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NON-WOOD FOREST PRODUCTS IN THE GAMBIA

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This paper has been minimally edited for clarity and style

ABBREVIATIONS

NBA - National Beekeepers Association
NWFP - Non Wood Forest Product
M - Mandika Name
W - Wollof Name
F - Fula Name
J - Jola Name

1.0 Introduction

Although The Gambia is a relatively small country with a total area of about 11,295 km² (including 948 km² inland water), it is endowed with a diversity of flora and fauna. With its characteristic Sudan Savannah and woodland vegetation, it has various ecosystems which contain numerous flora and fauna.

Since a lot of plant and animal species in the country are not yet identified, their safety through ecosystems protection cannot be undermined. Currently, only 150 species of plants are identified in The Gambia. Wildlife and most lower plant species are poorly studied. Food and medicine supplies are among the main problems of the world, especially in the African continent. The Gambian people, although residing in a Sahelian country, have been lucky to escape severe famine and malnutrition. On the other hand, Gambians are still facing a severe shortage of medical supplies. This is where NWFPs play a pivotal role.

The Gambian people are generally aware of the importance of these non-wood forest products. However, Gambians find themselves in an unfortunate situation where their demand and values are becoming increasingly recognized while, at the same time, they are disappearing at an alarming rate due to a high rate of deforestation which is now 3.11% annually. This present trend must be halted to avoid serious environmental damages which could invariably impede agricultural production, and also to avoid deficiencies in the availability of various non-wood forest products and destruction of the natural and cultural heritage of the nation.

As the population is ever increasing, food, medicine and other human needs will continue to rise. Therefore, these non-wood forest products must be protected.

It is now common knowledge in The Gambia that the major extraneous factors affecting the variability of our forest cover is human influence. Predominately rampant uncontrolled annual bush-fires have devastated and transformed large areas of what were formerly dense natural forests. Overgrazing and in-appropriate cultivation have played an important role in turning our woodland into secondary or derived savannah.

Habitat destruction that resulted from deforestation in The Gambia, has threatened our wildlife resources. According to Murphy (1997), about 13 species of animals have become extinct over the last few years and a similar number is threatened. Therefore there is an urgent need to protect what is left, as the country's flora and fauna are poorly studied.

There is high unexploited potential for honey and beeswax in the country. The exploitation of these products can contribute considerably to achieve good results from government interventions.

With the current deforestation rate of 3.11%, the future of these non-wood forest products (NWFP) lies in the balance.

Study method

In order to address the issues raised in the Terms of Reference for the consultancy a work plan was developed. A questionnaire was developed for each of the key areas. Those on medicinal and food (edible) plants and bush meat were simultaneously completed by the five discussion groups of five participants each with the assistance of two field agents in addition to a consultant. The study related to honey and wax was completed by the beekeepers with the assistance of a staff member at the beekeeping section in the Forestry Department. Fifty beekeepers were sampled mainly in Western Division and only a few in Lower River Division.

Interview/discussion approaches were used. In order to analyse the responses, a matrix of interviewees/group participants and responses was prepared to permit a holistic view of the situation.

A summary of the responses was prepared to indicate a general view of the situation as a whole.

2.0 Present status of "non-wood forest products" (NWFP) in The Gambia

Although The Gambia is a relatively small country with a total area of about 11 295 km (including 948 km² in-land water) it is endowed with a diversity of flora and fauna. With its characteristic Sudan savannah and woodland vegetation, it has various ecosystems such as the forest (closed and open woodland), agricultural (cropland), marine and coastal, wetland and terrestrial ecosystems. These ecosystems contain numerous flora and fauna species. To date, a high number of these species are not yet known or identified.

Because of the country's desire to protect as much of its diverse natural heritage with the aim of promoting *in-situ* conservation, it has established six national parks and nature reserves covering 3.7% of the country's total land area (37 772 hectares) with plans to increase it to 5% to include all major habitats. Currently, there are 66 forest parks with a total land area of 34 029 hectares and over 15 000 ha of forest under community management. A Ramsar site has recently been designated to cover a total area of 22 000 ha of wetland.

The only *ex-situ* facility in the country is the animal orphanage in the Abuko nature reserve. In addition, there are several coastal and marine habitats of high ecological importance in The Gambia.

The Gambia is endowed with a variety of wild flora and fauna. The available data shows that there are 117 species of mammals, about 525 species of birds representing 75 families, 47 species of reptiles and 30 species of amphibians (Murphy, 1997).

There is no reliable information on insects and lower plants. According to Murphy (1997), about 13 species of animals have become extinct over the last few years and a similar number is threatened. It has been reported that The Giant Eland was last seen in 1903 and the last elephant was killed in 1913.

Forests are important natural resources containing numerous species of flora providing food and medicine, habitat for numerous species of fauna with great potential for honey and wax production. There are 150 plant species identified in The Gambia. Currently, 43% of the country's land area (505 300 ha) is under forest cover with woodland accounting for 10% and the remainder consisting of savannah woodland and mangrove forests estimated to cover 67 000 hectares. During the course of the century, The Gambia's forest ecosystem has gradually changed from being a dense and natural diverse environment to its present bare state. The major extraneous factor affecting the variability of vegetation is human influence, in the form of

rampant bush fires that have devastated large areas of former dense woodlands and the inappropriate agricultural cultivation systems (shifting cultivation) which also plays a part in turning woodlands into secondary forests.

Although the total forest area remains the same, it has in most part been degraded and has greatly declined in the species composition. No data is available to indicate how many plant species are extinct or near extinction. It is however known that several species of high economic value are threatened. Due to the transformation of the ecosystems, some species might have been replaced by the more tolerant ones.

To arrest this precarious situation of rapid forest degradation and destruction, which could lead to loss of its biological diversity, the forestry sector has adopted new strategies and formulated a new more comprehensive forest policy. The main goals of this policy are to:

1. reserve, maintain and develop forestland resources covering at least 30% of the total land area which is capable of protection;
2. ensure that 75% of the forestlands are managed and protected according to forest management principles;
3. ensure that sufficient supply of forest produce, needed by both the urban and rural population, is available through rehabilitation of forestlands and the establishment of fast growing plantations and wood lots.

The Strategies are to:

- a) promote multiple use forestry, apply better extension methods, intensify community forestry.
- b) identify campaign issues on bush fires, promote public, governmental and NGO institutions, participation, use political influence.
- c) promote community forestry agreements through support to communities and legislation.

3.0 The exploitation of honey bees in The Gambia

"And from the fruit of date palm and the vine, ye get out strong drink and wholesome food: behold, in this is also for those who are wise", (67).

"And they lord taught the bee to build its cells in hills, on trees and in men's habitations", (68).

"Then to eat of all the produce (of the earth) and follow the ways of they lord made smooth, their issues from within bodies drinks of varying colours, wherein is healing for men: verily in this is a sign for those who give though", (69).

