**ASSESSMENT OF THE LATANYE BROOM INDUSTRY IN SAINT LUCIA**

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**SECTION I**

**1.0 BACKGROUND**

The Latanye palm (*Coccothrinax barbadensis*) is a Non-Timber Forest Product (NTFP) that has been extracted mainly from the coastal tropical dry forests for the production of crafts and brooms. There is a long history in the use of Latanye brooms in St. Lucia. The broom’s economic and cultural importance is widely recognized in the country, as well by St. Lucians who have migrated abroad and continue to use the broom as a traditional sweeper or as souvenir. The brooms are produced from the leaves of the palm and are used primarily to sweep the floor and clean other parts of houses and buildings.

Over the years, production of Latanye brooms has either stagnated or declined over time, particularly because of changes in the preferences of consumers, competition by other cheaper types of broom, as well as the rising costs to access the leaves and other materials for broom production. Despite these challenges to broom producers, there is some recognition by both producers and consumers of the broom that production could be expanded to meet existing and new demands, if the markets for the broom can be expanded and there is sufficient governmental support to production and marketing aspects. Expanded production can contribute to production diversification and the cultivation of an alternative crop, in addition to income generation in St. Lucia’s rural economy, particularly women who are a large component of the rural society. The Forestry Department of the Ministry of Agriculture did a survey in 2000 that assessed the extent to which the Latanye plant was utilized. A total of 69 individuals participated in the survey. That study highlighted the participation of rural people, especially women, in broom making with the Latanye Plant. (L. John 2000). John's study also showed the threat to the existence of Latanye in the wild caused by over harvesting of leaves.

The Latanye plant has been grown as a wild plant in St. Lucia and has so far been a defacto free resource to be harvested from private and public forest areas. Although the Forest Reserves and Crown Lands are protected by the Forest, Soil and Water Conservation Ordinance of 1946, amended in 1957 and 1983, there has been no control of activities occurring on private lands and in the harvesting of the Latanye plant mainly because some land owners were expatriates and not living in St. Lucia, some land owners did not object to harvesting of the plant, there is the absence of legislation to protect the plant and praedial larceny.

Through the Ministry of Agriculture, there are efforts to cultivate it as a crop in the farming system. For the last 4 years the Forestry Department has supplied Latanye plants to approximately 35 farmers across the Island. The basic idea was to propagate Latanye in the nursery and to establish it as a crop for the harvesting of its leaves. As an economic resource, the plant has many advantages that make it an interesting alternative crop to a farmer. It has low ecological requirements and it can grow on marginal lands. This plant is also native to the land with low incidence of pests and diseases and by the morphology of its leaves, is resistant to strong wind currents. Maintenance costs therefore are low to farmers. Mature plants have been obtained on the more fertile soils that yield harvestable leaves within two years of planting.

Given that scenario of over-harvesting of Latanye to meet the demand for brooms- locally and regionally, the variability in the quality of brooms produced, the absence of legislation for the harvest/use of Latanye, the threat of bush fires and more importantly, the potential loss of livelihoods and extinction of Latanye in Saint Lucia, the Forestry Department intervened and developed a species recovery strategy for the conservation and the sustainable use of Latanye. In 2001, a Task Force was formed with the mandate to improve the conservation status and preserve the livelihoods associated with sustainable use of Latanye. The Latanye Task Force formulated a conservation strategy for the cultivation of Latanye to: (a) cease harvesting of wild stocks of Latanye; (b) allow the wild stocks of Latanye to recuperate; and (c) sustain the supply of high quality brooms to the market.

This report provides an in-depth profile of the Latanye broom industry in St. Lucia. The report covers a range of issues from pre-production of seeds and seedlings to harvesting of leaves, broom production and marketing. It also covers the aspects of training at each stage of the process. The remainder of the report comprises three sections and Annexes. Section II discusses the production system for Latanye plants that includes pre-production aspects, cultivations of plants, harvesting of leaves and broom production. Section III discusses the economic and marketing aspects of brooms and identifies several issues to be addresses to expand market opportunities both locally and for exports. The final Section provides a summary of the main conclusions and recommendations.

