

CASE STORIES FROM MAURITIUS ISLAND, INDIAN OCEAN.

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ISLANDERS EXOTICISM.

PART I THE EUCALYPTUS TREES.... GUM TREE.

SETTING THE SCENE. The young people of the islands of the Republic of Mauritius are the seven generations of human settlements from India, Africa and China. The island economy is Based on the returns from the sale of sugar on the European market, tourism and light clothing manufacturing. Over the past three centuries the main focus has been to sustain agriculture as the main source of revenue.

HISTORY. The island of Mauritius is of volcanic origin and used to support a dense ebony forest and a large palm savannah. This geological formation dates back to some 8 million years. In the seventeenth century, the Dutch discovered the island and exploited the entire ebony forests. Once the forest resources were removed, the Dutch attempted to establish agricultural crops but were not very successful. The Dutch abandoned the island and moved to the cape.

The French found the island a strategic place within the Indian ocean and decided to take over . They develop good agricultural practices and created small sugar estates all over the island.

The French found that the development of sugarcane plantations was best suited to the climatic conditions and the land resources

The development of Agriculture was dependent on labour and the availability of resources to fire sugar mills for the conversion of molasses into sugar crystals. The production of sugar was a very essential factor in the socioeconomic development of the island.

HISTORICAL DEVELOPMENT. However, all sugar estates were dependent on wood to fuel the urns. Thus, every sugar estates had to develop their land by ensuring that the following guidelines are adhered to.

All productive land be utilized for crop and food production.

Marginal lands be utilized for human settlements.

A forest reserve be kept and maintained as a source of fuel wood.

A small herd of cattle be kept for domestic purposes.

Deer be introduced in forests for game purposes.

SOCIAL IMPACT.

As much of the forest had been already felled to make way for sugar plantation, the demand for fuel wood was of great concern. Thus the introduction of fast growing species was essential.

Three fast growing species that were introduced. These were the Eucalyptus, Casuarinas and Tecoma.

The eucalyptus species were mostly grown on the lowland, specifically on the marginal and scrub land. The species were found to be very well suited to the climate and required very little attention. This fast growing tree was found to be very economical and had multipurpose utilities.

BENEFITS OF THE SPECIES. An interesting feature of the eucalyptus tree is that the tree is selfgenerating once cropped. As a matter of fact, there is always the regeneration of more than one stem after the first cropping.

The seeds are very fine sand grains which is carried by the wind. The seeds will start to grow and does not require any specific horticultural care.

In the past, the tree reaching a certain height 4 to 6 mts, were groped and utilized as framework for the labourers quarters which comprised of straw cladding. Similarly the livestock pens were constructed. Eucalyptus wood were stacked in the yard of every house hold regardless of their status.

All cooking were done on eucalyptus twigs and wood. Even the meals of Governors, high ranking officials and officers would had their meals prepared in the open fire fuelled with eucalyptus wood.

The surplus wood were converted into charcoal as a source of reserve fuel.

The poles harvested from the eucalyptus trees were utilized as scaffolding at construction sites

Despite it was noted that the diversity of plants found with a eucalyptus plantation is limited due the fierce competition of the young seedlings and the leaves containing a substance which prevent the growth of other species, the eucalyptus trees and its surroundings are suitable niches for the animal life. Geckoes, bees, butterflies, birds and small mammals are associated direct with such habitats.

The eucalyptus trees are considered as a plant species which consume water heavily and may threaten water sources such as water wells, bore holes and water level in underground water storage. Fortunately, the mauritian experience has proven to be some what different. The eucalyptus trees have to be thriving very well in extremely dry and rocky conditions. During the extremes summer temperatures 28 plus, it has been the tree which have kept all its leaves and provide the shades under which some species of grass have continued to survive. This species of grass is utilized as fodder.

ECONOMIC DEVELOPMENT. At the turn of year 1990, the lifestyles of many mauritians changed due to economic growth in the agricultural, tourism and textile manufacturing sectors; resulting in increase in the purchasing powers of the consumers. The first change was that the government had waived duty exemptions on cooking gas and kitchen appliances. This resulted in decrease in the coast of cooking and appliances. Thus, the average household could now turn to the use of gas cookers.

Such a practice decreased the demand of fuel wood reducing pressure on the marginal forests. On the other hand, the use of eucalyptus trees were being limited to the production of poles for scaffolding and the production of natural product.... honey. The use of honey both as a medicinal and curative product was recognized and the demand for honey increased. Many persons found honey to have both curative and preventive properties in dealing with chest infections, asthma, cough and allergies. Its nutritive values were recognized and the vegetarians found honey a very good source of energy.

CONTROVERSIAL. This fast growing tree species is nowadays being labeled as an invasive species by some conservationists purely on the stand that the plant did not form part of the original flora of the island.

TRADITIONAL PRACTICES. The story of eucalyptus is deeply rooted in the historical socioeconomic development of Mauritius.

