Lianas are also an important constituent of this forest framework and constitute considerably high floristic richness. The evergreen character of these species can be attributed to the unlimited availability of groundwater throughout the year.
Common plant species: *Nauclea orientalis, Panicum repens, Polyalthia korinti, Pongamia pinnata, Syzygium cumini, Tabernaemontana divaricata & Terminalia arjuna.*

Grasslands: Grasslands have a simple vegetation structure which involves a large expanse of closely grown grassy cover ranging between 0.1m-1m in height. They generally occur in areas where the forest cover has most likely destroyed through various human activities such as agricultural expansion, constructions, fire, removal of timber, firewood gathering etc.

Grasslands are the most widely distributed terrestrial habitat type in PPP. Drier grasslands are found in outer periphery of the open area surrounding the lagoons where the land is well drained and situated on relatively higher ground. Wetter or swampy grasslands are found in relatively low level lands close to the outer margin of the water bodies. Sometimes, shallow depressions over the landscape result in wetter grasslands. Plant life varies depending on the moisture gradient of the soil along the topographical variations. Apart from those permanent type of grasslands, the fallow paddy fields surrounding PPP turn out to be dry grasslands during non-cultivated dry period of the year. Trampling and over grazing have severely affected the grassland ecosystem.

Common plant species in wet grasslands: *Cyperus bifax, Cyperus difformis, Cyperus rotundus, Eleocharis dulcis, Aeschynomene americana, Alloteropiss cimicina, Ceratopteris thalictroides, Fimbristylis miliacea, Ludwigia perennis, Panicum repens, Paspalum distichum & Phyla nodiflora.*
Common plant species in dry grasslands: *Eragrostis viscosa, Cynodon dactylon, Panicum sumatrense, Achyranthes aspera, Emilia sonchifolia, Mimosa pudica, Tephrosia purpurea, Aristida setacea & Chloris barbata,*

Coastal and marine ecosystems

Mangroves : Mangroves are salt-tolerant woody plant assemblages located along sheltered lagoons of Palakuda and Potuvil. No appreciable mangrove community was found in Periyakalapu lagoon. Well developed mangroves generally reach upto 5m-10m while some species such as *Rhizophora mucronata* may grow beyond that height. In mature stands, the stratification is limited almost to a single layer of true mangrove tree species forming a dense canopy; e.g *Rhizophora mucronata* and *Bruguiera gymnorhiza*. Mangroves have developed characteristic structural features that enable them to live under extreme edaphic conditions; shallow water, thick mud, water logged saline soil, loose soil, heavy clays containing a large amount of organic matter, daily fluctuation of salinity etc. These include various anatomical and physiological features such as stilt roots, prop roots or knee roots for anchorage e.g *Bruguiera gymnorhiza*, succulent leaves for storage of water e.g. *Excoecaria agallocha*, the ability to remove excess salt from leaves e.g. *Rhizophora mucronata*, shiny leaves for light reflection e.g. *Lumnitzera racemosa* and a viviparous mode for seed germination e.g. *Rhizophora mucronata*. In addition to true mangrove stands, some patches also possesses a mixture of back mangrove species and are therefore can be referred to as mangrove mixed communities e.g. *Excoecaria agallocha* and *Lumnitzera racemosa*. Products and services of mangrove habitats are extreamly important in sustaining the livelihoods of coastal communities of PPP.

Common plant species: *Bruguiera gymnorhiza, Rhizophora mucronata, Excoecaria agallocha, Aegiceras corniculata, Dolichandrone spathacea, Heritiera littoralis & Lumnitzera racemosa*

Sand dunes and beaches : Sand dune and beach vegetation are found in the eastern part of PPP, in places where the land is sloping towards the sea. The physiognomy and floristic composition of the beach flora and associated sand dunes (on higher ground) depend on the extent and steepness of the shore and the degree of ground stability. The vegetation is located in the zone beyond the direct impact of waves and tides and supports a shrub cover (2m-3m) , scattered creepers (0.5m) and small shrubs(1m) which help consolidation of surface sandy soil by restricting wind induced erosion and by providing resistance to removal of sand by occasional sea water. Trees on higher ground (sand dunes) are characterized by stuntedness, a feature that can be attributed to the impact of strong wind action, salt spray and insolation. Depending on the steepness and width of the shore, the beach vegetation zone may extend upto 50m.

Common plant species in beach vegetation: *Ipomoea pes-caprae, Premna latifolia, Spinifex littoreus, Cocos nucifera, Cordia dichotoma & Cyperus rotundus.*

Common plant species in sand dunes: *Manilkara hexandra, Canthium coromandelicummm, Drypetes sepiaria, Ficus amplissima, Maba buxifolia, Memecylon umbellatum, Tarenna asiatica & Cassine glauca*

Lagoons: Periyakalpu is the largest lagoon of PPP wetland system characterized by almost absence of mangroves adapted to tidal variations. In contrast, Palakuda and Potuvil lagoons have well developed mangroves in response to well functioning tidal variations. Several sub habitat types , in addition to the aquatic vegetation (lentic flora)

of the open water body, can be recognized in PPP lagoon ecosystem, which have developed as a result of different hydric conditions of habitat mosaic of the lagoons. Swamps are water logged areas, mostly emergent islets, dominated by *Typha angustifolia* and mostly pure stands are found . Marshes are areas of saturated sediments with no standing water and dominated by sedges found in pheripary of lagoons. The lentic flora of the lagoon largely consist of *Eichhornia crassipes* and *Nelumbo nucifera*. Often, such plants are found as pure stands in the habitat mosaic of lagoons.

Common plant species in lentic flora: *Azolla pinnata, Eichhornia crassipes, Nelumbo nucifera & Salvinia molesta.*

Common plant species in marshes/swamps: *Typha angustifolia, Eleocharis dulcis, Schoenoplectus supinus, Fimbristylis cymosa, Panicum repens, Aeschynomene Americana, Bacopa monnieri & Cyperus rotundus*

Agricultural ecosystems: PPP are surrounded by human settlements to a larger extent. There exist several types of man made ecosystem types, namely, paddy lands, small crop holdings, coconut plantations and tree dominated home gardens. Paddy lands and small crop holdings can be classified as open type ecosystems while coconut plantations and tree dominated home gardens are closed canopy (20m-25m) ecosystems. Almost all home gardens are dominated by coconut. Although natural plant biodiversity is poor in these systems, a number of crop varieties representing our agro biodiversity heritage are surviving in association with traditional communities. Among them genetic diversity represented by chilli, banana, coconut and mango are noteworthy. The role played by well adapted dry zone crop biodiversity is key to sustaining the livelihoods of local people associated with PPP.

Common plant species: *Azadirachta indica, Carica papaya, Ceiba pentandra, Cocos nucifera, Gliricidia sepium, Mangifera indica, Manihot esculenta, Moringa oleifera, Musa x.paradisiaca, Oryza sativa, Tectona grandis & Terminalia catappa.*

Diversity of plants

The floristic survey resulted in the recording of 315 flowering plant species and among them 242 were indigenous plants. Among them, 2 plants categorised as endemic while

no plants were documented as threatened. Presence of 9 Invasive Alien plant species recognized as a biological threat to the biodiversity of the area. Many plant species were noted as important for livelihoods – 104 food plans and 159 medicinal plants. The complete set of information on flora is given in the annexes 1-2. These species were recorded both within and outside sampling plots.

Plants and People

Beneficial plants:

Plants are the basis of healthy ecosystems that perform many functions, including purifying air and water. As far as considered the rural community associated with PPP, the role played by plants in their daily lives and livelihoods is of paramount importance. Plants provide those people with food, shelter, timber, firewood, medicine and fodder as essential ingredients for the social sustenance. Some of those plants species are well known domesticated agricultural crops while others are lesser known wild plants. During the survey on socio-economic plants, particular attention was paid to document useful plants growing in wild with little or no human care, in order to substantiate the existing natural plant biodiversity with utility value. Some important categories are as follows.

