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Survey on the Usage of Traditional Plants Derivatives in St. Lucia

Background

This survey was part of a larger initiative - The Management of Biological Resources Project which was formulated out of the National Biodiversity Strategy and Action Plan for St Lucia. The Management of Biological Resources Project intends to formulate a process towards the continued expansion in the knowledge based on indigenous floral biodiversity. The first stage of the project commenced in April 2001. The Forestry Department and the Department of Agriculture of the Ministry of Agriculture, Forestry and Fisheries (MAFF) had joint responsibility for the execution of the project.

There are a number of components to the project including:

1. Review of status of existing floral collections assess resources committed (human and otherwise) in the collection/management of specimens and identify existing protocols in the collection/management of these specimens;
2. Development of a strategy for prioritising research through identification of floral resources of high economic value and/or special ecological value (endangered, endemic species).

The consultant was assigned to do the latter of the two components above.

Assignment and Consultant Responsibilities

As part of this assignment the consultant was expected to undertake the following activities:

- Assist in the development of a strategy for prioritising research through the identification of floral resources of high economic value and/or special ecological value (endangered,

endemic species).

- Conduct informal interviews with local vendors at sales outlets on the island of St. Lucia to acquire data related to utilization of local plant products and derivatives, with high economic value. Such plants would include lianas, resins, nuts and fruits, and herbal extracts.

The interviews had to determine the extent of use of plant material with high economic value. To obtain such the consultant would have to consider the following:

- . type of material, processed or unprocessed;
- . source and geographical location of the plant material;
- . costs incurred and quantities sold;
- . adequacy of supply and ease of access to plant material;
- . contribution to general income;
- . gender and age of interviewees, length of time involved in the industry, and involvement of family members;
- . export status including quantities exported and destination;
- . limitations and recommendations expressed by interviewee.

Method of Approach

As per the consultant's Terms of Reference (TOR) - conduct informal interviews with local vendors at sales outlets on the island to acquire data related to utilization and economic value of local plant products and derivatives. Although the TOR requested informal interviews the consultants recognized that there needed to be some level of consistency with data gathering. Due to the various limitations which informal interviews would create such as subjectivity and "unlevelled" analyses, the consultant proceeded to use both informal and formal interviews (confirmation for use made by the Department of Forest and Lands).

Formal interviews were done through the use of a questionnaire (see appendix 1) which was reviewed by the Technical Director and the Technical working group, and pretested prior to its administration on the interviewees. The survey instrument was designed to respond to the areas of concern to the Forestry Department and the Department of Agriculture of the Ministry of Agriculture, Forestry and Fisheries (MAFF) as pertain to the use of plant material with high economic value, endemic and or endangered status.

The consultant aimed at administering the questionnaires at all the main markets on the island. The following markets were visited:

- . Castries Central
- . Vieux Fort
- . Soufriere
- . Micoud

Visits to the Micoud and Soufriere did not provide sources for the information which was being investigated. Plant material of high economic value was non-existent at those markets. Nonetheless, the consultant attempted to obtain information on who was involved in the use of plant derivatives, so as to obtain information outside of the formal market setting. The consultant also applied the “follow on” technique whereby recommendations on prospective candidates for interviews were given by previously interviewed persons.

In order to obtain adequate coverage with the survey, consideration was given to the following:

1. Geography
2. Gender, age and social balance
3. Application of local knowledge

1. Geography

Since the survey had no defined boundaries for the administration of the questionnaires, the consultant divided the country into four areas. Consideration was given to the existence of markets and outlets within those areas, presence of local and extension personnel who would assist with the identification of candidates to be interviewed, and to obtain the best possible coverage islandwide.

2. Gender, Age and Social Balance

The administration of the survey ensured that subjectivity did not bias the outcome of the process. Gender, age and social background influences how persons utilize plant material of high economic and social value. One needs to determine whether the applications are different because of sex, age or level of training and social background. This would help to ensure that the survey was objective and qualitative.

3. Application of Local Knowledge

This survey depended highly on what local persons knew who are involved in this type of industry, so as to guide the interviews. Local and indigenous knowledge is most often referred to as unscientific and not considered. This survey needed to document the local knowledge in order to support scientific undertakings later.