The Holy Quran Sura 16 (An-Maw) Verses 67-69

In every part of The Gambia can be found natural habitat for the honeybee (*Apis mellifera*). Bees are exploited in all parts of The Gambia for economic, social and cultural reasons. In general, nectar and pollen are abundant especially along riverbanks and its tributaries (fresh water bodies), within the mangrove forests and the agro-forestry systems. Locally, fresh water is the most important factor that determines the bee population in a particular place. According to Nikolaus Bieger (1998), the behaviour of the species *Apis mellifera*, which is the species found in The Gambia, depends not only on its genetic characteristics but also external factors such as:

- Massive disturbance by humans, animals, menace of bush fire and other dangers, the bee colony absconds from their nests immediately or within a few days in order to find a safer place.
- Seasonal migration due to variation of forage - resources.

In The Gambia, bee colonies often migrate from the eastern part (drier part) towards the west during the dry season and go back eastward during the wet season.

3.1 Traditional methods of bees exploitation

3.1.1 Honey hunting

Honey hunting is widely practised all over The Gambia mostly by men who go and look for bee-colonies in their natural habitats (hollow trees, branches, termite hills). Because of the aggressive defence-behaviour of the bees, honey hunters kill the colony by smoking out the nests and burning the bees with fire. By burning the bees, the honey hunter avoids being stung. The use of fire by honey hunters is an important cause for bush fires.

3.1.2 Traditional beekeeping

Traditionally, the beekeepers in The Gambia use logs or grass (Baskets hives) to build their cylindrical hives (local kumbo). These can be found in all parts of the country. Grass hives are more common as useable logs are difficult to obtain in certain parts of the country. By comparison, log-hives are more durable and therefore more profitable than the grass-hives. Grass hives are only usable during the dry season.

Mostly, beekeepers site their hives at a safe distance from human settlements. This way, they can protect them from bush fires or theft. Honey theft is common practice in The Gambia. The beekeepers know very well that forage availability influences the behaviour of bees, therefore, they take account of this in siting their hives for ease of managing their colonies. Also important to them are flowering plants and season.

Protective cloth, smokers and other equipment are rarely used by traditional beekeepers due to the cost involved, even though they are locally produced in the country at the following prices:

Overall	- D250
Smoker	- D150
Boots q	- D270 per pair
Gloves	- D 70

Because traditional beekeeping is an off season activity practised by low income earners in the countryside, it does not attract much financial investment.

Due to the recognition of the important negative impact associated with traditional beekeeping (killing of bees, bush fires, deforestation) on the environment, the rural population is offered better opportunities by introducing new technologies and modern appropriate beekeeping methods by the Government through the Forestry Department and non-governmental organizations (NGOs). The Forestry Department has put the beekeeping section under the technical services unit. This section's mandate includes training of the rural population, awareness creation, information and technical support to individuals involved in beekeeping countrywide. Forestry department and other agencies have been providing training and material support to individuals and groups they work with. To date, the following NGOs and CBOs are involved with beekeeping in the country:

- The Action Aid
- The Christian Children fund (CCF)
- The National Beekeeper Association
- The Danida beekeepers Association
- The Gambia Co-operative beekeepers Association
- GAFNA - The Gambia Food and Nutrition Association
- The Gambia - German Forestry Projects

- Caritas
- Association of farmer Educators and Traders (AFET)
- Gambia Agricultural Rural Development Agency (GARDA)
- Catholic Relief Services (CRS)
- Peace Corps Volunteers (PCV)
- Gambia - German Forestry Projects

The actual number of persons trained and material supplied by these agencies could not be obtained due to lack of proper record keeping. The number of active beekeepers could also not be established due to time factor, information is not readily available from the office - records. Types of modern hives in use in The Gambia are:

- The Kenyan Top Bar (KTB) The objective of introducing the KTB was to provide the beekeepers with a more efficient hive that can be made from locally available materials and which has more advantages than the traditional hives. KTB costs three hundred dalasis (D300 = \$30). This seems too costly to the small-scale farmer. The KTBs are usually supplied to individuals or groups by supporting agencies.
- The Dadant hive - This hive type could not be popularized in The Gambia because of its cost (D600 = \$60) and the specialized method required for its management.
- Zambian Top Bar hive.
- Lantroth hive.
- Cylindric metal-sheet hive - This was recently introduced in the country by Nikolans Bieger for a trial period. It is so far the cheapest but its suitability to local conditions is yet to be known. (NBA 1999).

3.1.3 Socio-cultural aspects of bee exploitation

Until very recently in The Gambia, bee exploitation was an exclusively male oriented business. Thanks to the intervention of Government, NGOs and CBOs, women are now gradually being trained and entering into the business. Today, 25 women have been trained and all of them are active beekeepers (NBA 1999).

Honey and wax are important commodities in rural Gambia. Low cash income earners, especially in rural areas, use honey as sweetener instead of sugar. Newly born babies are given diluted honey, which is believed to make them more intelligent (group discussion, 1999). Honey is used for treatment of various diseases especially babies stomach pain, the antiseptic effect of honey is used to heal wounds (Baba Njie Bojang-Brikama 1999).

Honey is associated with pleasure. It is often said in the local language that he who has honey in his mouth always brings good news. Wax is widely used by cobblers as a waterproof in jujus and to smooth their needles.

3.1.4 Socio-economical aspects of bee exploitation

The production of honey and wax by honey hunters belongs to the supplementary traditional activities, such as game hunting, fishing, gathering and so on. These off-season traditional economic undertakings are complementary and are often combined.

Honey hunting in The Gambia is usually not for profit-maximization but a necessary risk-minimization for survival. This strategy of risk-minimization for survival has made the rural population specialize in honey hunting and beekeeping. For many small-scale farmers, the production of honey is the only source of off farm cash income. Therefore, honey hunting and beekeeping play significant roles in the rural household economy.

3.1.5 Annual honey harvest in The Gambia - 1996-1998

1996 40 tons
1997 48 tons
1998 60 tons

In The Gambia Honey is measured in volume 1 litre = 1.5 kg (source NBA 1999). The average producer price for honey is twenty Dalasis per kg (D20 = US \$2).

3.1.6 Market and marketing of bee products

To date, many Gambians have not responded positively to the potential honey has in the country. The small scale structures of honey production have neither been able to satisfy the local market nor compete with the big and highly specialized producers in other parts of the world. A good part of the honey produced, is consumed by the producers themselves and surplus is sold locally.

Besides the problem of gathering and quality, the continuous supply of honey to the local market is a problem. This is because the honey flow is seasonal (dry season) and there are no appropriate storage facilities to bridge the seasonal gaps. Thus these numerous problems in beekeeping are important factors which hamper the further development of beekeeping in The Gambia.

3.1.7 Beeswax production

Wax production continues to be seen as a secondary objective by a majority of the Gambian beekeepers. Many are not even aware of the commercial value of beeswax and the selling point at NBA Headquarters.

Because most of the beekeepers have a limited number of hives to operate and their extraction method is not effective, the quantity and quality remains relatively low. A majority of them only produce enough wax to put in their new hive frames. Those who produce more than their domestic requirement sell to local markets.

The survey of 50 beekeepers revealed that 35 of them (70%) produced between 5-10 kg wax, 8 of them (16%) produced between 10-20 kg wax, 5 (10%) produced between 20-25 kg wax and only 2 (4%) produced above 25 kg wax.