**SECTION II**

**2.0 THE LATANYE PRODUCTION SYSTEM**

* 1. **Overview of the Farming System**

Latanye is distributed in the Windward and Leeward Islands, Barbados Trinidad and Tobago the Lesser Antilles including: Saba, Barbuda, Antigua, Guadeloupe, Marie Galante, Dominica, Martinique and according to John (2000) probably also the same taxon is found in the Virgin Islands and Puerto Rico.

In St. Lucia however there has been a demand for the leaves of this plant to produce brooms. John (2000) documented the demand, livelihoods and the resulting overharvesting of leaves in the wild. This intensity of harvesting of Latanye leaves resulted in the evaluation of Latanye as ecologically vulnerable. A survey was conducted island-wide by the Forestry Department to assess the extent to which the Latanyé plant was being utilized. A total of 69 individuals participated in the survey. Generally, most of them manufactured their brooms for sale (83%). Most of those involved in this industry came from the ranges of Quillese, Dennery and Northern. The greatest percentage came from Quillese. One respondent came from Millet. This range has seen the industry completely disappear due to problems in acquiring leaves for manufacture. The Soufriere range also reported no manufacturing activity from the Choiseul area where respondents explained that they had too far to travel to harvest leaves. The majority of those involved in the industry manufactured brooms for sale, only 14 % said that they did not. Those that did not manufacture brooms but sold them obtained brooms from wholesalers or from an estate. Most participants were involved in the Latanyé industry for over 15 years. Those that have been involved in the industry typically have many years experience. Seventeen percent (17 %) had been involved for less than 5 years, 22% were between 5-10 years and at least 39% acknowledged over 15 years involvement.

The Forestry Department then embarked on trials to improve increase the quality of seedlings and decrease the duration of time to produce Latanye plants in the nursery. These efforts resulted in the production, distribution establishment on private property of approximately 30000 potted Latanye plants between 2002 and 2008. The main group targeted and demand for these plants was the broom producer. By 2006 there were 35 plantations island-wide with an average size of one acre. Currently there are 45 plantations island-wide with the average size of the plantation varying from half an acre to an acre.

Latanye as a crop has many advantages that make it an interesting alternative as a crop to a farmer. Firstly it has low ecological requirements. It can grow on marginal lands. But mature plants have been obtained on the more fertile soils, even yielding harvestable leaves within two years of planting. This plant is also native, with low incidence of pests and diseases, and by the morphology of its leaves is resistant to strong wind currents. This means a low cost of maintenance for a farmer.

Most of the harvesting occurs on private lands located on the north east-east coast in the areas of Grand Anse, Louvet, Dauphin, Praslin. The La Pointe/ Patience area in Mon Repos was also a heavily utilized area. Areas along the west coast that were targeted included Canaries and Choiseul.

In a case study of the Latanye Industry in 2006, Gustave D., stated that the total cost to produce 10000 Latanye seedlings was EC $8195 (US $3035). Hence the cost to produce one plant is approximately one XCD dollar ($1). That study also details the materials necessary to establish this nursery (Table 1).

**Table 1: *Cost of Production in Nursery of 10000 Plants of Latanyé***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ITEM/OPERATION** | **Unit** | **Unit Price** | **Quantity** | **Total Cost Yr.1** |
| **CAPITAL COST** |  |  |  | **(XCD)** |
| Seeds | g | 0.08 | 5500 | 440.00 |
| **Soil Preparation:** |  |  |  |  |
| Mixing soil | Cubic yards | 60 | 25 | 1500.00 |
| Top Soil | Cubic yards | 65 | 5 | 325.00 |
| **Materials & Chemicals** |  |  |  |  |
| Plant bags | bags | 0.111 | 10000 | 111.10 |
| c) Fertilizer: Nutru Leaf | Packet | 18 | 1 packet | 18.00 |
| **Labour:**  Filling bags | 300 plants/man day | 50 | 34 | 1700.00 |
| e) Moving pots | 1000 pots/ man day | 50 | 10 | 500.00 |
| f)Transplanting | 2000 plants per man day | 50 | 5 | 250.00 |
| g) Fertilizing | 10000 plants/ 2 hrs | 50 | 1 | 50.00 |
| h) Weed Control | 36 man days | 50 | 10000 | 1800.00 |
| Watering | 2 hrs/day | 50 | 1 month | 1500.00 |
| **GRAND TOTAL** |  |  |  | **8194.10** |