Questionnaire Analysis

Age range of persons interviewed

The formal part of the survey was administered to 56 individuals of various ages across St. Lucia. The analysis which follows give clearer representation of the persons interviewed, their age range and gender.

AGE RANGE	INTERVIEW FREQUENCY	
	MALE	FEMALE
0-4	0	0
5-9	0	0
10-14	0	0
15-19	3	1
20-24	0	1
25-29	1	0
30-34	4	1
35-39	1	3
40-44	0	5
45-49	2	3
50-54	1	7
55-59	2	4
60-64	4	4
65-69	1	2
70-74	2	0
75-79	0	2
80+	0	0
	21	33

Educational Level Attained by Respondents

Educational level of attainment of the interviewees ranged from infant to tertiary. The levels of attainment of the interviews conducted represented the following.

The level of attainment of the candidates interviewed also represented their social and occupational competence, and at the levels they were involved in plant material use. The interviewees who had an educational attainment at the tertiary level were involved in legal medical fields and the importation of craft material. This document will make a clearer discourse on the occupational and educational

activities of the interviewees, and to show how this affects the involvement of people in the use of plant material of high economic value.

INFANT	PRIMARY	SECONDARY	TERTIARY
13 Persons	35 Persons	3 Persons	3 Persons

*EDUCATIONAL LEVEL ATTAINED	SUMMARY OF MAIN OCCUPATIONAL ACTIVITIES	INCOME %
Infant	Market/Trays Street Vendor, Bush Doctor	50-75% 100
Primary	Market Vendor, Sales Clerk, Farmer, Labourer, Bush Doctor, Housewife	75% 50%
Secondary	Supervisor, Self Employed Retail Shop	25%
Tertiary	Medical Doctor, Teaching, Medical Assistant	25% 50%

*Occupational activity shows a direct relationship to level of education attained.

Relationship Between Occupational and Educational Backgrounds of Respondents

Persons interviewed were at various levels. Those who had tertiary level education were involved in the industry as a part-time entrepreneur and at the sophisticated level. For example they were involved in the importation of herbal extracts and craft material, processing of herbs for 'on Shelf' consumption and exportation. Some were also medical practitioners prescribing herbal medicines. On the other hand the lower level educational achiever was the market or tray vendor who was in some cases one hundred percent dependent on the sale of plant extracts.

There was a question of legitimacy and the conformation to medical standards. Local and cottage type processors of herbs especially for medicines felt threatened by state laws since they are not legally registered medical practitioners they may be prevented from producing such medical remedies.

The survey revealed that only one locally produced herbal medicine was sold ‘on shelf’ – produced by a medical practitioner.

Availability of Plant Materials

In the analysis of the questionnaire there is evidence that the local plant materials which were valuable were difficult to obtain. This may be signs of plants being threatened and over-harvested. One such example is the “Latanye” (*Coccothrinax babadensis*) In other instances the plant material had to be imported from Barbados as in the case of Linseed (*Linum usitatissimum*) and Martinique for Camomile (*Anthemis nobilis*). There was much difficulty especially at the Castries Market to get a consistent price for the same product and of almost the same quantity. In some cases the difference was as much as EC\$3.00. This inconsistency may be a case where the vendors are trying to get optimal value for the product, considering that they cater for visitors to St. Lucia. The weight and amounts of material were also inconsistent making the valuation of the products difficult. In some cases the value of the plant material was not known as it was used in combination with other herbs. Most processed medicinal herbs sold in a range between EC\$10 to \$40. dependent on the size of container and the malady it was for.

Exportation of valuable Plant Derivatives

The exportation of plant material from St. Lucia is not a large scale affair. Of the persons interviewed only one individual exported processed herbal medicines to the United Kingdom,

Canada, Barbados, St. Vincent, Grenada and Antigua. This is done on a moderate scale, contributing 5% to this individual's income. The actual exportation quota was not obtained.

In previous years local Latanyé brooms were exported to neighbouring St. Vincent and Barbados. People involved in the industry at that time realized significant income from the business. Due to the decline in the availability of the raw material these export markets are almost non-existent. Over the past years the quality of the brooms produced has declined and the leaves collected have not reached maturity. Producers interviewed think that there is ease in obtaining the raw material needed for production. This view may be questionable, and should require some investigation.