The marketing of beeswax remains localized and uncoordinated. According to NBA, 80% of the wax produced in the country is traded locally within the production site, 15% is sold at the weekly markets ("Lumo") across the country, 3% of the total annual wax produced in the country is sold at the NBA and the remaining 2% could not be accounted for (NBA 1998). Beeswax could not meet the local demand. The price for a kilogram ranges between fifteen Dalasis (D15) and forty-five Dalasis (D45) depending on the location (NBA 1999).

In The Gambia at present, only one person (Paul, from Sukuta) specializes in wax utilization for making shoe-polish and production of various medicines that are sold locally. According to him, his home industry is constrained by both the quality and quantity of wax available.

3.2 In-country information on food plants in The Gambia

From the Garden of Eden to the Wild, mankind has been plucking ripe fruits from trees, eating succulent roots/tubers, fresh nuts, seeds and tender leaves as a source of food. Wild plants in

the forest are a very important source of food security for many Gambians, especially those living in the countryside.

Due to the limited survey area, time factor, financial constraints, lack of well-documented material on this subject, only the most important and widely known food plants are mentioned. An additional list of less widely known but important plant species is also presented.

1. Adansonia Digitata - Sito(m) Bin(w) Boki(f) Bubak(j)

Family: *Bombaceae*

Food uses: Young fresh leaves are cooked as a vegetable. Dry leaves are pounded into a powder which is used in soup and also mixed with sorghum, leaves are also used in sauce preparation. The fruit is either eaten raw, soaked in water and taken as an appetizer used for ice making.

2. Anacardium Occidentale - Kasuowo(m) Kassu(w) Bukagu(j)

Family: *Anacardiaceae*

Food uses: The cashewnut is roasted and the kernel is extracted and eaten. The ripe apple (fruit) is eaten raw or juice is extracted for preparation of beverages and liquor. The seeds are roasted and eaten also cooked as soup. The fruits and nuts are important commodities for the local market.

3. Annona Senegalensis - Sunkungo(m) Digor(w)Butor(j) Dokami(f)

Family: *Annoneceae*

Food uses: The ripe fruit is eaten raw.

4. Balamites aegyptiaca - Sumpo(m)(w)

Family: *Balanitaceae*

Food uses: The ripe fruit is eaten raw or dried and eaten. The nut is roasted, and kernel extracted and eaten. The fruit pulp is used as a beverage.

5. Bombax costatum - Bunkungo(m) Kattupa(w) Jomi(f) Bunabu(j)

Family: *Bombacaceae*

Food uses: The young leaves are dried and pounded, then used with coos. Also the young flower is dried and pounded, then used with coos.

6. Borassus Aethiopium - Sibo(m) Sibi(w) Dubbe(f) Dul(j)

Family: *Palmae*

Food uses: The young fresh shoots / roots are eaten raw or cooked. The juice in the immature seed is consumed, the young fresh terminal bud is eaten raw. The fruit pulp is eaten raw or roasted.

7. Ceiba Pentandra - Bantango(m) Benteng(w) Bategehi(f) Busana(j)

Family: *Bombacaceae*

Food uses: The young leaves are cooked and used as soup, or dried and pounded and used with coos.

12. Detarium Senegalensis - Tallo(m) Detah(w) Boto(f) Bungungut(j)

Family: *Caesalpinaceae*

Food uses: The fresh ripe fruit is eaten raw.

13. Detarium Mierocarpum - Wonko(m) Wanta(w) Mobdey(f) Mounhayona(j)

Family: *Caesalpinaceae*

Food uses: The fresh ripe fruit is eaten raw.

14. Dialium Guineanses - Kosito(m) Solomsolom(w) Mako(f) Butara(j)

Family: *Caesalpinaceae*

Food uses: The mature ripe fruits are eaten raw. The young fresh leaves are chewed.

15. Elaeis Guineensis - Tego(m) Tir(w) Tuguhi(f) Bunak(j)

Family: *Palmaceae*

Food uses: The seeds are eaten raw. Palm Oil is produced from the seeds. Oil is extracted from the seed (Palm Kernel Oil). Palm wine is tapped from the base of the fruit or terminal bud.

16. Ficus Gnaphalocarpa - Sotokoyo(m) Bot(w) Jiben-yadeh(f) Bupundum(j)

Family: *Moraceae*

Food uses: The ripe fruits are eaten raw or cooked in soup.

17. Moringa Oleifera - Nedebayo(m,w) Nebeday(f)

Family: *Moringaceae*

Food uses: Though an exotic species, Moringa is widely planted in many forest types in the Gambia. The leaves are cooked for soup. The young leaves and fruit are prepared as vegetable.

18. Parinari Excelsa - Mampato(m) Mampata(w) Mopatade(f) Busongay(j)

Family: *Rosaceae*

Food uses: The fresh fruit when ripe is eaten raw or pounded and cooked as porridge.

19. Parinari Macrophylla - Tamba(m)Nyau(w) Naudi(f) Bei(j)

Family: *Roaceae*

Food uses: The fresh ripe fruit is eaten raw. The nut in the seed is eaten raw.

20. Parkia Biglobosa - Neto(m) Nette(w) Netteh(f) Boutifa(j)

Family: *Mimosaceae*

Food uses: The ripe fruit is processed into confectionery - The dried pounded fruit is used as flour. The pulp when soaked in water, and salt or sugar added gives a nice drink.

21. Sclerocarya Birrfa - Kuntang jawo(m) Birr(w) Beri(f) Findibaga(j)

Family: *Anacardiaceae*

Food uses: The fruit when ripe is eaten fresh. Can intoxicate when eaten in larger amounts.

22. Sopondias Mombin - Ninkongo(m) Ninkon(w) Chaleh(f) Bulila(j)

Family: *Anacardiaceae*

Food uses: Ripe fresh fruits are eaten raw.

23. Tamarindus Indica - Timbungo(m) Dakhar(w) Dabe(f) Budahar(j)

Food uses: The fruit pulp is soaked in water and squeezed to make a drink. The pulp is added to soup. It is of high commercial value.

24. Ziziphus Mauritiana - Tomborongo(m) Sedem(w) Dobi(f) Busedem(j)

Family: *Rhamnaceae*

Food uses: Fruits are eaten fresh or dried.

NB The source of information in this section is obtained from the same group discussion (GD) at the same time as that of the medicinal plants. Therefore they are not indicated to avoid repetition.

