

MINISTRY OF AGRICULTURE, LANDS, FORESTRY AND FISHERIES

Presents

JATROPHA CURCOS
**ALTERNATIVE FUEL FOR SUSTAINABLE
DEVELOPMENT**
BY : RUFUS LEANDRE



INTRODUCTION CON'T

- ◆ Area 616 km / 238 square miles
 - ◆ Divided into 3 district geological region
 - ◆ low rounded hills
 - ◆ steep terrain
 - ◆ gently sloping crop land
 - ◆ Stark et al and identified – 52 services
 - ◆ latordic clay
 - ◆ montmorillanitic clay
 - ◆ Alluvial soils
- 
- A stylized, dark teal silhouette of a mountain range is positioned in the bottom right corner of the slide, partially overlapping the text area.

Map of St. Lucia



INTRODUCTION CON'T

Land use pattern:

- Agriculture lands – 24, 530 acres

Permanent meadows and pastures

- 8447 – 1996
- 7525 - 2007

Permanent and medium term crops

- 34, 433 acres – 1996
- 17, 005 acres – 2007
- Forest and Wood Lands
- 1638 – 1996
- 1961 - 2007

Note by: Overall shift towards a continuation of temporary crops

INTRODUCTION

- **St Lucia acceded to CBD – July 28th 1993.**
- **1st NBSAP produced – 2000 – Cabinet Endorsed**
- **90% projects under NBSAP have been Completed**
- **In 2008 – the EU funds / SFA 2003**
- **Approved project – Integrated Natural Resource Management Programme .**
- **Draft legislation on Biodiversity and Sustainable use produced.**

INTRODUCTION CON'T

Access and benefit sharing taken into account.

Under the PERB Project – draft regulations produced through National Consultation.

Other milestones include:-

- St Lucia has produced 3 National Biodiversity Reports and is in process of completing its 4th one.
- A system of protected areas is currently being reviewed for endorsement by cabinet ministers
- Production of draft second National Biodiversity Strategy and Action Plan
- Establishment of National biodiversity information network.

INTRODUCTION CON'T

◆ SECTOR OVERVIEW –

- ◆ To contribute to a diversified natural income base and enhance the quality of rural livelihoods by generating the capacity for efficient and competitive production and marketing of agricultural goods and services.



◆ - GDP 4.2%, 1986 - 11,839, 400

◆ - Banana – 1.7% 1996 - 11,376, 220

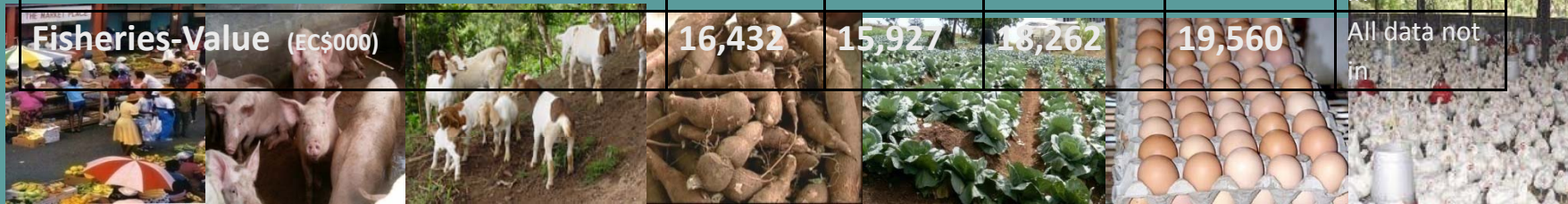
◆ Positive shift – Domestic - non traditional crops



◆ 2005 – 2227 Tonnes (EC- \$ 6.6 million)