Food plants: Wild food plants growing in different habitats are harvested for various human food preparations and nutritional or medicinal values. They are relevant in household food security and nutrition. They are inexpensive and easy food source, often requiring low labour inputs. Sometimes they represent as food sources during seasonal food shortage periods, and provide good nutritional supplies. In some cases, wild food plants have some economic value in local markets. Wild food plants are relevant in the food security and nutrition of rural people living in conflict prone areas with frequent droughts and crop failures due to many other reasons. Wild food plants suffer from negligence and, official agricultural programmes view their use as a "primitive" food security practice, paying very little attention. Hence, biodiversity initiatives around wild food plants and sustainable rural nutrition programmes are totally absent in the area. There is poor scientific knowledge and awareness on the values of wild food plants, such as their nutritional qualities, ecological features, and local uses. During the survey xx number of plants were recorded as edible plant species (see annex for documented edible plants in PPP area).

Medicinal plants: Medicinal plants are also important components of the local flora, and valuable parts of the ecosystem. The use of plants for medicinal purpose is one of a number of practices developed by traditional local people and for a long time plants have played a key role in health care systems in the PPP area. Interest in medicinal plants as a re-emerging health aid has been influenced by the rising costs of western medicine in the maintenance of personal health. Presently, most of the medicinal plant species used in local medicine are harvested wildly. The first beneficiaries of the conservation and sustainable use of wild medicinal plants should be the rural communities of PPP area and whose traditional knowledge and respect for those medicinal resources has been in existence for many years. During the survey xx number of plants were recorded as medicinal plant species (see annex for documented medicinal plants in PPP area).

Fire wood and timber: Fire wood provides the main source of energy for cooking as expressed by many householders. Traditional source of fire wood in the area has been the tree dominated home gardens, degraded forests, scrublands and mangroves in the PPP

area. Although, fire wood collection is prohibited in state lands, the practice continues unabated. Often, healthy young trees before reaching maximum productivity level are harvested as a wasteful practice.

Timber is harvested from home gardens and illegally from state lands including mangroves. Sawn timber as well as pole woods are heavily extracted for construction of houses, making furniture and fencing works. A selection of widely used fire wood and timber species are as follows.

Common plant species used for fire wood and timber: *Azadirachta indica, Bauhinia racemosa, Borassus flabellifer, Cocos nucifera, Drypetes sepiaria, Gliricidia sepium Leucaena leucocephala, Mangifera indica, Manilkara hexandra, Syzygium cumini Tectona grandis, Terminalia arjuna, Terminalia catappa & Thespesia populnea*

Fodder plants: Rearing of livestock is an important part of local subsistence economy. People need livestock to produce milk, meat and manure. In addition, ploughing and pulling of bullock carts are still to be seen using cattle or buffalo. Cattle, buffalo and goats are the main types of livestock that need fodder plants. Free grazing is considered the most appropriate way of feeding livestock and stall feeding is not practiced except for goats in some instances. Overgrazing is a common problem and usually animals are grazed in dry grasslands, marshes, swampy grasslands, fallow paddy lands and road sides. Some of the favoured fodder plants are as follows.

Common fodder plants: *Alloteropiss cimicina, Commelina diffusa, Cyanotis obtuse, Cynodon dactylon, Cyperus rotundus, Desmodium heterophyllum, Desmodium triflorum, Emilia sonchifolia, Eragrostis ciliaris, Fuirena ciliaris, Gliricidia sepium, Ischaemum ciliare, Leucaena leucocephala, Mimosa pudica, Murdannia spirata, Musa x.paradisiaca, Panicum repens, Panicum sumatrense, Paspalum distichum, Pongamia pinnata & Vernonia cinerea*

Nuisance plants

Several species of nuisance plants are affecting people living in PPP area. Those can be sub categorized as alien invasive species, agricultural weeds and poisonous plants interfering with the productivity of water bodies and surrounding landscape sustaining the livelihoods of local communities. A selection of important nuisance plants are as follows.

Alien invasive plants: *Eichhornia crassipes, Imperata cylindrical, Lantana camara, Leucaena leucocephala, Ludwigia hyssopifolia, Pistia stratiotes, Salvinia molesta, Typha angustifolia & Xanthium indicum*

Weeds: *Achyranthes aspera, Commelina diffusa,Cyperus rotundus, Emilia sonchifolia, Fuirena ciliaris, Ludwigia perennis, Opuntia monacantha, Panicum repens, Scoparia dulcis, Sida acuta, Sida cordata, Spermacoce hispida, Tridax procumbens & Vernonia cinerea.*

Poisonous plants (veterinary poisons): *Lantana camara, Nerium oleander, Ricinus communis & Thevetia peruviana*

Chapter 4 Results and discussion on animal life

4.1 Fauna Diversity

Dragonflies: Total Number of 17 dragonflies was recorded from ecosystems associated with the three lagoons. One of the Sri Lankan largest Dragonfly species known as Elephant Emperor *Anax indicus* were recorded from Pottuwil and Periyakalapu laggon systems. 12 species of Dragonflies were recorded Periyakalapuwa lagoon system. (see annex 4 for details)

Butterflies: 50 butterfly species were recoded from the three lagoon systems. Highest diversity in term of butterfly fauna was recorded from Periyakalappuwa lagoon and total of 34 butterflies were recorded at Periyakalappuwa lagoon and surrounding ecosystems. Nymphalidae was the most diverse family and in that 20 species were recorded from the area; and followed by the family Pieridae (11 species) and the family Lycanidae (9 species). Mass migration of Lesser Albatross was recorded during the December – March season just after heavy rainy days. These emigrations were headed to North and North western directions.(see annex 3 for details)

Fish: A total of 35 species of fishes were recorded from the lagoons, and associated wetlands of the area. Data was gathered at random using fishermen daily catches and some direct observation. The common fishes includes salt water dispersant (Eg- *Anguilla bicolour*), marine forms (*Caranx sp.*), brackish water forms (*Oryzias sp., Monodactylus argentus*) and freshwater forms (*Puntius sp., Rasbora caverii*). Exotic Tilapia - *Oreochromis* sp. was the most common species in the fisherman daily catch. Snakeskin gourami – *Trichogaster pectoralis* was the another common exotic species specially in lagoon associated freshwater canals.(see annex 5 for details)

Amphibians: A total number of 14 Amphibian species were recorded in and around the three study sites. Among them *Hylarana gracilis* is endemic to the Island which is common to both dry and wet zone of Sri Lanka. The most common toad species found in all three sites are *Bufo scaber* (Ferguson's Toad) and *Duttaphrynus melanostictus* (Common house toad) and the most common frog species are *Euphlyctis hexadactylus* (Sixtoe green frog) and *Fejervarya limnocharis* (Common paddy field frog). None of the

amphibian species that was recorded identified as a Nationally threatened. (see annex 6 for details).

Reptiles: There were seventeen, both Serpentoid and Tetrapod, reptile species recorded within the study area and two species were endemic to the island (*Xenochrophis cf. piscator* -Checkered Keelback and *Lankascincus fallax* -Common lankaskink). Four species were recognized as a nationally vulnerable species (*Geochelone elegans* - Indian star tortoise; *Lissemys punctata* -Flapshell turtle; *Cerberus rynchops* - Dog-faced water snake; *Echis carinatus* - Saw scale viper) and one species (*Acrochordus granulatus* - Wart snake) as a Nationally Endangered species by the National status report (IUCN SL and MENR, 2007). (see annex 7 for details).

Birds: Total number of 102 bird species were recorded from the study area. Seven species were identified as winter visitors and one of the winter visitor species *Merops philippinus* (Blue-tailed Bee-eater) recorded in area is believed to be a residence population, which stay in the country through out the year. However we were unable to trace any nesting sites in the area. Four nationally near threatened species (IUCN SL and MENR, 2007) were recorded and among them *Acrocephalus stentoreus* (Clamorous Reed Warbler), and *Ploceus manyar* (Streaked Weaver) nest and juveniles were observed in the Potuvil lagoon system. (see annex 8 for details). Morover, it was interesting to observe several traditional breeds of chickens surviving in local house holds. They form an important part in faunal agro biodiversity of Sri lanka.

Mammals: During the period of survey we were able to record twenty-one mammalian species, including six domestic species. Among the mammals *Prionailurus viverrinus* (Fishing cat), Elephas *maximus* (Elephant), and *Ratufa macroura* (Giant squirrel) were identified as a Nationally Vulnerable by National status report (IUCN SL and MENR, 2007). However, habitat for the large mammalian species are reduced due to encroachment for the housing and agricultural lands. Elephants were observed in a small patch of forestland upper catchments of Periya-kalapuva near Sakamam. Several traditional cattle breeds well adapted to the area (see Photo catalogue C) were also seen and that is also a part of important local agro biodiversity heritage. (see annex 9 for details).