3.2.1 Less widely known food plants in The Gambia

1. Family - *Amaranthaceae*, species - *Phlixoxeras rermialavis* - Singindo(m)
2. Family - *Anacardiaceae*, Bembo(m) L F
3. Family - *Anacardiaceae*, species - *Lannea Microearpa* F
4. Family - *Anacardiaceae*, species *Pseudospondias Mccroarpa* - Mendiko(m) F
5. Family - *Annonaceae*, species - *Hexalobus monopetalous* - (some(m) F
6. Family - *Asclepiadaceae*, species - *Leptadenia hastata* - sora(m) L shoot
7. Family - *Boraginaceae*, species - *Cordia senegalensis* - Tamboran(m) Fruits
8. Family - *Caesalpinaceae*, species - *Cassia occidentalis* - (Kassala(m) seeds, species - *Cassia tora* - Jambanduro (m) L
9. Family - *Capparidaceae*, species - *Crataera religiosa* L
10. Family - *Celastraceae*, species - *Maytenus senegalensis* F,FL
11. Family - *Combretaceae*, species - *combretum tomentosum* (kuboo (m) FR
12. Family - *Combrelaceae*, species - *Guierea senegalensis* - kunye(m) L
13. Family - *Cacarbitaceae*, species - *cacamis melo* - F
14. Family - *Euphorbiaceae*, species - *Antidesnia venosum* F
15. Family - *Fabaceae*, species - *Taphrosia platycarpa* F
16. Family - *Hypericaceae*, species - *Psorospermum senegalensis* L
17. Family - *Loganiaceae*, species - *strychnos spinosa* L
18. Family - *Moraceae*, species - *Treculia africana* F S
19. Family - *Palmae*, species - *phoenix reclinata*: (Palmwine) F
20. Family - *Rutaceae*, species - *Fagara zanthoxyloides* L
21. Family - *Sapindaceae*, species - *Aphania senegalensis* F
22. Family - *Sapindaceae*, species - *Paulinnia pinnata* L
23. Family - *Simaroubiaceae*, species - *Hannoha undutlata* F
24. Family - *Verbenaceae*, species - *Lippia chevalieri* L stem

Sources: (from the listed literatures Reviewed)

F = Fruits, FL = Flowers, L = Leaves, S = Seeds

3.3 In-country information on bushmeat

Bushmeat has become a very important source of protein in our diet. In The Gambia, the source of bushmeat could be categorized in four groups: terrestrial, primates, avi-fauna and marine. The most important and commonly eaten ones are listed below:

Bushmeat:

Terrestrial

- Warthog/Bushpig
- Antelopes (sitatunga, duikers, guzelles, bush buck, water buck)
- Equana lizard
- Canecutter rat, procupire, Jackal

Primates

- Red patas monkey

Avi - Fauna (Birds)

- Pigeons
- Marabout Stalk
- Geese/ducks
- Bustards
- Bush fowl/francolim
- Guinea fowl
- Water fowl
- Horn bills (black + White and yellow-billed)
- Rupian vultures

Marine

- Dolphin
- Manatees
- Crocodiles
- Monitor Lizard

Source: Department of Park and Wild Life Management (Sept. 1999)

Source: (Kassama L, Parks and Wild Life Department Abuko - 1999)

3.4 Common medicinal plants in The Gambia

"Every plant grown on the surface of the Earth has a medical property/use" (discussion groups). With this cultural belief, it is impossible to provide a complete list. Therefore, the choice of species selected from each family is generally based on the amount and the scale of importance of information available, such as distribution/occurrence and usage. Some other species were included if they showed special interest.

3.4.1 Medicinal uses

ANNONACEAE

In this family only five out of 24 genera mentioned in the flora of West Tropical Africa are identified in the Gambia. These are: Uraria cheistophohis, xylopias, Hexalobas and Annona. Out of these five genera only two species are indigenous in the Gambia which are Uraria chame and Annona Senegalensis. They are common under shrubs and found mainly in the Western Division. The others are exotic (G M Hallam 1979).

Medicinal use of *Annona Senegalensis*: The juice is used for treating:- Bad stomach pain, diarrhoea, and dysentery. The rope like miner bark is tied around the waist to prevent diarrhoea. The leaves are soaked in water and used to wash the face to cure eye-pain. (G.D 1, 3, 4; Sept. 1999).

MORINGACEAE

In this family, only the species Maringa oleifera is identified in the country. It is an exotic species found mainly in compounds and agro-forestry systems.

Medicinal uses: Leaves boiled in water and drunk for treatment of headaches and colds. Juice squeezed from the leaf and dropped in the ear for treatment of earache. (G D 1, 2, 3, 4; Sept. 1999)

POLYGALACEAE

In this family, only two genera are identified in the Gambia these are securidaca and polygala. Here only securidaca longiped - unclata species is well-known and used locally.

SECURIDATA LONGIPENDUNLATA - juto(m) foug (w) alali (f)

Medicinal uses: Well-known treatment for snakebite. The leaves are boiled in water and drunk when bitten by a snake. It makes a person vomit and in this way gets rid of the venom. Also if sprayed by a spitting cobra, a person can wash his eyes with the water. The juice from the leaves and roots are used to treat boils, relief body pain, treat gonorrhoea, sleeping sickness, dizziness and roots are scattered to deter snakes. (G D 2, 4, 5; Sept. 1999).

OCHNACEAE

Out of 3 genera identified here (Ochna, lophira, sauragesia) the species, lophira lauceolata is commonly known for its medicinal uses.

LOPHIRA LANCEOLATA - Machichero(m) Manayiri(M,W,F)

Leaves are boiled in water and used for drinking and washing to help pregnant woman during labour. The inner bark is used to treat headache. (G D 1, 2, 5; Sept. 1999).

COMBRACEAE

This family is well known and well represented by many species. genera of Combretum, Guiera and Terminalia are common and widely distributed in the country.

COMBRETUM GLUTINOSUM - jambakatogo(m) rat (w) doki (f)

This species is widely spread in Central River and Upper River Divisions.

Medicinal uses: The leaves are boiled in water, and given to a person for the treatment of cold, fever, weak muscles, tooth ache, constipation, coughing, yellow fever, headache and chest pain. Also used as cattle drench to get rid of worms in cattle. (G D 1, 2, 3, 4, 5; Sept. 1999)

COMBRETUM MICRANTHUM - Baro Kinkinliba (m) Rat, skheou, Segweon (w) Talli (f)

Medicinal uses: The leaves are boiled in water. This water is drunk to cure coughs. The combined extract from the young leaves, inner bark and the roots are used to treat wounds. (G D 1, 2, 3, 4, 5; Sept., 1999)

COMBRETUM PANICULATUM - *Jambaba (m)*

Medicinal uses: Leaves boiled in water and taken for treatment of stomach-aches and irregular menstruation and to lessen the pain in women during labour.

GUIERA SENEGALENSIS - Kankanago, Mamakunkoyo(m) Ngerr(w) Geloki Gehlod(f)

Medicinal uses: The leaves are boiled in water and after adding sugar, it is drunk and/or used for bathing, to treat coughs, chest pains, stomach pain, yellow fever and venereal diseases. (G D 1, 3, 5; Sept. 1999)

TERMMALIA MACROPTERA - Wollo(m) Wolo(w) Bodeh, Kirleme(f) Buanga(j)

Medicinal uses: Boil the leaves in water and drink it for treatment of coughs. Dry the leaves, pound them and add milk to the powder, drink it for treatment of serious diarrhoea. Boil the roots and drink it for the cure of stomach pain. (G D 2, 3, 5, Sept. 1999)

TERMINALIA ARICEUNOIDES: *Wollokolyo(m)*

Medicinal uses: The water of the boiled young leaves is given to women with irregular menstruation. The inner bark and roots are put in cold water and taken for treatment of yellow fever. When a person is burned by fire, the pounded inner bark can be applied on the burned area of the body as treatment. (G D 2, 4; Sept. 1999)

HYPERICACEAE

In this family only two genera are identified in the Gambia. The species Harungana maduscariensis seems not to be very common and not well known unlike the species Psorospermum copymbiterum, which is very well-known especially for its medicinal uses:

PSOROSPERMUM CORYMBITERUM - *Katijankumo(m)*

Medicinal uses: This is a well-known species used in the treatment of small pox in the Gambia by boiling the roots in palm oil and mixing with milk. The combination of its leaves and roots is boiled in water and taken to cure loss of blood and several body sicknesses, coughs and stomach ache. (G D 1, 2, 3, 4, 5; Sept. 1999).