Roles of Male Versus Female in the Sector

From the interviews conducted it was clearly obvious that the sector was female dominated. The production of craft, herbal medicines and the vending of herbs were dominated by females.

It was also noticeable that vendors purchased from other vendors raw and finished materials. The Purchase of materials was also an activity undertaken by females. Males involved in the sector collected their raw materials from the wild.

Level of Difficulty in Obtaining Plant material and Current Locations for Obtaining them

Most of the valuable plant materials with extreme difficulty to obtain locally were imported. The most used countries by the local vendors were Martinique and Barbados. In some cases valuable plant material is difficult to get but still present on the island in limited quantities. An example of this is cloves. Obtaining valuable plant derivatives varied with the location where the interview was conducted. The interviews however did not attempt to capture the distance and exact location where the plant materials were obtained.

Family involvement in the sector

There was not a high level of family involvement in any of the sectors. Participation by members of the family was limited and almost insignificant.

Views on endangered species

The interviewees expressed support for the protection and conservation of endangered species. They understood the importance of plant species and that their protection will contribute to their daily income. Some interviewees also noted the difficulty in obtaining certain plant material, and that this was mainly due to the poor understanding of the importance of plants. For example some persons have to travel from Monchy to Vieux Fort to get certain plant materials which are not available in their neighbourhood. Others have developed herbal gardens which make it easy to get the necessary plant materials when they are needed.

INTERVIEWEE DISTRIBUTION AND GEOGRAPHY

INTERVIEW #	LOCATION/ MARKET	RESIDENCE OF INTERVIEWEE	WHERE MATERIALS OBTAINED	PLACE MATERIALS SOLD
1	Castries	Castries	Market vendors	Castries
2	Castries	Monchy	Monchy and Dauphin	Monchy
3	Castries	Monchy	Monchy and Dauphin	Monchy
4	Castries	Babonneau	Overseas, Market vendors, Babonneau	Castries
5	Castries	Babonneau	Market vendors, Castries	Castries
6	Castries	Ti Rocher, Castries	Cas en Bas Beach	Castries
7	Castries	CDC, Castries	Vendors, Castries	Castries
8	Castries	Waterworks, Castries	Market vendors, Castries and Barbados	Castries
9	Castries	Monchy	Market vendors, Martinique, In the wild	Castries, Vieux Fort
10	Castries	Castries	Market vendors, Barbados	Castries
11	Castries	Babonneau	Market vendors	Castries
12	Choiseul	Reunion, Choiseul	Vendors in Choiseul	