4.2 People and animal life

4.2.1 Beneficial animals:

Sustenance of fishery industry: Tilapia was the most common fish species of the fishermen daily catch. Cast net and gill net were the most common fishing methods of the area. Prawn species such as *Microbrachium* sp., *Metapenaeus* sp. and *Penaeus* sp. were captured by cast nets. *Liza sp. Gerres sp. Etroplus suratensis and Caranx sp*. were the common native species in fishers daily catch. Some fishers collect bivalves "Mussels" for local consumption but this is not a very common practice.

Bush meat: As a result of 25-year war and use of illegal weapons have lead to illegal killing of animals. Although the civil conflict is on decline, the use of fire arms for hunting is being used. Bush meat is available in hotels and villages though it done secretly. Spotted deer (*Axis axis*), Sambur (*Cervus unicolor*) and Wild boar (*Sus scrofa*) are commonly hunted for bush meat. Opportunistic hunting of wild hare (*Lepus nigricolis*) , Porcupine (*Hystrix indica*), and Land monitors (*Varanus bengalensis*) also reported. Often, traps were also used to capture small mammals as well as large mammals.

Traditional farm animals: Sri Lanka has a long history of agriculture and livestock practices. However there is no such documentation on traditional farm animals or any conservation programme to preserve this valuable indigenous gene pool. Four-morpho types of traditional cattle and two types of traditional fowls were observed in the villages. These types were highly adapted to extreme climatic condition of this drier part of the island. Therefore immediate conservation programme has to implement to preserve these tradition breeds of livestock.

Pest control agents: Species of various feeding guilds were observed and most of them serving as pest control agents. Improve predator attraction by establishing roosting places, feeding grounds, breeding grounds for insectivore birds (swift, flycatchers, Pipits, Bee eaters), mammals (insectivorous bats), carnivorous small mammals (fishing cats, mongoose, civets) and birds (owl spp., Shikra) surrounding the agricultural field can be used to eliminate pests of agricultural lands. Number of venomous (Cobra, vipers) and

non-venomous reptiles species (land monitors, water monitors, rat snake, python) also play a big role in controlling pests in agricultural lands and even in home gardens.

Pollinators and dispersal agents: Insects like Hymonopterons (Bees, and wasps) are the major pollinators which can be seen throughout the study area . Other than Insects, flower visiting birds and mammals such as Sunbirds, flower-peckers and fruit bats support to the system as a pollinators. Frugivorous birds (barbets, bulbuls, Koels) and mammals (fruit-bats) serve the environment by dispersing seeds.

4.2.2 Problematic animals: Indigenous fauna such as elephants (*Elephas maximus*) and wild boars (*Sus scrofa*) commonly entered in to agricultural lands and home gardens near the forest edges. Rodents like Bandicoots, Porcupines, and field mouse are the problematic small mammals living in the area especially harmful to agricultural lands and home gardens. **Other than the** mammal's reptiles such Cobra (*Naja naja*) Kraits (*Bungarus caeruleus*) and vipers (*Daboia russelii)* also harmful to the human life. Invasive species such as Tilapia (Oreoromis mosambicus) in the lagoon system eliminate native fish species. Over population of cattle has become a serious issue causing degradation of grasslands through overgrazing.

Annex-1: Plant species and and their abundance in study plots.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	Periya	Periya	Periya	Periya	Periya	Periya	Palakuda	Palakuda	Palakuda	Potuvil	Potuvil	Periya	Periya	Potuvil	Periya	Periya

	Botanical name	Aquatic	Grassland wet	Thornscrub	Thornscrub	Grassland dry	Beach vegatation	Grassland wet	Mangroves	Beach vegetation	Mangroves	Sand dune	Forest	Grassland wet	wet grassland	Lagoon	Lagoon- marsh
	Calotropis gigantea				D		C		E						F		
	Ipomoea pes-caprae						C			C							
	Spinifex littoreus						C			C							
	Typha angustifolia					F									D		B
	Eleocharis dulcis						E	D									C
	Schoenoplectus supinus				E		E	F					F				C
	Fimbristylis cymosa		D		F		E				F	F			F		D
	Panicum repens					F	E	E	F		F			E	C		D
	Aeschynomene americana				F		F	E									E
	Bacopa monnieri				E	F	E										E
	Blumea obliqua						E		F						F		E
	Cynodon dactylon		C		E	D	E				F		F	D	C		E
	Cyperus rotundus				E	F	E	D		E	F		F		E		E
	Abrus precatorius				F												
	Acalypha lanceolata											D					
	Achyranthes aspera					E							F				
	Acrostichum aureum										F						
	Aegiceras corniculata										E						
	Aeschynomene indica				F												
	Alloteropiss cimicina							E						D			
	Alternanthera sessilis		C											F			
	Alysicarpus vaginalis				F						F		F				
	Aristida setacea					F									F		
	Asystasia gangetica				F												
	Atalantia ceylanica				E												
	Atylosia scarabaecoides										F						
	Avicennia officinalis								C								
	Azima tetracantha											F			F		
	Azolla pinnata	F															
	Bauhinia racemosa														F		
	Benkara malabarica				D												
	Berringtonia actangula			E													
	Boerhavia diffusa												F	D			
	Borassus flabellifer			C											E		
	Bruguiera gymnorhiza										C						
	Bulbostylis barbata				E						F	F			F		
	Canthium coromandelicum			C	D							D					
	Cantunaregam spinosa												D				
	Casearia zeylanica											F					
	Cassampelos pareira											F					
	Cassia occidentalis				E									F	E		
	Cassia tora		F														
	Cassine glauca								E			E					
	Cayratia pedata											F					
	Centella asiatica		C											E			
	Ceratopteris thalictroides							E									

	Chloris barbata					F			F					F			
	Cissus quadrangularis											F					
	Clerodendrum incisum				F												
	Coccinia grandis		E	F													
	Cocos nucifera									E							
	Commelina diffusa			F	E	F		F						E			
	Cordia curassavica		E	D									E				
	Cordia dichotoma								E	E			D				
	Cordia oblongifolia											F					
	Crinum asiaticum				E			F									
	Crotalaria laburnifolia				F						F				F		
	Crotalaria pallida				E						F			F	F		
	Croton bonplandianus				E	F								F			
	Cyanotis obtusa						F							F			
	Cyperus arenarius											F					
	Cyperus bifax				E			D						F			
	Cyperus castaneus							F						F			
	Cyperus corymbosus										F				F		
	Cyperus difformis							D						F			
	Cyperus distans							F						F			
	Cyperus exaltatus										F				E		
	Cyperus javanicus		E														
	Cyperus pilosus								F								
	Dactyloctenium aegyptium										F			E	E		
	Derris trifoliata								F	E	F						
	Desmodium heterophyllum		E											D			
	Desmodium triflorum				F								F	D			
	Dioscorea tomentosa												F				
	Dodonaea viscosa											F					
	Dolichandrone spathacea										E						
	Drypetes sepiaria											D					
	Echinochloa colona		E										F				
	Eclipta prostrata		E											F			
	Eichhornia crassipes															A	
	Eleocharis actangula										F				F		
	Emilia sonchifolia					E								E			
	Enicostema axillare														F		
	Epaltes divaricata					F	F										
	Eragrostis ciliaris				E							F		F	F		
	Eragrostis viscosa		C		E	C					F			F	F		
	Euphorbia hirta												F	F			
	Euphorbia rosea										F						
	Euphorbia thymifolia						F										
	Excoecaria agallocha								C		D						
	Ficus amplissima											D	C				
	Ficus benghalensis			D													
	Ficus mollis												C				
	Fimbristylis dichotoma				E			F			F						
	Fimbristylis ferruginea										F				F		
	Fimbristylis fusca										F						
	Fimbristylis miliacea		C					E	F		F			F			
	Fuirena ciliaris							F						D			
	Glinus oppositifolia		E											F			
	Gomphrena celosioides				F												
	Grewia carpinifolia												D				