Practically every one who is above the age of 15 years old, would have had meals cooked on eucalyptus wood. Similarly, these persons would have had their first bath in warm water which contained extracts of the eucalyptus leaves wisely prepared by the village traditional midwife and grand mothers. Another important aspect is the utilization of green eucalyptus leaves as insect repellent by burning the green leaves on open fires either when the meals are being cooked or when the remains of the rekindled fire.

Sadly at the turn of the third millennium, many of the traditional practices are nowadays being threatened.

The use of fire wood has been drastically reduced. The poles for scaffolding is slowly being replaced by iron poles tubular structures, the use of poles for housing has completely stopped as the house being built are of concrete, The other medicinal properties of the plant is being ignored as substitutes are readily available in chemical forms in chemists.

Although some conservationist are dead against the existence of this exotic plant, I am of opinion that eucalyptus woods plays a vital importance in our daily life.

Our life is directly link to this tree as we are bathed with extracts of eucalyptus leaves when we are born and some eucalyptus wood are also utilized for our cremation after death.

My wish is that the eucalyptus trees plantations be maintained in a sustainable way as our island economy is not entirely independent. This tree is a savings accounts in the environment bank which help humanity when all the purchasable resources and powers will be depleted

PART II. ISLAND EXOTICISM

SETTING THE SCENE. The aloe is another plant which have contributed largely to the socioeconomic development of our island. This plant may have been introduced from Africa probably through Madagascar or southern America. These were the sea routes which were utilized by the early settlers to Mauritius Island.

Although the uses of these leaves are now limited to the fencing of some vegetable plots and tying of some leafy products, many of us have long forgotten the importance's of this plant in our historical socioeconomic development. The products of this plant were of primary importance's in our grandfathers lives.

HISTORY.

The purpose of introducing this plant would have been to provide a source of raw materials for ropes. The leaves were split into various thin parts and used as ropes to tie bundles of fodder, tobacco leaves, stacks of sugar cane leaves and many other application. At influence, the plant produces a long stalk of 3 to 5 meters long. These stalks were used as poles and frames for housing on which straw were tied.

ADAPTATION. Another advantage of this plants that it thrives well in arid and semi arid conditions.

INDUSTRIAL PURPOSES.

This evergreen plant produce large simple leaves which were harvested on a large scale. The leaves were crushed using a mechanized rollers. The fibers from the leaves were washed and hanged to dry. Through another mechanical process, these fibers were utilized to make ropes, bags and baskets.

The ropes and gunny bags were utilized in the packing and handing of sugar.

ECONOMIC DEVELOPMENT. All sugar exports were done in gunny bags until the modernization of the harbor and the construction of the bulk sugar terminal.

Modernisation has improved the lifestyles of many islanders but has also brought such consumerism patterns which are threatening the environment.

With the establishment of the bulk sugar terminal, the modernisation of the harbor and our island being a strategic place with the Indian ocean for shipping routes, many of the old practices are disappearing.

The factory which used to manufacture gunny bags have been converted into a plastic bags factory.

The use of the aloe leaves are nowadays limited to the production of artisanal products. Some small scale vegetable producers are still using the fiber to tie bundles of greens.

CONTROVERSY. With the rapid economic growth, our lifestyles have also changed. Along with money, many no biodegradable products have found their way into the supermarkets and ended in the dumping grown. It has been estimated that the average 1000 tons of waste are carried to the dumping grounds on a daily basis. At this rate, the current landfill area will be exhausted by 2007.

Another interesting feature is that the landfills site are being stacked with plastic bags which are neither recovered nor recycled. It has been estimated that some 60 percent of the household waste are biodegradable and yet not recovered simply because the waste is backed in plastic bags. There is no alternative to the plastic bags.

HYPOTHESIS. If the rubbish bags were graded and gunny bags were used for the collection of the biodegradable wastes, in practiced these gunny bags can be stacked on a site and allow mother nature to convert the waste into a compost heap that can be applied within agricultural systems.

Further, the production of gunny bags would be revived. A readily available resource would have been into good use. Aloe plants would have been maintained in specific areas

OVERALL CHANGES WITHIN THE ENVIRONMENT.

The open cooking places are being replaced by gas stoves.

The fire wood that were utilized in the production of sugar has been substituted by electricity decent thermal devices.

The gunny bags have made way for steel containers.

Aloe is nowadays considered as an invasive species.

Private eucalyptus fields are being converted into housing communities.

The uses of these plants have been completely ignored.

LESSON LEARNED.

The lessons learned from the island exoticism is that there is always the need for species from other countries and boundaries for development. However, each introduced species does not tend to survive for ever. The future of exotic species is very much dependent on the action of man ... the decision makers. Man has always favouritise some species and reject others. The current trend is to keep those species which has an economic and monetary value. No one can ascertain which species will be of beneficial importance to man. Thus we are in a time capsule. I hope that the maintenance of sustainable population of species become a practice rather only a rule.