**2.2 Organization of the Production System**

Latanyé occurs naturally in the Tropical very Dry forest (T-vdf)- Subtropical Moist forest (S- mf) vegetative lifezones (Holdridge, 1967). The temperature ranges from 26°C for the Tropical Dry Forest to a variation of 18-24°C in the Subtropical Moist Forest. Precipitation is a particularly limiting factor for these vegetative zones. Mean annual rainfall ranges from 1270 mm for T-vdf and 2000-2490mm for S- mf. Tropical soils tend to be acidic in nature which poses a problem for the agriculture industry. Soil nutrients tend to be tightly bound in the soil and are unavailable for plant uptake. Edaphic conditions have been described for some of the Latanyé’s natural range. The description for the soils range Dennery Knob – Grand Anse reveals soil types ranging from highly acidic to moderately so (Stark *et al* 1966). Traditionally cultivated tree crops for this area include Mangoes (*Mangifera indica*), Cocoa (*Theobroma cacao*), Coconuts (*Cocos nucifera*), SourSop (*Annona mericata*), Cashew (*Anacardium occidentale*) and Guava (*Psidium guajava*) (James, 1989) (cited by John, 2002)

**2.2.1- Production condition and suitability of the Latanye plant from nursery:**

The duration of the processes from germination to field establishment are detailed in the pictures in Figure 1



Figure 1 - Photos

a) Latanye Seeds b) 3– 4months c) 6 months d) 2 years e) 5 years old

**2.2.2 - Plantation Establishment**

Two types of plantations were established pure and mixed stands. The spacing of plants depends on whether the plantation was a mixed or a pure stand. Intercropping of Latanyé was done with Mauby (*Colubrina elliptica*). Table 2 and 3 detailed the various plant densities used in plantation and the other agronomic practices for production in pure and mixed stands with Mauby. 90 to 100% plant survival rates were achieved on farmers’ holdings.

***Table 2* *Cost of Production for the establishment of 1 acre of Latanyé***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Activity** | **Unit** | **Unit Cost (XCD)** | **Description** | **Quantity** | **Percentage of Total Cost**  **(%)** | **Total Cost**  **(XCD)** |
| **Land Preparation** | *Acres* | 184.50 | 1 Fortnight | 1 | 13 | 184.50 |
| **Digging Holes** | *Holes* | 0.20 | 15 days | 1,210 | 20 | 276.75 |
| **Planting** | *Plants* | 0.20 | 15days | 1,210 | 20 | 276.75 |
| **Fertilizer** | *bags* | 20.30 |  | 3 bags | 5 | 60.90 |
| **Fertilizing** | *Acres* | 18.45/day | 4 oz |  | 1 | 18.45 |
| **Maintenance** | *Acres* | 553.51 | 276.75 | 2 | 40 | 553.51 |
| **TOTAL** |  |  |  |  |  | **1370.85** |

**Table 3 *Spacing used in the establishment of Plantations*.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Spacing**  **(ft x ft)** | **Spacing**  **(m x m)** | **No of Trees/ha** | **No of Trees/acre** |
| **Pure stand** | 6 x 6 | 1.8 x 1.8 | 3086 | 1249 |
| **Mixed stand a**):  Mauby to Mauby | 12 x 12 | 3.7 x 3.7 | 1543 | 624 |
| **Mixed stand b):**  Latanyé to Latanyé | 12 x 12 | 3.7 x 3.7 | 1543 | 624 |

Production research by the Forestry Department included the establishment of two types of plantations of pure and mixed stands. The spacing of plants depends on whether the plantation is a mixed or a pure stand. Intercropping of Latanye was done with Mauby (*Colubrina elliptica*). The results showed that 90% to 100% plant survival rates were achieved on farmers' holdings (D. Gustave *et al* 2004).

The Forestry Department with support from the Extension Services of the Ministry has been successful in the establishment of 35 plantations of pure and mixed plots of Latanye on farmers' holdings. The average size of a plantation is 1 acre. (

**2.3 Harvesting of Leaves**

Based on a set of draft standards developed by the Bureau of Standards (Julius James 2004), proposed were the following attributes for leaves harvested.