STERCULIACEAE

Out of the 17 genera of this family mentioned in the "flora of west Tropical Africa", five are identified in The Gambia: Dombeya, Melachia Waltheria Sterculia and Cola. Of these five, only three are widely known for their medicinal uses.

WALTHERIA LANCEOLATE

Medicinal uses: The combination of its leaves and that of Poullunia pinnate are squeezed in water, this is used to bath as treatment for fever. Its leaves and roots are boiled in water and taken to treat coughs and diarrhoea. Its roots are pounded and mixed with water for treatment of toothache and earache. (G D 1, 3, 4; Sept. 1999).

STERCULIA SETIGERA *Kunkusito(m)* *Mbep(w)* *Bobori(f)*

Medicinal uses: The bark is boiled in water and taken to treat diarrhoea. (G D 3, 4, 5; Sept.1999)

COLA CORDIFOLIA - *Tabo(m)* *Tabba(w)* *Tabajeh(f)*

Medicinal uses: The bark is boiled in water and taken to treat constipation, and gonorrhoea. The juice is used to treat sore eyes and its fermented leaves in water are taken to treat leprosy. (2, 3, 5; Sept 1999).

BOMBACACEAE

All the three genera mentioned in The Flora of west Tropical Africa are found in The Gambia. These are Adansonia, Bombax and Ceiba

ADANSONIA DISITATA:

This is a very important and widely known species for its medicinal uses. The powder from the leaves is used to treat coughs/burns. The rope from the inner bark is tied around waist for treatment of backache. The fruits are soaked in water and taken to treat stomach-ache, general body pain and as an appetizer (G D 1, 2, 3, 4, 5, sept. 1999).

CEIBA PENTAIDRA

Medicinal uses: Boil the bark in water and drink it to prevent abortion. The steam is inhaled for treatment of headache and toothache. (G.D 1, 3, 5; Sept. 1999).

EUPHORBIACEAE

This is one of the most diverse families mentioned in The flora of west tropical Africa with 65 genera identified. Only 14 are identified in The Gambia. Only 3 species are widely known for their medicinal uses.

BRIDELIA MICRANTHA: - Bisako(m) Wulakir(j)

Medicinal uses: Juice extracted from the inner bark is used for treatment of stomach-ache, dysentery and diarrhoea (G D 3, 4, 5; Sept. 1999).

IATROPHA CURCAS - Tubab Tabo(m) Kidi(f) Tabanani(w)

Medicinal uses: The latex is used for treatment of stomach-ache, especially known for the its use in deworming. (G D 1, 2, 3' Sept. 1999).

CAESALPINIACEAE

The flora of Tropical west Africa mentioned 58 genera in this family. In the Gambia, 16 are identified but only 7 species are widely known for their medicinal uses.

CORDYLA PINNATA - Wulakonoduto(m) Dimb(w) Duki(f)

Medicinal uses: The bark is boiled in water and it is taken for deworming and treatment of stomach-ache. The roots and fruits are boiled together for treatment of chest pain. (G D 1, 3, 4, 5; Sept. 1999).

PILIOSTIGMA THONNINGII: Fara(m) Gigis(w) Barki(f)

Medicinal uses: The flowers are ground to powder which is used for treatment of coughs, the juice from the inner bark is used for treatment of fresh wounds. The young leaves are soaked in water for treatment of eye pain. (G D 1, 2, 3, 4; Sept. 1999).

AFZELIA AFRICANA - Lenko(m) Fok(w) Lengue(f) Nenke(j)

Medicinal uses: Leaves are soaked in water and taken to treat stomach-ache. The leaves are boiled in water and taken to treat fatigue and bone pain. (GD 3, 4, 5; Sept. 1999).

CASSIA SIEBERIANA - Sinjango(m) Senjen(w) Sama sinjang(f)

Medicinal uses: Leaves are boiled and water taken to treat stomach-ache, general body pain, fever and malaria. The roots are also soaked in water for treatment of stomach-ache and for de-worming. (G D 1, 2, 3, 5; Sept. 1999)

CASSIA OCCIDENTALIS: -Kassala(m) Bantamare(w) Lubalup(f) Bunang Baug(j)

The juice squeezed from the leaves is taken or used for bathing for treatment of headache, fever, and backache. Seeds are roasted and ground to powder. The powder is used for treatment of rashes especially in children. (G D 1, 2, 3; Sept. 1999).

DDETARUM SENEGALENSIS: - Talo(m) Ditakh(w) Dole(f) Butckan jack(j)

Medicinal uses: The bark is boiled in water and taken to treat loss of blood. Roots soaked in water are drunk or used for bathing to relieve general body pain. (G D 1, 2, 3, 4; Sept. 1999).

DANIELIA OLIVERI: - Santango(m) Santang(w) Cherebeh(f)

Medicinal uses: The bark is dried and pounded - the powder is mixed in water and taken for treatment of coughs. The bark is boiled in water and taken for treatment of constipation and general body pain. (G D 1, 3, 4, 5; Sept. 1999).

TAMARINDUS INDICA: Timbugo(m) Dakal(w) Jammeh(f)

Medicinal uses: The fruit is soaked in water and taken to treat constipation, general body pain and for de-worming. The leaves are boiled in water and used for washing face to treat short-sightedness Unripe fruits are boiled and taken for treatment of fever. (G D 1, 2, 3, 4; Sept. 1999).

MIMOSACEAE

In this family, 24 genera are noted by The Flora of Tropical Africa, 13 of them are identified in The Gambia - and 7 species are widely known for their medicinal uses.

PARKIA BISLOBOSA -Neto(m) Nette(w) Nerre(f)

Medicinal uses: The leaves and roots are boiled together for treatment of tooth ache, and sore eyes. The powder from the bark is used for treating lack of ejaculation. Pulp from the fruit is soaked in water and taken for treatment of snakebite and stinging insects. (G D 1, 2, 3, 4, 5; Sept. 1999).

ALBIZZIA FARRUGINEA - Sama Neto(m) Samba Tene(w)

Medicinal uses: The juice squeezed from the bark is used for treatment of wounds and prevention of infections. The leaves are squeezed in water and taken for treatment of epilepsy. (G D 1 2 4 Sept. 1999)

PROSOPIS AFRICANA - Kyanbo(m) Her(w) Kohi(f) Buse-segne(j)

Medicinal uses: The bark and leaves are boiled in water to rinse the mouth when treating toothache. (G D 1, 2, 3, 4, 5; Sept. 1999).

DICHROSTACHYS GLOMERATE - Kurulungo(m) Sinke(w)

Medicinal uses: leaves are boiled in water and the steam is inhaled for the treatment of toothache. Also used for washing mouth for treatment of toothache. (G D 1, 2, 3; Sept. 1999).