13	Choiseul	La Fargue, Choiseul	Rain Forest, Choiseul and Micoud	Castries, Choiseul, Soufriere and Craft Centre
14	Micoud	Micoud	Moule a Chique and Micoud	Vieux Fort
15	Vieux Fort	Mon Repos	Market vendors and Micoud	Mon Repos
16	Vieux Fort	Desruisseaux	Market vendors, Desruisseaux and Martinique	Vieux Fort
17	Vieux Fort	Choiseul, Caffierre	Choiseul	Vieux Fort and Choiseul
18	Vieux Fort	Vieux Fort	Vieux Fort	Vieux Fort
19	Vieux Fort	Vieux Fort	Vieux Fort	Vieux Fort
20	Vieux Fort	Vieux Fort	Vieux Fort	Vieux Fort
21	Vieux Fort	Grace, Vieux Fort	Vieux Fort, Grace	Vieux Fort
22	Vieux Fort	Vieux Fort	Vieux Fort	Vieux Fort
23	Vieux Fort	Laborie	Laborie	Anybody
24	Vieux Fort	Vieux Fort	Vieux Fort	Vieux Fort
25	Vieux Fort	Vieux Fort	Balembouche	Any body, Herbal Medicine Practitioners
26	Vieux Fort	Laborie	Other vendors, Saltibus	Vieux Fort
27	Vieux Fort	Vieux Fort	Sandy Beach, Vieux Fort	Vieux Fort
28	Vieux Fort	Laborie	No Comment	No Comment
29	Vieux Fort	Vieux Fort	Vieux Fort	Vieux Fort
30	Vieux Fort	Ti Rocher, Micoud	Neighbours, Ti Rocher, Micoud	Vieux Fort, Ti Rocher
31	Vieux Fort	Laborie	Laborie, Martinique	Vieux Fort
32	Vieux Fort	Vieux Fort,	Vieux Fort, Surrounding areas	Vieux Fort
33	Vieux Fort	Vieux Fort	Supermarkets, Surrounding areas	Vieux Fort
34	Vieux Fort	Vieux Fort	Vieux Fort	Vieux Fort
35	Vieux Fort	Vieux Fort	Vieux Fort	Vieux Fort
36	Vieux Fort	Vieux Fort	Vieux Fort	Vieux Fort
37	Vieux Fort	Piaye	Other vendors, Piaye, Martinique, Barbados	Vieux Fort
38	Vieux Fort	Choiseul	Choiseul	Vieux Fort, Choiseul
39	Vieux Fort	Choiseul	Banse La Grace	Vieux Fort, Choiseul
40	Vieux Fort	Anse Ger, Desruisseaux	St. Lucia, United Kingdom	St. Lucia, Canada, Barbados, St. Vincent, Grenada, and Antigua
41	Vieux Fort	Vieux Fort	Vieux Fort, Laborie Grace	Vieux Fort
42	Vieux Fort	La Retraite, Vieux Fort	Martinique, vendors, Vieux Fort, Grace	Vieux Fort
43	Vieux Fort	Vieux Fort	Vieux Fort	Vieux Fort
44	Vieux Fort	Vieux Fort	Vieux Fort	Vieux Fort

45	Vieux Fort	Vieux Fort	St. Lucia (in the wild) Barbados, Martinique	Vieux Fort
46	Vieux Fort	Augier, Vieux Fort	Neighbours and In the wild	Vieux Fort
47	Vieux Fort	Vieux Fort	Vieux Fort	Vieux Fort
48	Vieux Fort	La Ressource	Near rivers around the island	La Ressource
49	Laborie	Banse	Banse	Laborie
50	Vieux Fort	Laborie	Barbados, In the forest, St. Lucia	Laborie and special events on the island
51	Vieux Fort	Saltibus	Saltibus, Choiseul	Vieux Fort, Saltibus
52	Vieux Fort	Laborie	Laborie	-
53	Vieux Fort	Vieux Fort	Vieux Fort	Vieux Fort
54	Vieux Fort	Vieux Fort	Vieux Fort	Vieux Fort

Plant Material used in St Lucia and their Status

Plant Material Name	Part Used					Other	In Danger/ Very Valuable	Imported
	Leaves	Bark	Root	Fruit	Flower			
Chapantye <i>Justicia pectoralis</i>	v		v					
Japana <i>Eupatorium triplinerve</i>	v		v					
Garlic <i>Allium sativum</i>						Bulb		v
Sour sop <i>Annona muricata</i>	v							
Clery <i>Apium graveolens</i>						Seed		
Ditay payee <i>Capraria biflora</i>	v							
Kas <i>Cassia fistula</i>				v				
Paw paw <i>Carica papaya</i>				v				
Tumeric <i>Curcuma longa</i>			v					
St John's Bush	v					Stem		
Cinammon <i>Cinnamomun verum</i>	v		v					
Lemon <i>Citrus medica</i>	v	v	v					
Aloes <i>Aloe vera</i>	v							

Shame bush/Sensitive plant <i>Mimosa pudica</i>	v					Stem		
Rachette <i>Napolea cochenillifera</i>	v							
Fonbwazen <i>Ocimum gratissimum</i>	v					Stem		
Basil (mint) <i>Ocimum basilicum</i>	v					Stem		
Shining bush <i>Peperomia pellucida</i>	v					Stem		
Gwen anba fey <i>Phyllanthus amarus</i>	v					Stem		
Planten <i>Plantago major</i>	v		v					
Thyme (large leaf) <i>Plectranthes amboinicus</i>	v							
Tabac jab <i>Pluchea symphytifolia</i>	v							
Guava <i>Psidium guajava</i>	v							
Gooseberry <i>Phyllanthus acidus</i>	v							
Patchuli <i>Pogostemon patchouli</i>	v					Stem		
Rosemary <i>Rosmarinus officinalis</i>	v							
Veven <i>Stachytarpheta cayennensis</i>	v					Stem		
Tamarind <i>Tamarindus indica</i>	v							