	Heliotropium indicum				E												
	Heritiera littoralis										E						
	Heteropogon contortus														F		
	Hibiscus micranthus												F				
	Hibiscus tiliaceus														F		
	Hydrophylax maritima										F	F					
	Hygrophila balsamica					E											
	Hygrophila schulli				F				F								
	Hygroryza aristata														D		
	Imperata cylindrica													F	F		
	Ipomoea aquatica										F						
	Ipomoea asarifolia			F													
	Ipomoea sepiaria								F								
	Ischaemum ciliare												F	E	F		
	Lantana camara				C												
	Leonotis nepetiifolia					F											
	Leptochloa neesii													F	E		
	Limonia acidissima				E												
	Lindernia rotundifolia							F									
	Ludwigia hyssopifolia		C	E													
	Ludwigia perennis							E						E			
	Ludwigia sp				E												
	Lumnitzera racemosa										E						
	Maba buxifolia											D					
	Macroptilium lathyroides														F		
	Manilkara hexandra											C					
	Marsilea minuta				F												
	Melochia corchorifolia		E					F									
	Memecylon umbellatum											D					
	Merremia tridentata				E												
	Mimosa pudica		E	E	E	E			F					E			
	Mitracarpus hirtus				E												
	Mollugo disticha		F											F	F		
	Mollugo pentaphylla					F								E			
	Monochoria vaginalis							F									
	Murdannia spirata		F		E			F						F			
	Najas minor				F				F								
	Nelumbo nucifera	A															
	Nymphaea nouchali							E									
	Nymphoides hydrophylla				E												
	Ochna obtusata											F					
	Oldenlandia biflora		F					F							F		
	Oldenlandia umbellata												F	F	F		
	Opuntia monacantha			C	C												
	Oryza sativa							E						F			
	Panicum sumatrense				E	D							F				
	Paspalum distichum							E						F			
	Pedalium murex													F			
	Persicaria attenuata				E												
	Phoenix pusilla Gaertn.								E								
	Phyla nodiflora					F		E							D		
	Phyllanthus amarus			D													
	Phyllanthus maderaspatensis												D				
	Phyllanthus reticulatus		F	D	D												
	Phyllanthus rotundifolius											F					

	Phyllanthus tenellus		F													
	Pistia stratiotes										F			F		
	Pleurostylia opposita											F				
	Polyalthia korinti											F				
	Polycarpaea corymbosa											F				
	Polygala javana				E											
	Pongamia pinnata				D											
	Premna latifolia								E	C	F					
	Premna obtusifolia								E							
	Psilanthus wightianus											F				
	Pssiflora suberosa								F							
	Pycreus polystachyos										F				F	
	Pycreus pumilus				E											
	Rhizophora mucronata								C		C					
	Salacia oblonga								E							
	Salvadora persica								E							
	Salvinia molesta	E	F					F			F				D	
	Sauropus bacciformis						F									
	Scoparia dulcis												F	F		
	Scutia myrtina											F				
	Sesamum prostratum											F				
	Sesamum rediatum				E											
	Sida acuta					F								F		
	Sida cordata					F										
	Sida cordifolia				F	F								F		
	Solanum trilobatum			E	E				F							
	Spermacoce hispida				E									D		
	Spermacoce prostrata														F	
	Spermacoce ramanii					F										
	Sphaeranthus africanus		F					F						F		
	Sphenoclea zeylanica				F										F	
	Syzygium cumini								E							
	Tarenna asiatica											D				
	Tephrosia purpurea				E	E			F							
	Tephrosia villosa								F		F		F			
	Thespesia populnea			D					E						F	
	Tridax procumbens								F		F			F	F	
	Tylophora tenuissima								F							
	Urena sinuata			F												
	Vahlia dichotoma		F													
	Vernonia cinerea			E	F									F		
	Vernonia zeylanica				E				F							
	Vigna marina										F					
	Viscum orientale								F							
	Vitex negundo									E						
	Walsura trifoliolata											F				
	Waltheria indica														F	
	Xanthium indicum			D												
	Zoysia matrella										F				D	

C
D
E
F

Annex-2: General list of plant species recorded in the project area

No	Family Name	Scientific Name	Common Name	Medicinal plant	Food plant
1	Acanthaceae	*Acanthus ilicifolius* L.	Ikili(S)	1	
2	Acanthaceae	*Asystasia gangetica* (L.)T.Anders.	Puruk(S)Peypatchotti(T)		
3	Acanthaceae	*Hygrophila balsamica*(L.f.)Raf.			
4	Acanthaceae	*Hygrophila schulli*(Buch.-Ham.) M.R. &S.N.Almeida	Neeramulliya,Katu-ikiliya(S)	1	1
5	Azioaceae	*Sesuvium protulacestrum* (L.)L.	Maha-sarana(S)Vankiruvilai(T)	1	
6	Azioaceae	*Trianthema decandra* L.	Maha-sarana(S)Charania)T)		1
7	Amaranthaceae	*Achyranthes aspera* L.	Gas-karal-heba,Wel-karal-sebo(s) Nayururi(T)	1	1
8	Amaranthaceae	*Aerva lanata*(L.)Juss. Ex Schult.	Polpala(S)Kanpuli(T)		1
9	Amaranthaceae	*Alternanthera sessilis*(L.) DC.	Mukunu-wenna(S)Ponankani(T)	1	1
10	Amaranthaceae	*Amaranthus viridis* L.	Kura-thampala(S)Araikkirai(T)	1	1
11	Amaranthaceae	*Amaranthus lividus* L.	Thampala(S)		1
12	Amaranthaceae	*Gomphrena celosioides* Mart.*			
13	Amaryllidaceae	*Crinum asiaticum* L.	Tolabo(S)Vichamunkil(T)	1	
14	Amaryllidaceae	*Crinum defixum* Ker-Gawl.	Heen-tolabo(S)	1	
15	Anacardiaceae	*Anacardium occidentale* L.*	Caju(S)Montin-kai(T)Cashew Nut(E)	1	1
16	Anacardiaceae	*Mangifera indica* L.*	Amba(S)Ma,Manga(T)Mango(E)	1	1
17	Anacardiaceae	*Spondias pinnata*(L.f.)Kurz	Amberella(S)Ampallai(T)Hog Plam(E)		1
18	Annonaceae	*Annona muricata* L*	Katu-anoda(S)Sitha(T)Soursop(E)	1	1
19	Annonaceae	*Polyalthia korinti*(Dunal)Thw.	Ul-kenda,Mi-wenna(S)Uluvintai(T)	1	
20	Annonaceae	*Polyalthia longifolia(sonn.)Thw.*	I-petta(S)Assathi(T)		
21	Apiaceae	*Centella asiatica* (L.) Urban	Gotukola(S)Vallarai(T)	1	1
22	Apocynaceae	*Nerium oleander* L.*	Kaneru(S)Alari(T)Oleander(E)	1	
23	Apocynaceae	*Plumeria rubra* L.*	Araliya(S)Temple Tree,Frangipani(E)	1	1
24	Apocynaceae	*Tabernaemontana divaricata*(L.)R.Br. ex. Roem & Schult.*	Wathu-sudda(S)Nandi-battai(T)Grape Jasmine(E)	1	
25	Apocynaceae	*Thevetia peruviana* (Pers.)Merr.*			
26	Apocynaceae	Wattakaka volubilis (L.f.)Stapf	Anguna(S)Kodi-palai(T)		1
27	Araceae	*Pistia stratiotes* L.*[IAS]	Diya-gowa,Diya-paradal(S)Water Lettuce(E)	1	
28	Araceae	*Alocasia macrorrhizos*(L.)G.Don*	Habarala(S)		1
29	Araceae	*Colocasia esculenta*(L.)Schoot	Gahala(S)Tara(E)		
30	Araceae	*Lasia spinosa*(L.)Thw.	Kohila(S)	1	1