ACACIA ALBIDA - Bransango(m) Kada(w) Cheski(f)

Medicinal uses: Powder from the bark is mixed with water and used to wash the mouth when treating toothache. Roots are soaked in water and taken by old men for sexual strength. (G D 1, 2, 5; Sept. 1999).

ACACIA SCORPIOIDES - Bano(m) Goniake(w) Guadi(f)

Medicinal uses: The bark is soaked in water and used for mouth washing when treating toothache. The bark is boiled in water and taken to treat dysentery. (G D 1, 3, 4; Sept. 1999)

ACACIA MACROSTACHYA: - Sinoko(m) dedd(w) chidi(f)

Medicinal uses: Inner bark is soaked or boiled in water for mouth washing in treating toothaches. Could also be taken to treat stomach-ache, (G D 3, 4, 5; Sept. 1999).

PAPILIONACEAE

'The flora of west Tropical Africa' listed 80 genera of this family. Thirty genera are identified in the Gambia. Many of these genera are annual herbs. Only 4 species are widely known and used for their medicinal uses.

PTEROCARPUS ERINACEUS - Keno(m) Ven(w) Baleh(f)

Medicinal uses: The bark is chewed and the juice swallowed for the treatment of serious stomach-ache and constipation, the roots are soaked in water and taken for treatment of general body pain. (G D 2, 3, 5; Sept. 1999).

ERYTHRINA SENEGALENSIS - Ndolingo(m) Boti-jan(w) Botiola(f) Fusente Friak(j)

Medicinal uses: Leaves are squeezed and crushed to extract the juice which is applied to wounds for treatment. Also the roots are smashed for the same purpose. (G D 1, 2, 3; Sept 1999).

STYLOSANTHES MUCRONATA - Nbono(m) Damel(w)

Medicinal uses: The whole plant is boiled in water, sugar is added and it is drunk for the treatment of chest pain. The leaves are boiled in water and taken to clean the stomach and as a blood tonic. (G D 1, 2, 3; Sept. 1999).

DESMODIUM VELUTINUM - Nakaburay(m)

Medicinal uses: The leaves are applied to cuts to stop bleeding. (G D 1, 2, 3; Sept. 1999).

MORACEAE

'The flora of west Tropical Africa' noted 12 genera of this family with only three genera identified in The Gambia - Cholorophora, Antiatis and Ficus, four species in this family are widely known for their medicinal uses.

FICUS EXASPERATA - Soto - Nganya(m) Nyad Jeh(f)

The leaves are boiled in water and the steam is inhaled for the treatment of chest pain. (G D 1, 2, 4; Sept. 1999)

FICAS CARPENSIS - Sotokuruwo(m) Sotohajanna(w) Iberimirum(f)

The leaves are soaked in water and taken to treat chest pain. (G D 1, 2, 3, 4; Sept. 1999).

FICUS VOGELII - Kobojongo(m) Dob(w) Bupokapoka(J)

The leaves and bark are boiled together in water, and given to pregnant women to lessen pains. Leaves are boiled in water and taken for the treatment of stomach-ache. Juice extracted from the bark is rubbed in the skin for treatment of small pox. (G D 1, 3, 4; Sept. 1999).

ICACINACEAE

Twelve genera in this family are noted in 'The Flora of west Tropical Africa'. Only one icacina is identified in The Gambia.

ICACINA SENEGALENSIS - Mankanaso(m) Bankanas(w)

Medicinal uses: The leaves are soaked or boiled in water, which is used for washing one's face to treat eye infection. (G D 1, 3, 4; Sept. 1999)

LORANTHACEAE

Nine genera of this family are noted in "The Flora of west tropical Africa," of which only one is identified in The Gambia.

TAPINANTHUS BANGWENSIS - Dungo(m) Bentenkeh(w)

Medicinal uses: The leaves are dried and pounded to powder. The powder is eaten to get rid of worms. The powder from the leaves and flowers is eaten for to treat swelling. (G D 1, 3, 5; Sept 1999).

MELIACEAE

Eleven genera of this family is noted in "The Flora of West Tropical Africa". Out of these, only five genera are identified in The Gambia, of this five only two are widely known for their medicinal uses.

KHAYA SENEGALENSIS Jalo(m) Khaye(w) kaye(f)

Medicinal uses: The bark is soaked or boiled in water and taken to treat fever, to improve body strength and to treat body rashes. The bark and roots are boiled in water and taken for treatment of stomach-ache. It is also used widely for abortion. (G D 1, 2, 3, 4, 5; Sept. 1999).

AZADIRACHTA INDICA Yirinding Kunango(m)

Medicinal uses: The local people have found a lot of medicinal properties in this widely used exotic species. The young leaves are chewed for the treatment of Malaria. The leaves are boiled and taken for treatment of stomach-ache and Yellow fever and for de-worming. The steam is inhaled for treatment of rheumatism. (G D 1, 2, 3, 4, 5; Sept. 1999).

SAPINDACEAE

Twelve genera of this family are noted in The Flora of west tropical Africa! Four of these are identified in the Gambia and only one species is known widely for its medicinal uses.

PAULLINIA PANNATA Jambalulo(m) Kep(w) Fungo(f)

The leaves are boiled in water for treatment of internal and external swellings. (G D 1, 3, 5; Sept. 1999).

ANACARDIACEAE

Seven out of the 14 genera in this family mentioned in The Flora of west Tropical Africa are identified in The Gambia. Five species of these are widely known for their medicinal uses.

MANGIFERA INDICA Duto(m) Mango(w)

Medicinal uses: The leaves are boiled in water and taken for the treatment of chest pain. Steam is inhaled and water used for mouth wash to treat toothache. (G D 1, 3, 4; Sept. 1999).

ANACARDIUM OCCIDENTALE - Kassuwo(m) Kassu(w)

Medicinal uses: For treatment of high blood pressure and diabetes, the leaves are boiled in water and drunk. (G D 3, 4, 5; Sept. 1999).

SPONDIA MOMBIN - Ninkon(m,w) Chaleh(f)

Medicinal uses: For the treatment of leprosy, the roots are soaked in water and drunk. (G D 1, 3, 4; Sept. 1999).

SCIEROCARYA BIRREA - Kuntan Jawo(m) Birr(w) Erie(f)

Medicinal uses: The leaves are boiled in water and used for mouth washing when treating toothache. Ash of the bark and leaves can be rubbed on the affected part of the gum for the treatment of toothache. Bark is boiled in water and taken to secure abortion and also to treat piles. (G D 1, 2, 3, 4, 5; Sept. 1999).

LANNEA ACIDA - Bembo(m) Sonn(w) Tingoli(f)

Medicinal uses: The bark is soaked in water and taken to get rid of a certain type of worm in the stomach causing frequent spitting. (G D 1, 3, 4, 5; Sept. 1999).

HEERIA INSIGNIS - Koron - Kondo(m) Gyolo - Kndimi(f)

Medicinal uses: The leaves are boiled in water and taken for the treatment of chest pain. The powder of the inner bark is applied to wounds. (G D 3, 4, 5; Sept. 1999).

LOGANIACEAE

In this family, six genera are mentioned in the flora of tropical west Africa. Only three are identified in the Gambia and only one is widely known for its medicinal uses.