Agricultural Production

COMMODITY	2004	2005	2006	2007	2008
Banana Export-Volume (Tonnes)	42,326	30,007	33,982	30,318	38,359
Banana Export-Value (EC\$000)	53.84	41.48	48.07	43.65	58.91
Domestic crop purchases (tonnes)	2560.1	2226.7	2691.89	2968.6	All data not in
Domestic crop purchases (EC\$000)	6908	6603	8598	10,405	All data not in
Table egg –Volume (000 dozen)	903	1113	848	883	All data not in
Table egg Table egg-Value (EC\$000)	5,418	6,676	4,240	4,364	All data not in
Chicken-Volume (Tonnes)	644.6	977	811.4	885.1	1091
Chicken-Value (EC\$000)	5,154	8,137	6,866	8,697	10,995
Pork-Volume (Tonnes)	92.4	131.6	261.1	462.6	All data not in
Pork-Value (EC\$000)	1,085	1,481	3,165	4,844	All data not in
Fisheries-Volume (Tonnes)	1,520	1,386	1,440	1,509	All data not in
Fisheries-Value (EC\$000)	16,432	15,927	18,262	19,560	All data not in



Food Imports 2002 to 2008



St Lucia's Flag and the Coat of Arms





National Tree (Calabash)



St Lucia's National Bird

St Lucia's National Dress



ST LUCIA'S NOBEL LAUREATES



Derek Walcott



Sir Arthur Lewis

St. Lucia's Beautiful Scenery



The Pitons



The Diamond Waterfall

St. Lucia's Beautiful Scenery



Jatropha curcas in St Lucia

The government of St Lucia has been looking at the subject of sustainable Agri. development for many years now.

In the area of plant material use for the production of Bio-fuels the following have been looked at:

- ◆ Coconut oil
 - ◆ Jatropha oil
 - ◆ And palm oil
- 
- A stylized, dark teal silhouette of a mountain range is positioned in the bottom right corner of the slide, partially overlapping the text area.

Since Shell group of companies have shown that they are committed to support this initiative a private company has invested approximately \$400,000.00 in research work on *Jatropha curcas* in St. Lucia. The process is ongoing.

A stylized silhouette of a mountain range in a darker shade of teal, located in the bottom right corner of the slide.

- ◆ *Jatropha Curcas* is a shrub, non edible oil producing crop predominately used to produce bio-diesel/ Bio-fuel.
- ◆ Through the process of transesterification it can also be used to make a wide range of products including energy pellets, Organic manure, soap, paper, cosmetics, toothpaste, pipe joint cement, and as a moistening agent in tobacco.