31	Arecaceae	*Borassus flabellifer* L.*	Tal(S)Panai(T)Palmyrah(E)	1	1
32	Arecaceae	*Cocos nucifera* L.	Pol,Thambili(S)Tennai,Thengai(T)Coconut,King coconut (E)	1	1
33	Arecaceae	*Phoenix pusilla* Gaertn.	Indi(S)Inchu(T)	1	1
34	Asclepiadaceae	*Calotropis gigantea* (L.)R.Br.	Wara(S)Errukalai(T)	1	
35	Asclepiadaceae	*Tylophora tenuissima* (Roxb.)Wight &Arn.ex Wight		1	
36	Asclepiadaceae	*Wattakaka volubilis* (L.f.)Stapf	Anguna(S)Kodi-palai(T)		1
37	Asteraceae	*Blumea obliqua* (L.)Druce	Muda-mahana(S)Nara-karamba(T)		
38	Asteraceae	*Eclipta prostrata* (L.)L.	Kikirindi(S)Kaikechi(T)	1	1
39	Asteraceae	*Emilia sonchifolia*(L.)DC.	Kadupara(S)	1	1
40	Asteraceae	*Epaltes divaricata*(L.)Cass.	Heen-muda-mahana(S)	1	
41	Asteraceae	*Eupatorium odoratum* L.* [IAS]	Podisingnomaran(S)	1	
42	Asteraceae	*Sphaeranthus africanus* L.	Vel-mudda(S)	1	
43	Asteraceae	*Tridax procumbens* L.*	Kurunegala Daisy(E)	1	
44	Asteraceae	*Vernonia cinerea* (L.) Less.	Monarakudumbiya(S)Chitiviyarchenkalainir(T)	1	1
45	Asteraceae	***Vernonia zeylanica*(L.) Less.**	Pupula(S)Kuppailay(T)	1	
46	Asteraceae	*Xanthium indicum* Koenig*[IAS]	Uru kossa(S)	1	
47	Avicenniaceae	*Avicennia officinalis* L.	Manda(S)Kanna(T)White Mangrove(E)	1	
48	Azollaceae	*Azolla pinnata* R.Br.			
49	Basellaceae	*Basella alba* L.	Nivithi(S)Pasalai(T)Spinach(E)		1
50	Bignoniaceae	*Dolichandrone spathacea*(L.f.)K.Schum.	Diyadanga(S)Vil-padri(T)		
51	Bignoniaceae	*Stereospermum colais* (Dillwyn)Mabb.	Dunu-madala(S)Padri(T)		
52	Bombacaceae	*Ceiba pentandra* (L.)Gaertn.	Pulun-imbul(S)Silk cotton Tree(E)	1	
53	Boraginaceae	*Cordia curassavica*(Jacq.)Roem.&Schult.*		1	
54	Boraginaceae	*Cordia dichotoma* Forst.f.	Lolu(S)Naruvilli(T)	1	1
55	Boraginaceae	*Cordia oblongifolia* Thw.			
56	Boraginaceae	*Heliotropium indicum* L.	Eth hoda,Dimi-biya(S)Tedkodukku(T)	1	
57	Cactaceae	*Opuntia monacantha* Haw.*	Katu-pathok(S)Naka kalli(T)Pricly Pare(E)		1
58	Cactaceae	*Trichocereus pachanoi Britton & Rose**			
59	Cactaceae	*Cleome viscosa* L.	Wal aba(S)		
60	Capparaceae	*Crateva adansonii DC.*	Lunu-warana(S)Navala(T)	1	
61	Caricaceae	*Carica papaya* L.*	Gas-labu,Papol(S)Pappali(T)Pawpaw(E)	1	1
62	Caryophyllaceae	*Polycarpaea corymbosa*(L.) Lam.			
63	Casuarinaceae	*Casuarina equisetifolia* L.*	Kasa(S)Chavakku(T)Whistling Pine(E)		
64	Celastraceae	***Cassine glauca*(Rottb.)Kuntze**	Neralu(S)Perunpiyari(T)	1	

65	Celastraceae	*Pleurostylia opposita*(Wall.)Alston	Panakka(S)Chiru Piyari(T)	1	
66	Colchicaceae	*Gloriosa superba* L.	Niyagala(S)	1	
67	Combretaceae	*Lumnitzera racemosa* Willd.	Beriya(S)Tipparuthin(T)		
68	Combretaceae	*Terminalia arjuna* (Roxb.) Wight & Arn.	Kumbuk(S)Marutu(T)	1	
69	Combretaceae	*Terminalia catappa* L.*	Kottamba(S)Country Almond(E)	1	1
70	Commelinaceae	*Commelina diffusa* Burm.f.	Gira-pala(S)	1	1
71	Commelinaceae	*Cyanotis obtusa*(Trimen)Trimen			
72	Commelinaceae	*Murdannia spirata* (L.)G.Bruckn.			1
73	Convolvulaceae	*Evolvulus alsinoides* (L.)L.	Vishnu-kranthi(S)Vichnu-kiranti(T)	1	
74	Convolvulaceae	*Ipomoea aquatica* Forssk.	Kankun(S)	1	1
75	Convolvulaceae	*Ipomoea asarifolia* (Desr.)Roem.&Schult.	Binthambura(S)	1	
76	Convolvulaceae	*Ipomoea batatas*(L.)Lam.*	Batala(S)Vel-kelengu(T)Sweet Potatao)		1
77	Convolvulaceae	*Ipomoea pes-caprae*(L.)R.Br.	Mubu-binthamburu(S)	1	
78	Convolvulaceae	*Ipomoea sepiaria* Roxb.	Rasa-tel-kola(S)Tali(T)		
79	Convolvulaceae	*Merremia tridentata* (L.)Hall.f.	Hawari-madu,Heen-madu(S)Mudiyakuntal(T)	1	
80	Cucurbitaceae	*Bennincasa hispida*(Thunb.)Cogn.*	Alupuhul(S)Puchini(T)Ash Pumpkin(E)		
81	Cucurbitaceae	*Citrullus colocynthis* (L.) Schrad.	Penikomadu(S)Peykkomaddi(T)Colocynth(E)		1
82	Cucurbitaceae	*Coccinia grandis*(L.)J.Voigt	Kowakka(S)Kovvai(T)Ivy Gourd(E)	1	1
83	Cucurbitaceae	*Cucumis melo* L. var conomon	Heen kekiri(S)Metukku(T)		1
84	Cucurbitaceae	*Cucumis sativus* L.	Pipinha(S)Cucumber(E)		1
85	Cucurbitaceae	*Cucurbita maxima* Pang*	Wattakka(S)Pumpkin Gourd(E)		1
86	Cucurbitaceae	*Lagenaria siceraria*(Molina)Standley*	Diya-labu(S)Churai(T)Bottle Gourd(E)		1
87	Cucurbitaceae	*Luffa acutangula*(L.)Roxb.*	Wetakolu(S)Peypichukka(T)		1
88	Cucurbitaceae	*Luffa cylindrica*(L.)M.Roemer*	Niyan wetakolu(S)Pikku(T)		1
89	Cucurbitaceae	*Momordica charantia* L.	Batu-karavila(S)Pakal(T)	1	1
90	Cucurbitaceae	*Momordica dioica* Roxb.ex Willd.	Thumbakarawila(S)Tumpai(T)		1
91	Cucurbitaceae	*Trichosanthes anguina* L.	Pathola(S)Podivilangi(T)Snake Gourd(E)		1
92	Cyperaceae	*Bulbostylis barbata*(Rottb.)Kunth ex Clarke	Uru-hiri(S)		
93	Cyperaceae	*Cyperus arenarius* Retz.	Mudu-kalanduru(S)		
94	Cyperaceae	*Cyperus bifax* Clarke			
95	Cyperaceae	*Cyperus castaneus* Willd.			
96	Cyperaceae	*Cyperus corymbosus* Rottb.	Gal-ehi(S)		
97	Cyperaceae	*Cyperus difformis* L.			
98	Cyperaceae	*Cyperus distans* L.f.			