STRYCHNOS SPINOSA - Patakule(m) Fatakule (f) Utog(j)

For treatment of stomach-ache, and for strengthening of penis, the roots are boiled and drunk together with boiling water. The leaves are boiled or soaked in water for the treatment of sore eyes. Powder from the leaves is applied on wounds. (G D 1, 2, 3, 5; Sept. 1999).

APOCYNACEAE

Thirty seven genera in this family are noted by The Flora of west Tropical Africa. Only eight genera are identified in The Gambia and only three are widely known for their medicinal uses.

LANDOLPHIA HENDELOFII - Folay(m) Foleri(f) Buiembabu(j)

Medicinal uses: The latex is used to get rid of insects in the ear. Fruits are used as an appetizer. (G D 1, 2, 3, 4; Sept. 1999).

SABA SENGALENSIS - Kaba(m) Mada(w) Lare(f) Findipuff(j)

Medicinal uses: The leaves are boiled in water and inhaled under cover to get rid of aches and pains. Also the water is drunk as a treatment for epilepsy. (G D 1, 2, 3, 4, 5; Sept. 1999).

VOACANGA AFRICANA - Wala yiro(m)

Medicinal uses: Squeeze the juice from the leaves for treatment of constipation and also for de-worming. (G D 2, 3, 4; Sept. 1999).

ASCLEPLADACEAE

Thirty three genera of this family is mentioned in The Flora of west tropical Africa. Only five are identified in the Gambia and only one is widely known for its medicinal uses in the Gambia.

LAPTADENIA ARBOREA - Sora(m) Talal(w)

Medicinal uses: The exudate from the leaves is used as snuff. Dried leaves are pounded, the powder is diluted in a salt solution and taken for the treatment of back pain, gonorrhoea and difficulty in urinating. (G D 1, 2, 3, 5; Sept. 1999).

RUBIACEAE

Ninety-one genera of this family are mentioned in The Flora of west tropical Africa. Only six genera are identified in the Gambia, of which four species are widely known for their medicinal uses.

GARDENIA TRACANTHA Tankanago(m) Bure(w) Dungali(f) Kalena(j)

Medicinal uses: The root is soaked in water and the solution is drunk for the treatment of skin boils. The dried roots are pounded and the powder is diluted in water, the solution is drunk for treatment of liver problems. (G D 1, 3, 5; Sept. 1999).

MITRAGYNA INERMIS - Jungo(m) Hos(w) Koileh(f)

Medicinal uses: The leaves are boiled and the steam is inhaled under cover for cure of fever. The leaves are used as a poultice to reduce fat tissues in the body. (G D 3, 4, 5; Sept. 1999).

MAUCLEA LATIFOLIA - Batio - foro(m) Koba(w) Dundake(f)

Medicinal uses: It is used as antiseptic for the treatment of toothache and as a prophylactic for the treatment of malaria. (G D 1, 2, 3, 4, 5; Sept. 1999).

MORUNDA GEMINATA - Batio Jungo(m) Garba(f)

Medicinal uses: Leaves are boiled in water and the solution is taken as a blood tonic. (G D 1, 3, 4; Sept 1999).

COMPOSITAE

Eighty-four genera of this family is mentioned in The Flora of west Tropical Africa. Twenty are identified in The Gambia. Most of the species are annuals and only two are widely known for their medicinal uses.

VERNONIA COLOURATA - Yiri kunango, Jamba kunango(m)

Medicinal uses: The leaves are boiled in water and the solution is given to a young lady during abortion to ease pain. (G D 1, 2, 3, 5; Sept. 1999).

VERNONIA NIGRITIANA - Jubu Jamba(m) Batientior(w)

Medicinal uses: Roots are soaked in water and the solution is taken for deworming. (G D 2, 3, 5; Sept. 1999).

SOLANACEAE

Eight genera of this family are mentioned in The Flora of west Tropical Africa. 5% of them are identified in The Gambia. Only 2 species are widely known for their medicinal uses.

PATURA SUAREOLENS - Kubejarro(m,w) Mereng(f)

Medicinal uses: When used in small quantities it is good for digestion (G D 1, 2, 3, 5; Sept. 1999).

SALANAM INDICUM - Sulu Jato(m) Diakhatu(w)

Medicinal uses: For treatment of cataracts, the roots are boiled in water and the face is washed with the solution. The juice is applied to cure boils. (G D 1, 2, 3, 4, 5; Sept. 1999).

BIGNONIACEAE

Six genera in this family are mentioned in The Flora of west Tropical Africa but only three are identified in The Gambia and two are known widely for their medicinal uses.

KIGELIA AFRICANA Sunjubaba(m) Diambal(w)

Medicinal uses: Inner flesh of the fruit is cooked and eaten for treatment of stomach-ache. (G D 1, 2, 3; Sept. 1999).

NEWBOULDIA LEAVIS - Kunjunburugo(m) Ngam(w) Sukunde(f)

Medicinal uses: Leaves are roasted and applied on boils to get rid of pus. Leaves are boiled in water and the solution is taken in for treatment of stomach-ache. (G D 1, 2, 5; Sept. 1999).

PEDALIACEAE

Five genera of this family are mentioned in The Flora of west Tropical Africa of which only one species is identified in The Gambia.

SESAMUM RADIATANUN - Beno (m) Bene(w)

Medicinal uses: The whole plant is soaked in water and the solution is taken for treatment of swollen diseases and to prevent infections. (G D 1, 2, 3, 4, 5; Sept. 1999).

VERBENACEAE

Ten genera of this family are noted in The Flora of West Tropical Africa. Out of these, only four are identified in the Gambia, and of which two are widely known for their medicinal uses.

LIPPIA CHEVALLIERI Sisline Nyamo(m) Bahe(f) mborbor(w) Bane

Medicinal uses: Flowers are used as pillow stuff to prevent headache. Leaves are boiled and taken in for treatment of stomach pain. (G D 1, 2, 3, 4, 5; Sept. 1999).

VERTEX DONIANA - Kutufingo(m) Henl(w)

Medicinal uses: For quick healing of wounds the leaves are chewed and applied to it. (G D 1, 3, 4, 5; Sept. 1999).

LABIATAE

Twenty one genera of this family are mentioned in The Flora of West Tropical Africa. Only one is identified in The Gambia. These are annual herbs and most of them are not known for any medicinal use.

OCIMUM CANUM - Fourehyamo(m) Ngumgume(w) Sukora(f) Kaoulung(j)

Medicinal uses: For treatment of serious coughs The leaves are squeezed in water and the solution drunk, it is also used as a blood tonic. (G D 1, 2, 3, 4; Sept. 1999).

ZINGIBERACEAE

Four genera of this family are mentioned in The Flora of West Tropical Africa. Only two are identified in The Gambia and one is widely known for its medicinal uses.

AFRAMMUM MELEGUETA - Belankuto(m) Suma(j)

The roots are pounded and mixed with salt and sugar for treatment of constipation and stomach-ache caused by worms. The fruits are eaten to cure gonorrhoea. (G D 3, 4, 5; Sept. 1999).