**Latanyé leaves** – The broom shall be made from 100% Latanyé leaves that are sound, well cleaned, and free from mold and weather or mechanical damage. When the leaves in the broom are subjected to the flexibility test (Clause 8.1.4) they shall not suffer more that slight deformation. The leaves shall also conform to the following minimum requirements:

1. ***Overall length of leaflet 46 cm (18.1 in)***
2. ***Width of leaflet 99 cm (39 in)***
3. ***Length of petiole 18.5 cm (7.3 in)***
4. ***Width of petiole 1 – 1.5 cm (0.4 – 0.6 in)***
5. ***Number of leaflets per broom 22***
6. ***Minimum age of leaf 5 years***

***(g) Colour of leaf beige/tinge of green***

The standards also include the headings:

## General Requirements for Broom Components,

## General Requirements for Broom Construction,

## Labelling Requirements,

## Bundling and Packaging Requirements,

## Inspection Requirements and

* Testing Requirements

These standards have to be reviewed and accepted by the Forestry Department and later accepted Latanye broom producers. Currently as a result of broom demand and little or no replanting of Latanye trees, there is a significant variation in the dimensions of leaves harvested from the wild and consequently, in the quality of broom produced. With proper agronomic practices, it is possible to obtain leaves that would produce a good quality broom. The results from studies of the Department of Forestry show that the mean length harvested is approximately fifty point six centimeters (50.6 cm), with a median and mode of fifty centimeters (50 cm) (D. Gustave *et al* 2004).

The Research Unit is presently embarking to verify these observations of harvesting in the experiments. In 2004 personnel of the Research Unit of the Forestry Department, together with other Forest Range Officers and the Information Unit of the Ministry implemented an experiment at Glavier, Dennery to determine which treatment is the optimum regime to sustainably harvest Latanye leaves. The four treatments comprised the removal of 30%, 40%, 50% and 60% of the initial leaves. Each treatment was done in three blocks with each block having the dimensions of 38 ft. x 38 ft.

1. ***Harvesting Wild Stocks***

Research by the Forestry Department indicates that the demand for brooms and the absence of a sustainable production system has resulted in continuous over-harvesting of immature leaves, particularly from plants in the wild to produce brooms. This has resulted in a lower quality broom being produced for the market. The lack of data on trees in the wild and harvesting of leaves from these trees limit the analysis on the effect of current harvesting practices on present and future supply of leaves. However, interviews with leaf harvesters and broom producers indicate that leaf availability from plants in the wild as well as the sticks (also a free resource) for the brooms are becoming scarcer and more costly to procure.

Lyndon John’s study (2001) looked at the broom industry in a socio economic context. The study revealed that leaves from trees grown in the wild were harvested "year round" to maintain the livelihoods of rural people because of the available market and high demand for leaves for making brooms. There was "no active cultivation of the plant" and harvesters used the younger leaves of the plant as materials to tie parts of the broom. These activities resulted in a decrease in the availability of Latanye leaves. This contributed to a decline in the production and sale of brooms. There was a decrease in the availability of brooms sold from 1993 to 2003, from 11,000 in 1993 to less than 2,000 brooms in 2003. It is important to note also that the number of brooms exported decreased to 181 in 2001. A local exporter of brooms to Barbados explained that wildfires and the unavailability of shipping resulted in the production and sale of fewer brooms for that period. (Personal communication: S. Bailey 2004).

Once harvested, leaves are left to be dried by those producing the brooms. Leaves can also be purchased from harvesters of wild stocks and from farmers that cultivate plants on their holdings. They are sold by the bundle which contains between 25 and 30 leaves and the cost ranges from EC$25 to $30 per bundle.

1. ***Harvesting Cultivated Plants***

The long term survival of Latanye broom production requires a more sustainable production system of plants that includes adequate management and service support from seed production to harvesting of leaves, broom production and marketing. In an ideal sustainable production system, the older or mature Latanye leaves are harvested and the plant is left to regenerate and produce new leaves. About 5 to 7 Latanye leaves together with a sturdy broom handle are used to make a large broom of reasonable quality.

Based on observations using a sample of 28 plants on one farmer’s holding (Paulina Ferdinand), the results showed that there is a lot of potential and possibility to produce and harvest leaves in a sustainable production system. That plot was established in 2001 and no fertilizer was used to support plant growth. The first harvest was done in 2004 and the second was done in June, three months later. The total number of leaves harvested in the first period was 121, and 142 were collected during the second harvest. The average number of leaves in first harvest was 4 per plant while 5 were harvested in the second. The number of leaves on the Latanye plant before the **second harvest** is on an average, the same as the number of leaves present initially before the **first harvest**. This indicates that the Latanye tree was able to reproduce its leaves within a short period which would imply a more sustainable system of leaf production, harvesting and consequently broom production.