99	Cyperaceae	*Cyperus exaltatus* Retz.			
100	Cyperaceae	*Cyperus javanicus* Houtt.	Ramba(S)Irampai(T)		
101	Cyperaceae	*Cyperus pilosus* Vahl			
102	Cyperaceae	*Cyperus rotundus* L.	Kalanduru(S)Korai(T)	1	
103	Cyperaceae	*Eleocharis actangula*(Rottb.)Schult.			
104	Cyperaceae	*Eleocharis dulcis*(Burm.f.)Trin.ex Hensch.	Boru-pan(S)	1	
105	Cyperaceae	*Fimbristylis cymosa* R.Br.			
106	Cyperaceae	*Fimbristylis dichotoma*(L.)Vahl			
107	Cyperaceae	*Fimbristylis ferruginea*(L.)Vahl			
108	Cyperaceae	*Fimbristylis fusca*(Nees)Clarke			
109	Cyperaceae	*Fimbristylis miliacea*(L.)Vahl	Mudu-hal-pan(S)		
110	Cyperaceae	*Fuirena ciliaris* (L.)Roxb.			
111	Cyperaceae	*Pycreus polystachyos*(Rottb.)Beauv.			
112	Cyperaceae	*Pycreus pumilus* (L.)Nees.	Go-hiri(S)		
113	Cyperaceae	*Schoenoplectus supinus* (L.)Pallla			
114	Cyperaceae	*Dioscorea bulbifera* L.	Udala(S)Rasa Valli(T)Potato Yam(E)		1
115	Dioscoreaceae	*Dioscorea tomentosa* Koenig ex Spreng.	Uyala(S)		
116	Dracaenaceae	*Sansevieria zeylanica*(L.)Willd.	Niyada(S)Maral(T)Bow-string Hemp(E)	1	
117	Ebenaceae	*Maba buxifolia*(Rottb.)Juss.		1	1
118	Euphorbiaceae	*Acalypha lanceolata* Willd.			
119	Euphorbiaceae	*Croton bonplandianus* Baill.*	Mal-miris(S)Kolinge(E)	1	
120	Euphorbiaceae	*Drypetes sepiaria* (Wight & Arn.) Pax & Hoffm.	Wira(S)Virai(T)		1
121	Euphorbiaceae	*Euphorbia hirta* L.	Bu-dada-kiriya(S)Palavi(T)	1	
122	Euphorbiaceae	*Euphorbia rosea* Retz.	Mudu-dada-kiriya(S)	1	
123	Euphorbiaceae	*Euphorbia thymifolia* L.	Bin-dada-kiriya(S)Chittirapalavi(T)	1	
124	Euphorbiaceae	*Euphorbia tirucalli* L.*	Nawa-handi(S)Kalli(T)Milk Hedge(E)		
125	Euphorbiaceae	*Excoecaria agallocha* L.	Tala-kiriya,Tela-kiriya,Tel-kiriya(S)Tilai(T)	1	
126	Euphorbiaceae	*Mallotus philippensis*(Lam.)Muell.Arg	Hampirilla(S)Kapila(E)	1	
127	Euphorbiaceae	*Manihot esculenta* Crantz.*	Maiokka,Manyokka(S)Cassava,Manioc(E)		1
128	Euphorbiaceae	*Phyllanthus amarus* Schum.	Pita-wakkka(S)Kikaunelli(T)	1	
129	Euphorbiaceae	*Phyllanthus maderaspatensis* L.		1	
130	Euphorbiaceae	*Phyllanthus polyphyllus* Willd.	Kuratiya(S)		
131	Euphorbiaceae	*Phyllanthus reticulatus* Poir.	Wel-kaila(S)Mipullanti(T)	1	
132	Euphorbiaceae	*Phyllanthus rotundifolius* Klein ex			

		Willd.			
133	Euphorbiaceae	*Phyllanthus tenellus* Roxb.*			
134	Euphorbiaceae	*Phyllanthus urinaria* L.	Rat-pitawakka(S)Kilkaynelli(T)		
135	Euphorbiaceae	*Ricinus communis* L.*	Endaru(S)Chillamanakku,Chittamanakku(T)Castor oil(E)	1	
136	Euphorbiaceae	*Sauropus bacciformis* (L.)Airy Shaw	Bin-delung,et-pitawakka(S)		
137	Euphorbiaceae	*Sebastiania chamaelea*(L.)Muell.Arg.	Rat-pitawakka(S)		
138	Fabaceae	*Abrus precatorius* L.	Olinda(S)Kundu-mani(T)Crab's eyes(E)	1	1
139	Fabaceae	*Acacia auriculiformis* A. Cunn. ex Benth.*	Earleaf Acacia(E)		
140	Fabaceae	*Acacia chundra* Willd.	Diyahinguru,Rat-kihiriya(S)Red Cutch(E)		
141	Fabaceae	*Adenanthera pavonina* L.	Madatiya(T)Anaikuntumani(T)	1	1
142	Fabaceae	*Aeschynomene americana* L.*	Diyasiyambala(S)Thrnless Mimosa(E)		
143	Fabaceae	*Aeschynomene indica* L.	Diya-siyambala(S)		
144	Fabaceae	*Albizia chinensis*(Osbeck)Merr.	Kabalmara(S)Pili Vagai(T)		
145	Fabaceae	*Alysicarpus vaginalis* (L.)DC.	Aswenna(S)Kuthiraivali(T)	1	
146	Fabaceae	*Arachis hypogaea* L.*	Ratakaju(S)Nella-kadalai(T)Earth Nut(E)		1
147	Fabaceae	*Atylosia scarabaecoides* (L.)Benth.	Wal-kollu(S)	1	1
148	Fabaceae	*Bauhinia racemosa* Lam.	Maila(S)Atti(T)	1	
149	Fabaceae	*Bauhinia tomentosa* L.	Kaha-pethan(S)Tiruvathi(T)		
150	Fabaceae	*Caesalpinia pulcherrima*(L.)Sw.*	Monera-mal(S)Peacock Flower(E)		
151	Fabaceae	*Cassia occidentalis* L	Peni-tora(S)Ponnantakarai(S)Coffe-senna(E)	1	1
152	Fabaceae	*Cassia tora* L.	Peti-tora(S)Vaddutakarai(T)	1	1
153	Fabaceae	*Crotalaria laburnifolia* L.	Yak-beriya(S)	1	
154	Fabaceae	*Crotalaria pallida* Ait.	Andanaheriya(S)		
155	Fabaceae	*Derris trifoliata* Lour.	Kala-wel(S)Tilankoddi(T)	1	
156	Fabaceae	*Desmodium heterophyllum* (Willd.)DC.	Maha undu piyali(S)	1	
157	Fabaceae	*Desmodium triflorum* (L.)DC.	Heen-undupiyali(S)Narankodi(T)	1	
158	Fabaceae	*Gliricidia sepium*(Jacq.)Walp.	Wetahira,Kona(S)Kona(T)		
159	Fabaceae	*Leucaena leucocephala* (Lam.)de Wit*[IAS]	Ipil-ipil(S)Tangavai(T)Epil-ipil(E)		
160	Fabaceae	*Macroptilium lathyroides*(L.)Urban			
161	Fabaceae	*Macrotyloma uniflorum* (Lam.) Verdc.	Kollu(S)Kollu(T)Horse Gram(E)	1	1
162	Fabaceae	*Mimosa pudica* L.*	Nidi kumba(S)Tottal-vadi(T)Sensitive Plant(E)	1	1
163	Fabaceae	*Peltophorum pterocarpum* (DC.) Backer ex K. Heyen	Kaha-mara(S)Iya-vakai(T)yellow Flame(E)		
164	Fabaceae	*Pongamia pinnata* (L.)Pierre	Magul-karanda(S)Poona(T)Mullikulam Tree(E)	1	