Veven kawayib <i>Wedelia trilobata</i>	v					Stem		
Cassia Alata <i>Senna alata</i>	v	v					v	
Goditen <i>Plectranthus amboinicus</i>	v							
Shadon Benni <i>Eryngium foetidum</i>	v					Stem	v	
Semen Kontwa <i>Chenopodium ambrosioides</i>	v					Stem	v	
Dite Payi <i>Capraria biflora</i>	v						v	
Rattan Reeds <i>Calamus ratang</i>						Stem		Barbados
Ginger <i>Zingiber officinalis</i>			v					
Nutmeg <i>Myristica fragrans</i>				v			v	
Latanye <i>Cocothrinrax barbadensis</i>	v							
Bwa Kabwit <i>Aegiphila martinicensis</i>	v	v						
Pye Poul Fleusine indica								
Matnichen <i>Parihenium hysterophorus</i>								
Camomile <i>Anthemis nobilis and other species</i>	v				v			Martinique

Abes Gum <i>Abies sp.</i>								Barbados
Nuni <i>Morinda citrifolia</i>				v			v	
Bwa Cayenne <i>Quassia amara</i>		v				Stem		
Sarsparilla <i>Smilax guianensis</i>			v					
Man Better Man <i>Achyranthes aspera var aspera</i>	v		v					
Anis <i>Pimpinella anisum</i>						Seed		Barbados & Martinique
Mauby		v						
Vitivera Root <i>Vetiveria zizynoides</i>			v					
Pyepoul <i>Eleusine indica</i>								
Zeb Goudon <i>Bidens pilosa</i>							v	
Citonnell							v	
Liyen Kann							v	
Linseed <i>Linium usitatissimum</i>						Seed	v	Barbados
Saigo <i>Cycas sp.</i>				v				
Cocoa <i>Theobroma cocoa</i>							v	
Fiz-O-New	v							

Cloves <i>Syzygium aromaticum</i>							v	
Lanni-A-Twel <i>Anethum graveolens</i>							v	
Shepherd's Purse <i>Capsella bursa pastoris</i>	v							United Kingdom
Blue Cohosh <i>Caulophyllum thalictroides</i>	v				v			United Kingdom
Caraway <i>Carum carui</i>						Seed		United Kingdom
Black Cohosh <i>Cimicifuga racemosa</i>	v							United Kingdom
Hawthorn <i>Crataegus oxyacanthoides</i>						Berries		United Kingdom
Ephedra <i>Ephedra sinica</i>	v				v			United Kingdom
Fennel <i>Foeniculum vulgare</i>	v				v			United Kingdom
Bladder Wack <i>Fucus vesiculosus</i>	v					Stem		United Kingdom
Cleaves <i>Galium aparine</i>	v							United Kingdom
Liquorice <i>Glycyrrhiza glabra</i>			v					United Kingdom
Ginkgo <i>Ginkgo biloba</i>	v							United Kingdom
St. John's Wort <i>Hypericum perforatum</i>	v				v			United Kingdom
Raspberry <i>Rubus idaeus</i>	v							United Kingdom

Wood Betony <i>Stachys betonica</i>		v						United Kingdom
Sage <i>Salvia officinalis</i>	v							United Kingdom
Saw Palmetto <i>Serenoa serulata</i>						Berries		United Kingdom
Damiana <i>Turnera diffusa</i>	v							United Kingdom
Tansey <i>Tanacetum vulgare</i>	v							United Kingdom
Valerian <i>Valeriana officinalis</i>	v							United Kingdom
Agnus Castus <i>Vitex agnus castus</i>	v							United Kingdom

Strategy

1. More elaborate and detailed study on the economic, social and environmental importance of plant derivatives on the island. This can be in collaboration with the Department of Statistics (Trade and Survey Department).
2. Development of a policy on legitimacy of herbal practitioners - should include controlled and uncontrolled herbs, licensing of herbalists and dispensing of herbal medicines. This should involve the Bureau of Standards and Medical Associations.
3. Determine by geography, extent of use of plant derivatives so as to develop planting schemes in order to sustain the utilization of such plants.
4. Consider value added factors and quality standards especially for spices and craft so as to compete with imported herbs and craft and to gain prominence in the market place.