1. ***Harvesting and Regeneration: Results from Experiments***

As indicated above, central to the sustainability of Latanye broom production is the need for a more efficient farming system for production of plants and harvesting of leaves. Preliminary observations using a sample of 28 plants on a farmer's holding at La Pointe Mon Repos indicate that leaves can be harvested on a sustainable basis from established plots without jeopardizing leaf supply over time. The production plot was established in 2001 and the first harvest was done in March 2004 and the second harvest in June 2004, three months later. The farmer harvested 40% of the leaves from the plants. Consequently an experiment was designed and implemented at another farmer's holding at Dennery to test the hypothesis that Latanye leaves can be sustainably harvested every three months (D. Gustave et. al 2004).

The experimental design-random complete block was used to capture the variability of the land in terms of aspect, slope and fertility based on the soil profile of the site. Four treatments were applied in each block:

* Removal of 30% of the initial number of leaves present - treatment number 1 (tl)
* Removal of 40% of the initial number of leaves present - treatment number 2 (t2)
* Removal of 50% of the initial number of leaves present - treatment number 3 (t3)
* Removal of 60% of the initial number of leaves present - treatment number 4 (t4)

In the analysis of the data, the treatments and blocks were used as independent variables; the dependent variables were the number of leaves present in September 2004 and the difference in the number of leaves present in January 2005 (i.e., number of leaves present in September 2004 less the number of leaves present in January 2005). (D. Gustave et. al 2005).

The analysis of variance (ANOVA) detected that there were significant differences in the number of leaves present from harvesting for the period (P= 0.04) and significant difference amongst the blocks (P=O.OO). There was a clear trend that showed that higher removal of leaves led to less leaves in 2005 and greater productivity in blocks where there was greater exposure to light. The trend of higher removal of leaves that leads to lower leaf availability. For the 30% treatment, there was on average one additional leaf present in January 2005. For the 40% and 50% treatments respectively, there were 2 more or less (+/-) leaves than the initial number of leaves in January 2005. In the case of the 60% treatment, there were on average 3 leaves less than the initial number of leaves present in 2004.

One notable aspect of this 2.5 acre Latanye plantation was a progressive decrease in exposure to light from Block 3 to Block 1 due to shading. The productivity of re- grown leaves decreased from Block 3 to 1. This was evidenced by the increase in the average number of leaves re-grown in January 2005: on average 3 leaves in Block3, 2 leaves in Block 2 and 1 leaf in block 1.

The data collected to date from the above experiments confirm the recommendation that "Latanye leaves can be sustainably harvested every three months" (Personal communication: P. Ferdinand.) Moreover, the findings from the research indicated that the cultivation of Latanye in a managed farming system require partial shading in the first year but needed more sunlight in the second and third year (D. Gustave et. a/ 2004).

**2.4 Broom Production**

This section should provide information on the process and the requirements for producing good quality standard broom as well as other types of brooms. The information should cover the following:

**2.4.1 Standards for Latanye Brooms**

Due to the demand for Latanye Brooms there was the over-harvesting of the leaves and the consequent use of smaller and immature leaves. Brooms built with im­mature leaves had varied standards of measurements and are not as durable as those made with more matured leaves (Personal communication: P. Ferdinand). The Forestry Department confirmed the disparity in dimensions of brooms produced in an island wide survey of 34 brooms in January 2004. The length and diameter of the brooms were measured using a tape and diameter tape respectively. Four parts of the broom were measured: the parts A, B, C, and D as indicated in Figure 4. That survey quantified that there was greater variability in the length of the parts A, Band D than the part C. (D. Gustave et. al 2004)

In general, there must be a steady supply of leaves to ensure a continuous supply of brooms. Other critical factors for the product in the market include quality standards, product price and competition of other brooms. It is for these reasons that the Forestry Department undertook studies of Latanye leaves and brooms produced in 2004. The Department liaised with the St. Lucia Bureau of Standards to determine the certain standards and requirements for the production of brooms. A total of 34 brooms were measured: the length and diameter of the broom were measured using a tape and diameter tape respectively. Five parts of the broom were measured: the parts A, B, C, and D and the measurements were found to have a normal distribution. There is great variability in the length of the parts and this is observed by the higher values obtained for standard deviation and variance giving values for ***A: 2.35 and 5.5,*** ***B: 2.18 and 4.5*** and ***D: 2.87 and 8.2 centimetres***. This information may be employed in finalizing standards of the dimensions of brooms to be sold on the local market.