Jatropha curcas plant and green fruits



The ripe fruits and the seeds

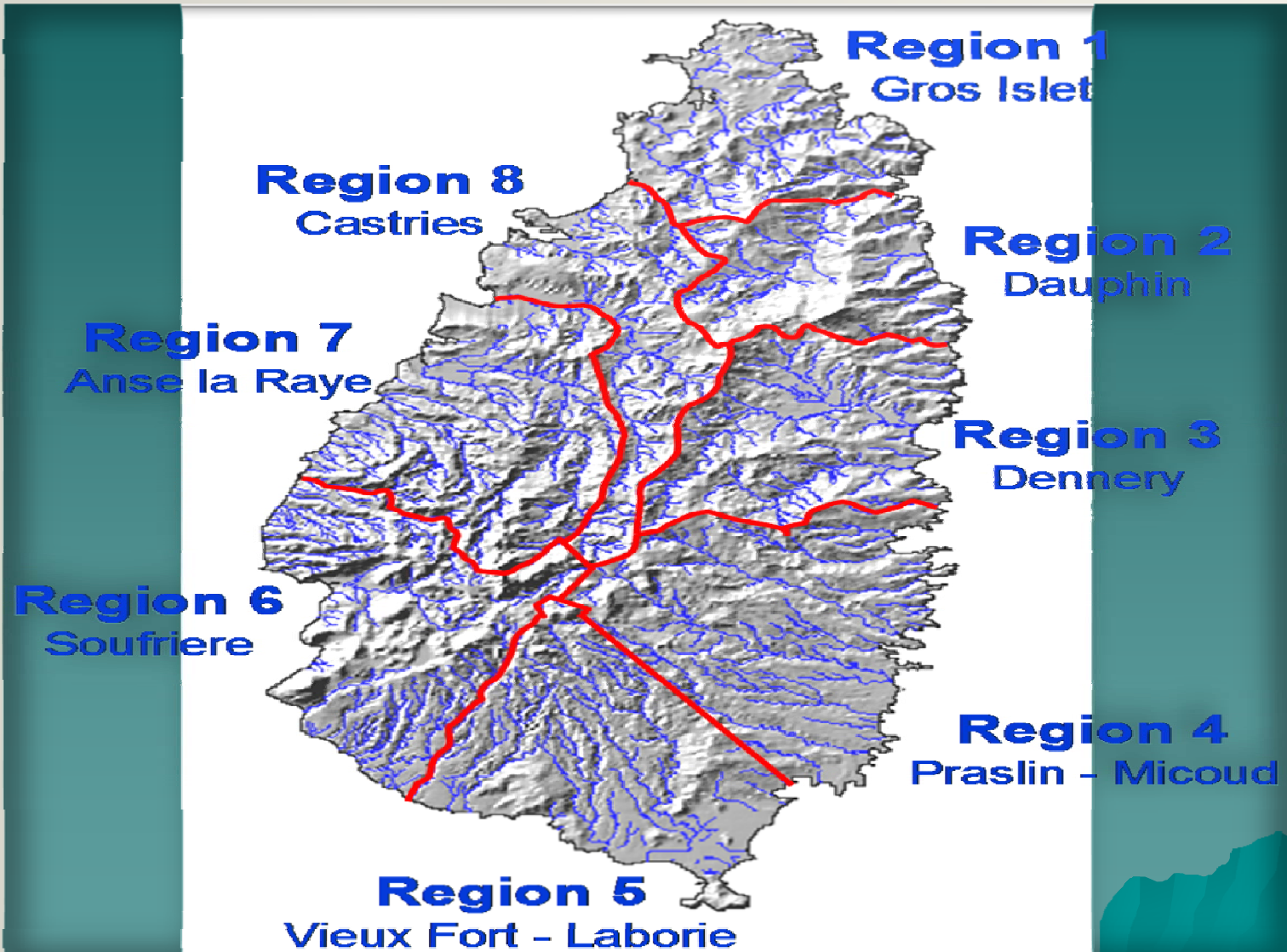


- ◆ Bio diesel (fatty acid alkyl esters) is a cleaner burning diesel replacement fuel made from natural, renewable sources such as new and used vegetable oils and animal fats. Just like petroleum diesel, bio diesel operates in compression ignition engines.
- ◆ It is eco-friendly and easy to use.
- ◆ Does not compete with edible plants.

Actual status in St. Lucia to date.

- ◆ Since May, 2007 intense work has started on the establishment of *Jatropha* plantations in St Lucia for research and production use.
- ◆ Four small plots were established covering a total of 5 acres
 1. Plateau estate has 2 acres
 2. Almata estate has 1 acre
 3. Cox farm has 1 acre
 4. Dubulays has 1 acre

MAP SHOWING WHERE JATROPHE EXITS



Jatropha plot 1 at Plateau Estate



Land Preparation and Planting System

- ◆ On plateau estate one of the 2 acres established is intercropped with ginger to get quick returns and occupy unused space.
- The field was cleaned and ploughed.
- Dolomitic lime added- 10 bags/acre
- Pen manure added at 10 tns. Per acre
- Soil re-worked and beds were made.

Jatropha Plot 2 at Plateau Estate



Jatropha plot at Almata estate



Land preparation at Plateau



Preparation of road to the plot.



Land Preparation continues



Ginger planted first on plot



Plant density

- ◆ Both ginger and Jatropha were planted on ridges
- ◆ Ginger was planted 1 ft x 3 ft
- ◆ Population- 14522 ginger plants per acre.
- Jatropha plant amongst ginger 5ft X 6ft
- Population- 1452 Jatropha plants

Results

- ◆ At six months Jatropha is in production
- ◆ Average yields noted per month over a period of 4 months were:

Yields per Month

Average: 1.30225 lbs / pl.

Months	Yields (lbs)
November	1.230
December	1.327
January	1.300
February	1.352

There is a slow down in the project and therefore the following has yet to be determined:

- ◆ Yields per plant after the first year.
 - ◆ Cost of production.
 - ◆ Quantity of oil obtainable per lb of seed.
 - ◆ Profit margins.
- 
- A stylized, dark teal silhouette of a mountain range is located in the bottom right corner of the slide, extending from the right edge towards the center.



■ The process of development is ongoing with a few glitches. It is believed that whatever information obtained from this project will contribute in a very effective manner to the way forward for sustainable energy development in St. Lucia.



**THANK
YOU**