Appendix

ST. LUCIA FORESTRY DEPARTMENT MINISTRY OF AGRICULTURE, FORESTRY AND FISHERIES

SURVEY QUESTIONNAIRE

This survey is being conducted by the Forestry Department as part of the management of biological resources project. The Department intends to develop a strategy for prioritizing research through the identification of plants of high economic and ecological value. This process will also provide for the expansion of their knowledge base on indigenous floral biodiversity. The Department is soliciting the assistance of users and vendors in the conduct of this interview. We would be thankful for your assistance.

All information provided will be kept in strict confidence.

1. Location of the interview _____
2. What is your name? (optional)_____
3. Where do you live? _____
4. What is your occupation?_____
5. What level of education did you attain?

Infant	()
Primary	()
Secondary	()
Tertiary	()
6. Sex: Male () Female () Tick the appropriate box

7. Age: Between

0-4 years () 45-49 years ()

5-9 years () 50-54 years ()

10-14 years () 55-59 years ()

15-19 years () 60-64 years ()

20-24 years () 65-69 years ()

25-29 years () 70-74 years ()

30-34 years () 75-79 years ()

35-39 years () 80+ ()

40-44 years ()

8. Are you involved in any of the following?

8a. Collection of valuable plant material such as herbs, spices, resins, latanye, sisal etc.

YES () NO () If the response is YES, What is the name of the plant _____

8a-i. Which part of the plant is collected?

Leaves () Bark () Root () fruit () Flower ()

Other () please specify _____

8b. Production or cultivation of valuable plant material such as herbs, spices, resins, latanye, sisal etc.

YES () NO () If the response is YES, What is the name of the plant?_____

8b-i. Which part of the plant is produced or cultivated?

Leaves () Bark () Root () fruit () Flower ()

Other () please specify _____

8c. Processing of valuable plant material such as herbs, spices resins, latanye, sisal etc.

YES () NO () If the response is YES, What is the name of the plant?

8c-i. Which part of the plant is processed?

Leaves () Bark () Root () fruit () Flower ()

Other () please specify _____

8d. Sale of valuable plant material such as herbs, spices, etc.

YES () NO () If the response is YES, What is the name of the plant?_____

8d-i. Which part of the plant is sold?

Leaves () Bark () Root () fruit () Flower ()

Other () please specify _____

Other (such as purchase, please specify)_____

Name of plant material _____ Part of plant used _____

9. How difficult is it to obtain plant material?

DEGREE OF DIFFICULTY

PLANT MATERIAL	VERY DIFFICULT	NOT TOO DIFFICULT	EASY	WHY

10. Do you resell plant material from other vendors?

11. Where in St. Lucia do you collect / buy your plant material (*please state exact geographical location*)

12. Where do you sell your products/ produce?

In St. Lucia

Outside of St. Lucia

(Please specify the exact location/ country)

13. Please give the approximate amount sold. (*Use an appropriate unit of measure e.g. kg, lb,)*

NAME OF PLANT MATERIAL/PRODUCT SOLD	WEEKLY	FORTNIGHTLY	MONTHLY	QUANTITY (State unit of measure)	RETAIL PRICE PER/

14. Do you import any plant material? If the response is YES, complete the table below.

NAME OF PLANT MATERIAL	COUNTRY

15. Is this activity your only source of income?

YES () NO ()

16. How much does this activity contribute to your overall income?

Less than 25% () 75% ()

50% () 100% ()

17. How long have you been involved in this activity?

_____Years

18. Are there other members of your family involved in this activity?

YES () NO ()

If the response is NO, go to question 20

19. How many members of your family are involved?

Full time _____ Part time _____

20. Do you think that there are valuable plants that are in danger?

If the response is YES, please ask to list the critical ones.

21. Is there anything else you would like to let me know on valuable plants and plant material in St. Lucia?

I wish to extend my gratitude to you for your assistance with this survey.

Date: _____

Time: _____