165	Fabaceae	*Psophocarpus tetragonolobus*(L.)DC.*	Dara-dambala(S)Winged Bean(E)		1
166	Fabaceae	*Sesbania gradiflora*(L.)Poir.*	Kathurumurnga(S)Ajatti(T)		1
167	Fabaceae	*Tephrosia purpurea*(L.)Pers.	Gam-pila(S)Kavilai(T)	1	
168	Fabaceae	*Tephrosia villosa*(L.)Pers.	Bu-pila(S)	1	
169	Fabaceae	*Vigna marina*(Burm.)Merr.	Karal-li-mi(S)Kodippayaru(T)Field Bean(E)	1	1
170	Fabaceae	*Vigna mungo*(L.)Hepper*	Mun(S)Ulundu(T)Black Gram(E)		1
171	Fabaceae	*Vigna unguiculata* (L.)Walp.*	Cowpea(S)Kodip-payam(T)Cowpea(E)		1
172	Falcourtiaceae	*Casearia zeylanica* (Gaertn.)Thw.	Wal waraka(S)Kakkapalai(T)		
173	Gentianaceae	*Enicostema axillare*(Lam.)Raynal	Vellakuru(T)	1	
174	Hippocrateaceae	*Salacia oblonga* Wall. Ex Wight & Arn.	Himbutu(S)Chundan(T)	1	1
175	Hydrocharitaceae	*Blyxa octandra* (Roxb.)Planch. Ex Thw.	Diya hawariya(S)		
176	Hydrocharitaceae	*Hydrilla verticillata*(L.f.)Royle	Halpenni(S)		
177	Hydrocharitaceae	*Ottelia alismoides*(L.)Pers.			
178	Hydrocharitaceae	*Vallisneria spiralis* L.			
179	Lamiaceae	*Leonotis nepetiifolia*(L.)R.Br.	Maha-yak-wanassa(S)Kasitumpai(T)	1	
180	Lecythidaceae	*Berringtonia actangula* (L.)Gaertn.	Ela-mudella(S)Adampu(T)	1	
181	Malpighiaceae	*Hiptage benghalensis* (L.)Kurz	Puwak-gedia-wel(S)		
182	Malvaceae	*Abelmoschus esculentus* (L.) Moench*	Bandakka(S)Vandakkay(T)Lady's Fingers(E)		1
183	Malvaceae	*Hibiscus micranthus* L.f.	Bebila(S)Perumaddi(T)	1	
184	Malvaceae	*Hibiscus rosa-sinensis* L.*	Sapaththu mal,Wada(S) Shoeflower(E)	1	
185	Malvaceae	*Hibiscus tiliaceus* L.	Beli-patta(S)Artia,Nir-paratthi(T)	1	
186	Malvaceae	*Pavonia odorata* Willd.			
187	Malvaceae	*Sida acuta* Burm. f.	Gas-bevila(S)		
188	Malvaceae	*Sida cordata*(Burm.f.)Borssum Waalkes	Bevila(S)Palampadu(T)	1	
189	Malvaceae	*Sida cordifolia* L.	Wal-bavila(S)Chevakanpudu(T)	1	
190	Malvaceae	*Thespesia populnea* (L.) Sol. ex Correa.	Suriya(S)Kavarachu,Puvarachu(T)Tulip Tree(E)	1	
191	Malvaceae	*Urena sinuata* L.	Heen-epala,Patta-epala(S)		
192	Marsileaceae	*Marsilea minuta* L.	Dwarf waterclover(E)	1	
193	Melastomataceae	*Memecylon umbellatum* Burm.f.	Kora-kaha(S)Kaya(T)Blue mist(E)	1	1
194	Meliaceae	*Azadirachta indica* A.Juss.	Kohomba(S)Vembu(T)Neem(E)	1	
195	Meliaceae	*Chukrasia tabularis* A.Juss.	Hulan-hik(S)Aglai(T)Chittagong Wood(E)	1	
196	Meliaceae	*Walsura trifoliolata*(A.Juss.)Harms	Kirikon(S)Chadavakku(T)	1	1
197	Menispermaceae	*Cassampelos pareira* L.	Diya-mitta(S)Appatta(T)	1	
198	Menyanthaceae	*Nymphoides hydrophylla*	Heen-ambala,Heen-olu(S)		

		(Laur.)Kuntze			
199	Molluginaceae	*Glinus oppositifolia*(L.)A.DC.	Henn-ala(S)Kachchantirai(T)	1	1
200	Molluginaceae	*Mollugo disticha* (L.)Seringe	Udetta(S)Pat-padakam(T)	1	
201	Molluginaceae	*Mollugo pentaphylla* L.		1	1
202	Moraceae	*Artocarpus heterophyllus* Lam*	Kos(S)Pila(T)Jak(E)		1
203	Moraceae	*Ficus amplissima* Smith	Ela-nuga(S)Kalatti(T)		
204	Moraceae	*Ficus benghalensis* L.	Mahanuga(S)Arla(T)Banyan(E)	1	
205	Moraceae	*Ficus microcarpa* L.f.			
206	Moraceae	*Ficus mollis* Vahl	Wal-aralu(S)		
207	Moraceae	*Plecospermum spinosum* Trecul	Katu-timbol,Thingol(S)		
208	Moraceae	*Streblus asper* Lour.	Gata-netul(S)Patpirai(T)Crooked Rough-bush(E)		
209	Moringaceae	*Moringa oleifera* Lam.*	Murunga(S)Murungamaram(T)Horse Radish Tree(E)	1	1
210	Musaceae	*Musa x.paradisiaca* L.*	Kesel(S)Bannana(E)	1	1
211	Myrsinaceae	*Aegiceras corniculata*(L.)Blanco	Heen-kadol(S)Vitlikanna(T)		
212	Myrtaceae	*Eucalyptus sp**			
213	Myrtaceae	*Psidium guajava* L.*	Pera(S)Guava(E)		1
214	Myrtaceae	*Syzygium cumini* Skeels	Madan,Maha-dan(S)Naval,Perunaval(T)	1	1
215	Najadaceae	*Najas minor* All.			
216	Nelumbonaceae	*Nelumbo nucifera* Gaertn.	Nelum(S)Tamarai(T)Lotus(E)	1	1
217	Nyctaginaceae	B*oerhavia diffusa* L.	Pita-sudu-pala(S)Karichcharanai(T)	1	1
218	Nyctaginaceae	*Pisonia grandis* R.Br.	Wathabanga,Lechchakotta(S)Chandi(T)Lettuce Tree(E)	1	1
219	Nymphaeaceae	*Nymphaea nouchali* Burm.f.	Manel(S)Water Lily(T)	1	1
220	Ochnaceae	*Ochna obtusata* DC.	Mal-kera(S)Chilanti(T)	1	
221	Onagraceae	*Ludwigia hyssopifolia*(G.Don)Exell			
222	Onagraceae	*Ludwigia perennis* L.			
223	Onagraceae	*Ludwigia sp*			
224	Parkeriaceae	*Ceratopteris thalictroides* (L.) Brongn.	Watersprite(E)		
225	Passifloraceae	*Pssiflora suberosa* L.*	Delbatu(S)		
226	Pedaliaceae	*Pedalium murex* L.	Et-nerenhi(S)	1	
227	Pedaliaceae	*Sesamum prostratum* Retz.			
228	Pedaliaceae	*Sesamum rediatum* Schum.		1	1
229	Periplocaceae	*Hemedesmus indicus* (L.)R.Br.	Iramusu(S) Nannari(T)	1	1
230	Poaceae	*Alloteropiss cimicina*(L.)Stapf	Budeni-tana(S)Unni-pul(T)		
231	Poaceae	*Aristida setacea* Retz.	Et-tuttiri(S)	1	