**Longevity and Storage Experiments**

Information available from broom producers indicates the following:

1. Brooms can be stored for at least 6 months without treatment. Beyond 6 months, leaves should be treated with fungicide and insecticide. Neem (*Azadirachta indica*) leaves were used for the treatment. An experiment was done in which 1 lb. of fresh Latanye leaves were macerated and soaked in one gallon of water overnight. Fresh leaves were soaked in this solution the following day and the leaves were then air dried. (G.O.A. 1999). This experiment showed that brooms can have a longer shelf life with this type of treatment.
2. Brooms that are used on a smooth concrete surface can last for 6 months before they reach the condition.

**Role of the Forestry Department**

The production and marketing of brooms will require a variety of support services, from nursery production and plant cultivation, to harvesting and broom production. At the pre-production and production levels, the Forestry Department has played major role to develop a more sustainable Latanye tree production system to address the problem of depletion and sustainability of tree production and broom supply. The Department has identified the problem of the Latanye plant to be vulnerable plant species in St. Lucia with high possibility of extinction under the current farming system. As a result, it has initiated efforts to develop a sustainable farming system for plant cultivation and leaf production for supplying brooms. In this regard, the Department has supported nursery development and the propagation of plants on established plots. To date, there are 20 plots of Latanye trees that have been cultivated on farmers’ holdings. The survival rates of 90% to 100% have been achieved on the aforementioned holdings.

In addition to the above, the Department has initiated a program to produce Latanye leaves and assure the supply of brooms on a more assured basis. It has convened meetings of producers and suppliers, broom exporters, the Extension Services, Non-Governmental Organizations and the Bureau of Standards to identify and discuss the critical issues affecting broom production and marketing.

**SECTION III**

**ECONOMIC AND MARKETING ASPECTS**

***Distribution system***

* Characterize the transport and distribution system (off-farm activities from broom production to market delivery);
* Production costs related to transport and distribution;
* Identify constraints of the distribution system

***Markets***

* Characterize the “ideal” quality broom for consumers – what is a quality latanye broom;
* Characterize the internal markets for various types of brooms – supermarkets, vegetable markets, street marketing, etc.;
* Identify the local consumers for various types of brooms;
* Identify the marketing margin – price spread between vendor or seller and consumer’s price;
* Identify external markets for brooms and main marketing channels used;
* Who are the main actors in the marketing channels;
* Constraints of the marketing system

1. ***Transport and Distribution.*** The present transport and distribution costs, particularly for the finished product are high. Therefore, broom production costs will need to decline through productivity increases and better quality in leaf production, improved production techniques for brooms and development of a more efficient transport and distribution system.
2. ***Marketing system for final product(s).*** The demand for brooms is the major constraint on the production of brooms. Therefore, the production system must be market led, targeting the preferences of consumers both within St. Lucia and in export markets. Without an expanding market for brooms, investment at the pre- and production levels in broom production will not be a financially attractive option for farmers. In this regard, the following key aspects will need to be addressed:

**Economics of Production**

Although there was some success in the establishment of a one-acre plot of Latanye cultivation on farmers' lands including at La Pointe Micoud, a cost benefit analysis by Fevrier (2006) revealed the economic feasibility of growing Latanye as a crop (**this analysis needs to be presented here**) and the major factors affecting the economic feasibility of production and marketing. The study looked at the economic feasibility of the production of Latanye leaves and sale of Latanye brooms from one acre of land. It also assumed the following:

1. Latanye plants needed 3 years to mature until the first harvest.
2. The cost of establishing an acre of Latanye was capitalized and amortized for a 5-year harvesting period.
3. Costs per plant was US$0.35
4. The cost to establish 1 acre of Latanye in 2 years was US $1,370.85 and the annual net profit per acre was US $3,800.99. Another economic aspect in Latanye production investigated was nursery production.