Some plants that are locally known for their medicinal uses

FAMILY	SPECIES	PLANT PART USE	REMARKS
1. Acanthaceae	<i>Asystasia gangetica</i>	Roots	Snake bite
2. Annonaceae	<i>Annona glabra</i>	Fruits & Leaves	Fever coughs
3. "	<i>Hexalobus Monopetalcus</i>	Bark leaves Roots	Bronchitis
4. "	<i>Uvaria Chamae</i>	Bark & leaves	Stomach-ache Bronchitis, fever
5. Apoaynaceae	<i>Baissea Multiflora</i>	Whole plant	Diarrhoea
6. "	<i>Holarrhena horibunda</i>	Bark	Malaria
7. "	<i>Ranvoltia vomitoria</i>	Bark, leaves & Roots	Fever
8. "	<i>Strophanthus Sarmentosus</i>	Whole plant	Syphilis
9. "	<i>Theretia nerifolia</i>	Leaves	Fever
10. Asclepiadaeae	<i>Calotropis pracera</i>	Bark & Sap	Venereal Diseases
	<i>Leptadenia hastota</i>	Sap	Backache
11. "	<i>Pergularia daemia</i>		
12. Bionniaceae	<i>Stereospermam Kunthianam</i>	Leaves & Sap	Diarrhoea
13. Boraginaceae	<i>Cardia Senegalensis</i>	Bark, leaves & Roof	Coughs
14. "	<i>Capparis tomentosa</i>	Leaves	Fatigue
15. Capparidaceae	<i>Ritchea Capparoides</i>	Leaves & Roots	Skin intector
16. "	<i>Maytenus Senegalensis</i>	Roots	Sleeping sickness
17. Celastraceae	<i>Salaci Senegalensis</i>	Bark leaves	Fatigue
18. "	<i>Salacia Senegalensis</i>	Whole Plant	Malaria stomach-ache
19. Cochlospermaceae	<i>Cochlospermum tinctorium</i>	Leaves	Malaria stomach-ache
20. Combretaceae	<i>Anogeissus leiocarpus</i>	Bark, leaves	Diarrhoea cold
21. "	<i>Combretum glutinosum</i>	& Roots	Reduce hypertension
22. "	<i>Combretum tomentosum</i>	Roots	Cough
23. Dilleniaceae	<i>Tetracera alnifolia</i>	Stem	Dysentery
24. "	<i>Tetracera potatoria</i>	Stem	Cough and Leprosy
25. Hypericaceae	<i>Psoropermum senegalensis</i>	Leaves & Roots	Fatigue
26. Icacinaceae	<i>Icacina senegalensis</i>	Leaves	Eye infection
27. Labiatae	<i>Hoslundia opposita</i>	Roots	Fever
28. "	<i>Hyptis suareolens</i>	Leaves	Malaria
29. Loranthaceae	<i>Strychnos spinosa</i>	Leaves & Roots	Swelling
30. Loranthaceae	<i>Tapinanthus bangwensis</i>	Leaves	Snake bite
31. Malraceae	<i>Sida sp</i>	Leaves	Colds
32. Tamaricaceae	<i>Tamarix senegalensis</i>	Fruits Shoots	

COMMENTS:

The above mentioned species are not as widely known and used as medicinal plants.

The use of these plants as medicine is localized. They are used by only a certain tribe or ethnic group within a locality, unlike the others earlier mentioned which are used by many tribes across the country. However, they are worth mentioning to provide the opportunity for more follow-up in subsequent work of this nature.

4.0 Description of the relative importance of selected NWFPs

The socio-economic potentials and values of our NWFPs stems from a variety of sources some of which are difficult to attach economic value to as they provide both the services and goods which cannot be marketed (they are economic externalities). There is therefore a need to develop standard criteria for valuing benefits from the NWFP in order to finalize indicators which can then be used as a basis for future NWFP evaluation.

However, in The Gambian context, medicinal plants are more important than any other NWFP. This is so, because in The Gambia hunger plays a minor role compared to the health of the population, especially in rural areas. One does not have to think that to define this as the peak of the hunger season (July - Sept.) is the same for illness (mainly malaria). Whereas the rural

population has developed strategies against hunger, they are finding it extremely difficult to cope with the malaria infestation which is claiming quite a number of lives every year.

Just as important as food plants is honey production. Rural people are not engaged in honey production for profit maximization but for risk minimization for survival.

The importance of bush-meat is declining with the decline of the species as a result of habitat destruction. Insects are not used for food in The Gambia.

5.0 Analysis of the past present and possible future trends of these NWFPs for local consumption, trade and export

Before the turn of the 20th century, The Gambia was reported to have been covered with dense vegetation with a wide spectrum of plants and animal species at different times of the year. The human population was low and engaged in subsistence farming. The forests were therefore capable of meeting the demand of this low population and offered a more reliable source of security for food and medicine. The habitats for various wildlife species and bees were also intact and thus supported reliable sources of bushmeat and honey. As the Gambian people responded to these opportunities, they became specialized in the utilization of these NWFP for survival in their own rights. The rural population knew what plant, animal and insect species were on offer and at what time of the year.

Trade and export of these NWFP was not an important issue. The societies were not market-oriented. There were abundant supplies of these products within easy reach and everybody could access it freely and easily.

As the Gambian population continued to increase (696 000 in 1973, 750 000 in 1983 and 1.2 million in 1993) home bases increased as well. The need to meet the demand of this growing population did not only reorient the societies but also changed the landscape. To feed the rapidly growing population, agricultural areas have been expanding constantly so that during the course of the century the greater part of the once beautiful forests and their supporting potential has disappeared for more practical purposes. In the past 16 years, 78% of the area of closed forests and wood savannah have disappeared in The Gambia due to annual bush fires, over grazing, cultivation or other human disturbances. These were primarily replaced by cultivated fields or some form of secondary derived savannah or weedy places. Very little of the forest closed and savannah woodlands remain intact (Bigilo, Pirang Forest Parks).

There are few relicts of the rain forest remaining further south of the country. The Kiang West district in the Lower River Division provides an idea of the type of vegetation once found further upland.

The Gambian people generally know which NWFP(s) (plants and animal species) provide them with food and medicine. These NWFP in their various forms and magnitude could be found in many places across the country, either for direct consumption or for sale. There is, however, lack of information with regard to the statistical records and overall evaluation to indicate the importance of these NWFPs' "Agriculture with Trees" the level of both individual households and at national level.

The unfortunate situation in The Gambia today as far as these NWFPs are concerned is that as their value and demand increases and gain more recognition, they are disappearing at an alarming rate, due to high rate of deforestation which stands at 3.11% annually.

At present, these non-wood forest products can not meet the demand of the local market let alone exporting them. The bulk of these products are consumed and traded locally. In a few isolated cases, one can witness cross-boarder trade along the boarder with Senegal.

With the present rate of deforestation and population growth, the future of these non-wood forest products is endangered. Should the current Government interventions pay positively, the volume of local consumption and trade will be maintained or increased. If on the other hand, the expected results are not achieved, decrease in both local consumption and trade will result. In either case exportation of these non-wood forest products is not foreseen in the near future.

Appendix - Work plan

WEEK	ACTIVITIES
Week 1	Collection and gathering of relevant material and review
Week 2	Review and development of questionnaires, selection of group discussion sites and group formation mainly in Western Division and part of Lower River Division.
Week 3	Administering of questionnaires and group discussions. Drafting of the first draft.
Week 4	Validation and final write up.

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