232	Poaceae	*Chloris barbata* Sw.*	Mayuru-tana(S)Kandai-pul(T)		
233	Poaceae	*Cynodon dactylon*(L.)Pers.	Ruha(S)Arugam-pillu(T)Bermuda Grass(E)	1	
234	Poaceae	*Dactyloctenium aegyptium*(L.) Willd.	Bela-thana,Potu-tana(S)	1	
235	Poaceae	*Echinochloa colona*(L.)Link	Gira-tana(S)Adipul(T)		1
236	Poaceae	*Eragrostis ciliaris*(L.)R.Br.			
237	Poaceae	*Eragrostis viscosa*(Retz.)Trin.			
238	Poaceae	*Heteropogon contortus*(L.)Roem.&Schult.	I-tana(S)	1	
239	Poaceae	*Hygroryza aristata*(Retz.)Nees	Go-jabba,Beru-tana(S)	1	
240	Poaceae	*Imperata cylindrica*(L.)Rausch*[IAS]	Iluk(S)Varli-pillu(T)	1	
241	Poaceae	*Ischaemum ciliare* Retz.	Rat-tana(S)	1	
242	Poaceae	*Leptochloa neesii* (Thw.)Benth.			
243	Poaceae	*Oryza sativa* L.	Wi(S)Paddy(E)	1	1
244	Poaceae	*Panicum repens* L.	Etora(S)Inji-pul(T)	1	
245	Poaceae	*Panicum sumatrense* Roth ex Roem.&Schult*	Heen-meneri(S)Shamai(T)		
246	Poaceae	*Paspalum distichum* L.			
247	Poaceae	*Saccharum officinarum* L.*	Uk(S)Karumbu(T)Sugar-cane(E)	1	1
248	Poaceae	*Spinifex littoreus* (Burm.f.)Merr.	Maha-rawana-ravula(S)Ravanan-meesai(T)		
249	Poaceae	*Zea mays* L.*	Badairingu(S)Makka-cholam(T)Maize(E)		1
250	Poaceae	*Zoysia matrella*(L.)Merr.			
251	Polygalaceae	*Polygala javana* DC.	Tilo-guru(S)		
252	Polygonaceae	*Persicaria attenuata* (R.Br.)Sojak	Sudu-kimbul-wenna(S)		
253	Pontederiaceae	*Eichhornia crassipes (Mart.)Solms-Laub**[IAS]	Japan-jabara(S)Water Hyacinth(E)		
254	Pontederiaceae	*Monochoria vaginalis*(Burm.f.)Presl	Diya-habarala(S)	1	1
255	Pteridaceae	*Acrostichum aureum* L.	Karan-koku(S)	1	1
256	Punicaceae	*Punica granatum* L.*	Delum(S)Madalai(T)Pomergranate(E)	1	1
257	Rhamnaceae	*Scutia myrtina* (Burm.f.)Kurz	Tudari(T)		
258	Rhamnaceae	*Ziziphus mauritiana* Lam.	Debera,Masan(S)Ilantai(T)	1	1
259	Rhizophoraceae	*Bruguiera gymnorhiza* (L.) Lamk.	Mal-kadol(S)Mangrove(E)		
260	Rhizophoraceae	*Rhizophora mucronata* Poir.	Maha-kadol(S)Kandal(T)Mangrove(E)		
261	Rubiaceae	*Benkara malabarica* (Lam.)Tirv.	Pudan(S)		
262	Rubiaceae	*Canthium coromandelicum* (Burm.f.)Alston.	Kara(S)Karai(T)		1
263	Rubiaceae	*Cantunaregam spinosa* (Thunb.)Tirv.s.l.	Kukuruman(S)Karai(T)	1	
264	Rubiaceae	*Hydrophylax maritima* L.f.	Mudu-geta-kola(S)		

265	Rubiaceae	*Mitracarpus hirtus* (L.)DC.*			
266	Rubiaceae	*Nauclea orientalis* (L.)L.	Bakmi(S)Atuvangi(T)	1	
267	Rubiaceae	*Oldenlandia biflora* L.	Thirapala(S)	1	
268	Rubiaceae	*Oldenlandia umbellata* L.	Saya(S)Chaya(T)Chay-root(E)	1	
269	Rubiaceae	*Psilanthus wightianus*(Wight & Arn.)Leroy	Kaddumallikai(T)		
270	Rubiaceae	*Spermacoce hispida* L.	Heen-gata-kola(S)Nattaichchuri(T)	1	
271	Rubiaceae	*Spermacoce prostrata* Aublet			
272	Rubiaceae	*Spermacoce ramanii* Sivarajan & Nair			
273	Rubiaceae	*Tarenna asiatica* (L.) Kuntze ex Schumann.	Tarana(S)Karanai(T)	1	
274	Rutaceae	*Aegle marmelos*(L.)Correa*	Beli(S)Vilvam(T)Bael Fruit(E)	1	1
275	Rutaceae	*Atalantia ceylanica* (Arn.) Oliver	Yakinaran(S)Pey-kuruntu(T)	1	
276	Rutaceae	*Citrus aurantifolia* (Christm. & Panzer)Swingle*	Dehi(S)Desi-kai(T)True Lime(E)	1	1
277	Rutaceae	*Limonia acidissima* L.	Diwul(S)Mayaladikkuruntu, Vila, Vilatti(T), Wood-apple(E)	1	1
278	Rutaceae	*Murraya koenigii* (L.) Spreng	Karapincha(S)Karivempu(T)Curry-leaf(E)	1	1
279	Salvadoraceae	*Azima tetracantha* Lam.	Ichanku(T)	1	
280	Salvadoraceae	*Salvadora persica* L.	Maliththan(S)Uvay(T)	1	
281	Salviniaceae	*Salvinia molesta* D.S.Mitchell.*[IAS]	Salvinia(S)		
282	Sapindaceae	*Cardiospermum halicacabum* L.	Penela(S)	1	1
283	Sapindaceae	*Dodonaea viscosa* Jacq.	Eta-werella(S)Virali(T)	1	
284	Sapotaceae	*Manilkara hexandra* (Roxb.)Dubard	Palu(S)Palai(T)	1	1
285	Scorophulariaceae	*Bacopa monnieri* (L.)Pennell	Lunu-wila(S)	1	1
286	Scorophulariaceae	*Lindernia rotundifolia* (L.)Alston			
287	Scorophulariaceae	*Scoparia dulcis* L.*	Wal-kottamalli(S)	1	1
288	Solanaceae	*Capsicum annuum* L.*	Miris(E)Chilli(E)	1	1
289	Solanaceae	*Lycopersicon esculentum* Miller.*	Takkali(S)Tomato(E)		1
290	Solanaceae	*Solanum violaceum* Ortega	Tibbatu(S)		1
291	Solanaceae	*Solanum macrocarpon* L.*	Wam-batu(S)		1
292	Solanaceae	*Solanum melongena* L.*	Thalanabatu/Ela-batu(S)Vaddu(T)Egg Plant(E)	1	1
293	Solanaceae	*Solanum trilobatum* L.	Wel-tibbatu(S)Tuttuvalai(T)	1	1
294	Sphenocleaceae	*Sphenoclea zeylanica* Gaertn.			
295	Sterculiaceae	*Heritiera littoralis* Dryander	Etuna,Ho-mediriya(S)Chonmuntiri(S)Boat-shaped Mangrove (E)		
296	Sterculiaceae	*Melochia corchorifolia* L.	Gal-kura(S)	1	
297	Sterculiaceae	*Waltheria indica* L.	Punnikki(T)		

298	Tiliaceae	*Berrya cordifolia*(Willd.)Burret	Hal-milla(S)Chvandalai(T)Trincomalee Wood(E)	1	
299	Tiliaceae	*Grewia carpinifolia* Juss.			
300	Tiliaceae	*Grewia helicterifolia* Wall. Ex G.Don	Bora-damaniya(S)Taviddai(T)		
301	Tiliaceae	*Muntingia calaburu* L.*	Jam(S)Jam Tree(E)		1
302	Typhaceae	*Typha angustifolia* L.*[IAS]	Hambu pan(S)Cat-tail(E)		
303	Ulmaceae	*Trema orientalis* (L.) Blume	Gadumba(S)Charcole Tree(E)		
304	Vahliaceae	*Vahlia dichotoma* (Murr.)Kuntze			
305	Verbenaceae	*Clerodendrum incisum* Klotzsch*	Glorybower(E)		
306	Verbenaceae	*Lantana camara* L.*[IAS]	Hinguru,Ganda-pana(S)Wild Sage(E)	1	1
307	Verbenaceae	*Phyla nodiflora* L.	Hiramana-datta(S)Podutalai(T)Button weed(E)	1	1
308	Verbenaceae	*Premna latifolia* Roxb.	Dangra-seya,Maha-midi(S)Pachumullai(T)		
309	Verbenaceae	*Premna obtusifolia* R.Br.	Maha-midi(S)Erumaimulla(T)Headache tree(E)	1	
310	Verbenaceae	*Tectona grandis* L.f.*	Thekka(S)Tekku(T)Teak(E)	1	
311	Verbenaceae	*Vitex negundo* L.	Nika(S)Nochchi(T)Chaste Tree(E)	1	
312	Viscaceae	*Viscum orientale* Willd.			
313	Vitaceae	*Cayratia pedata* (Lam.)Juss. Ex Gagnep.	Gerandi-dul-wel(S) Kattuppirandai(T)	1	
314	Vitaceae	*Cissus quadrangularis* L.	Heeressa(S)Arugani(T)	1	
315	Vitaceae	*Vitis vinifera L.**	Midi(S)Graps(E)	1	1

Total Species	**315**
Endemics	**2**
Indigenus	**242**
Exotic	**71**
Threaten	**0**
Medicinal	**159**
Foods	**104**
Invasive Alien Species(IAS)	**9**