From a production and income generating standpoint, a preliminary analysis of the economics of broom production and revenue obtained based on information available indicate that an acre of Latanye plants can generate gross revenue of between XCD$4,380 and XCD$6,132 based on the following data:

Leaves produced from 1 acre plot of Latanye plants = 6,136

(based on 28 plants that produced 142 leaves and an acre having 1,210 plants)

Number of bundles of leaves = 204

(based on each bundle containing 30 leaves)

Potential revenue from leaf sale @ $25/bundle = $5,100

Alternatively, number of brooms produced from 6,136 leaves = 876

(based on 7 leaves per broom)[[1]](#footnote-1)

Gross revenue from broom sale (price range XCD$5.00 - XCD$7.00/broom)[[2]](#footnote-2) = XCD$4,380 - XCD$6,132.

Two major limitations identified in the study were the limited number of plants available to Latanye farmers and the limited business acumen or entrepreneurial skills necessary for better management of broom production and marketing as a business activity. Although producers understand some of the constraints and issues that affect leaf availability as well as the market demand for their products, there exist several bottlenecks in the broom production process and they have limited information on market opportunities and marketing skills for a modern business activity.

**Marketing and Distribution**

Information on broom production and local sales are not easily available. Based on interviews of producers and few studies, most of the Latanye brooms are sold on the local market and some are exported on an irregular basis. The study of St. Lucia’s Latanye broom industry by Lyndon John (2001) is the only documented information available so far on the marketing and distribution of Latanye brooms in the local market. The study attempted to review broom production across the country and selected a sample size of 69 individuals for its review and analysis of the marketing and distribution aspects. It indicated that the main marketing centers of Latanye brooms are in the Castries and Vieux Fort areas. Furthermore, the study revealed that 25 persons (36% of the sample) sold an average of 70 brooms each and 11 producers (16% of the sample) sold between 30 and 50 each on a monthly basis. On the basis of this data, its was concluded that the average numbers of brooms produced locally on a monthly basis ranged between 2,080 and 2,300 for the local market. In addition, the study indicated that that broom sales generated a monthly income for the respondents of between XCD$1,000 to XCD$2,000.

Although brooms there has been a continuing increase in imported brooms over time from China, United Kingdom, Puerto Rico and the United States in 2003, there is still a local market for Latanye brooms which need to be further developed. Coinciding with the high demand for leaves is the decrease in the availability of leaves to make brooms, as indicated in personal interviews with broom producers.

With regards to the export market, the main importers of St. Lucia’s brooms have been Barbados and St. Vincent and the Grenadines. St. Lucians who have migrated to North America and other countries also purchase brooms, for household use and sometimes as a souvenir (D. Gustave *et al* 2004). Over a twelve-year period from 1992 to 2003, the number of brooms exported to all countries was 2,081 per year. In the same period, St. Vincent and the Grenadines imported 82.3% and Barbados accounted for 13.3% of St. Lucia’s total broom exports.

It is important to note that quantity of brooms exported decreased from 11,000 in 1993 to 181 in 2001. One possible explanation for this decline is related to the availability of leaves, a factor that was validated by John’s study in 2001. Moreover, a local exporter of brooms to Barbados (Personal communication: S. Bailey 2004) underscored that there was a high demand for St. Lucia’s brooms in Barbados and St. Vincent during the period but bush fires affected broom production. This situation was aggravated by the limited shipping services during the period.

**Project Development**

Until recently, most producers of Latanye broom operated individually and continue to do so with little effort at organizing their activities, either to manage production and/or to support their marketing efforts. An important need identified by broom producers was to produce better quality Latanye brooms through the formation of a registered broom association. From a public policy standpoint, organizing producers is critical not only to address common problems and issues affecting their activities, but also to chart a longer term vision and direction for the sustainable development of the sector.

A Task Force was formed in 2005 to address the issues in Latanye production. Its representatives included: the Forestry Department, Corporate Planning, and Extension Services from the Ministry of Agriculture, Ministry of Social Transformation, Ministry of Commerce, Saint Lucia Bureau of Standards, Broom Producers and Exporters, and Non Governmental Organizations and Latanye broom exporters, producers and planters. The need to organize the producers was identified as one of the major tasks of the Task Force. Consequently, a Latanye broom producers group, the "Superior Broom Producers" was officially formed in 2005. The group has a membership of 19 members with 13 of them registered. The group was formed as a result of the potential to further develop their activities through scale economies and better organization in Latanye leaf and broom production, as well as in more effective marketing of Latanye Brooms. With the guidance from the Task Force, the group formulated a conservation strategy and proposal to establish a Latanye nursery to produce 10,000 plants annually and cultivate 10 acres of Latanye in one of the "heavy utilized area" where harvesting of wild stocks is done - La Pointe Micoud. (L. John 2001). This group is currently seeking funding from a small grants project of UNDP GEF to execute a project.

A project proposal was developed to increase the production and revenue generating capacity of Latanye farmers by:

* Improve management of wild Latanye stocks by minimizing harvesting of such stocks to facilitate plant and leaf regrowth;
* Organize a production system through systematic supply of seedlings and plants and cultivation of Latanye plants on farmers’ holdings; and
* Improve the sustainability of production and the supply of quality brooms to the market.

So far, the efforts to improve Latanye production included the following:

* Collaboration with the Propagation Unit, Forestry Department and Latanye Farmers to establish a germplasm site for Latanye seeds from across the island.
* Develop a data base on Latanye farmers and broom producers and the marketing of brooms at local outlets.
* A draft guideline on the standards for broom production was prepared by the Bureau of Standards, but this has to be finalized and regulations proposed to facilitate certification of Latanye Farmers Broom Producers
* Areas of research were also identified including the need to analyze storage conditions for Latanye seeds.

**SECTION IV**

**CONCLUSIONS AND RECOMMENDATIONS**

This section should identify the main conclusions and discuss a set of principal recommendations. The section should discuss the future potential for Latanye broom production, its profitability and potential for sustaining livelihoods of rural producers in St. Lucia. Some ideas are presented below for further elaboration.

***Future Potential of Latanye Broom Production***

* Consequences of the current production and marketing system (that is if there is no change or intervention along the chain) – implications on the environment, input availability, productivity, profitability, cultural preservation, etc.;
* Interventions along the production-distribution chain – nursery for seedling production; cooperative organization of producers; product enhancement and development; diversifying the product range; developing new marketing channels and new markets; image and promotional development to expand awareness; etc;
* Consequences of interventions - environmental aspects; organizational, technical and managerial requirements for the nursery; capacity building, training and technical assistance along the chain; labor and financing requirements along the chain; productivity and profitability along the chain; preserving a cultural heritage/practices; policy and institutional support requirements; etc.
* Develop strategies to promote the wider use of Latanye brooms in St. Lucia. The local market is still the most important one but it needs to expand to stimulate improvements in the production system. The brooms could be marketed as a “natural” and unique product in St. Lucia with special characteristics that can enhance its visibility and usefulness to the local consumers. It could be marketed as one of “buy St. Lucia products.
* Development of a range of new products (handicrafts, etc.) based on the Latanye tree. **Given the current and prospective demand for brooms, the potential for developing a Latanye-based industry based on broom production only is very limited**. However, this potential can be expanded by developing a range of new products, particularly for the tourist market and for exports. Governmental support, training and various incentives will be required to venture into new product areas.
* Some innovation will be needed to the final products to increase their attractiveness, convenience in use and price competitiveness. That is, Latanye brooms will need to compete with other brooms in the market.
* Identify the various uses for different types of Latanye brooms (hand brooms, sweeping brooms, long brooms, etc.) at the marketing end and link these to the production end of the chain. Much work is needed in this aspect and it is perhaps the most important one to be developed for the expanding the market for the final product.
* Preliminary information indicates that there is an export market for Latanye brooms, particularly in Barbados and St. Lucians living abroad. There seems to be two niche markets which could be targeted - the Barbados market could be targeted for exports of brooms; and the tourist market in St Lucia (for all visitors including St. Lucians living abroad) is an attractive higher scale market for brooms. Expanding these markets will require among others, a reliable supply of brooms, some re-engineering of the final products for the different markets and making the products cost competitive.
* Although broom production is primarily an income generating activity for farmers, its use is an important part of St. Lucia’s culture and heritage. This characteristic offers an important advantage for expanding the market for the product locally including the tourist market. Some innovative work will need to be done and incentives and much training provided to producers to link their output to the culture and heritage of St. Lucia.

1. A broom requires 5 to 7 leaves depending on leaf size. [↑](#footnote-ref-1)
2. It is important to note that several costs are not considered in the analysis such as those related to drying, transportation, labor costs for broom making, storage and land rent (if land is rented). [↑](#footnote-ref-2)