

A decorative graphic on the right side of the page features three blue circles of varying sizes, each with a lighter blue outer ring and a darker blue inner circle. These circles are arranged vertically, with the largest at the top, a medium one in the middle, and the largest at the bottom. Two thin blue lines intersect at the top left and extend diagonally across the page, framing the circles.

## Local Trend Analysis-- Environment---

NRFE draft Working Paper 10/11

## **1.0 Current status**

Mauritius is one of the most performing African countries in terms of economic success, political stability and peaceful cohabitation. However, for Mauritius to be successful in sustainable development much improvement is needed with regards to pollution, waste and environmental health. The causal relationship between sustainable development and different indicator of the environment quality has been extensively explored in recent years by the Ministry of Environment and National Development Unit. In this context, 32 indicators have been identified for Mauritius to effectively monitor the environment. This working paper thus attempts to examine some of the environmental indicators and consolidate the data obtained from Central Statistic Office (CSO) to shed some lights on current and future environmental trends in Mauritius.

### **1.1 land & soil**

Solid waste was identified as one of the main environmental problems that Mauritius is facing since 1998. Annually, Mauritius generates about 380,000 tons of wastes and it is expected that this value will increase by 418,000 tons by 2014. As shown in figure 1, solid waste is mostly generated from domestic wastes with 389,999 tonnes in 2009. In Mauritius solid waste is disposed at Mare Chicose landfill via 4 transfer stations namely: St Martin, Roche Bois, Poudre d'Or and La Brasserie.

Asbestos waste is the least solid wastes being generated in Mauritius with nearly 26 tonnes in 2009. Asbestos is a hazardous waste and extreme exposure to it can lead to health consequences such as asbestosis. According to a survey carried out in June 2002 by the Mauritius Sugar Authority it was found that almost all sugar industries contain asbestos ranging from small to as much as 5000 kg per factory. Moreover, from the information retrieve from the Ministry of land and housing there are about 2850 house each containing about one tonnes of asbestos. In addition, asbestos was also being used in piping system at the CWA. However, the

use of asbestos-cement pipes has been discontinued but due to their bulky nature the AC-pipes are not acceptable to be disposed at Mare Chicose lanfill.

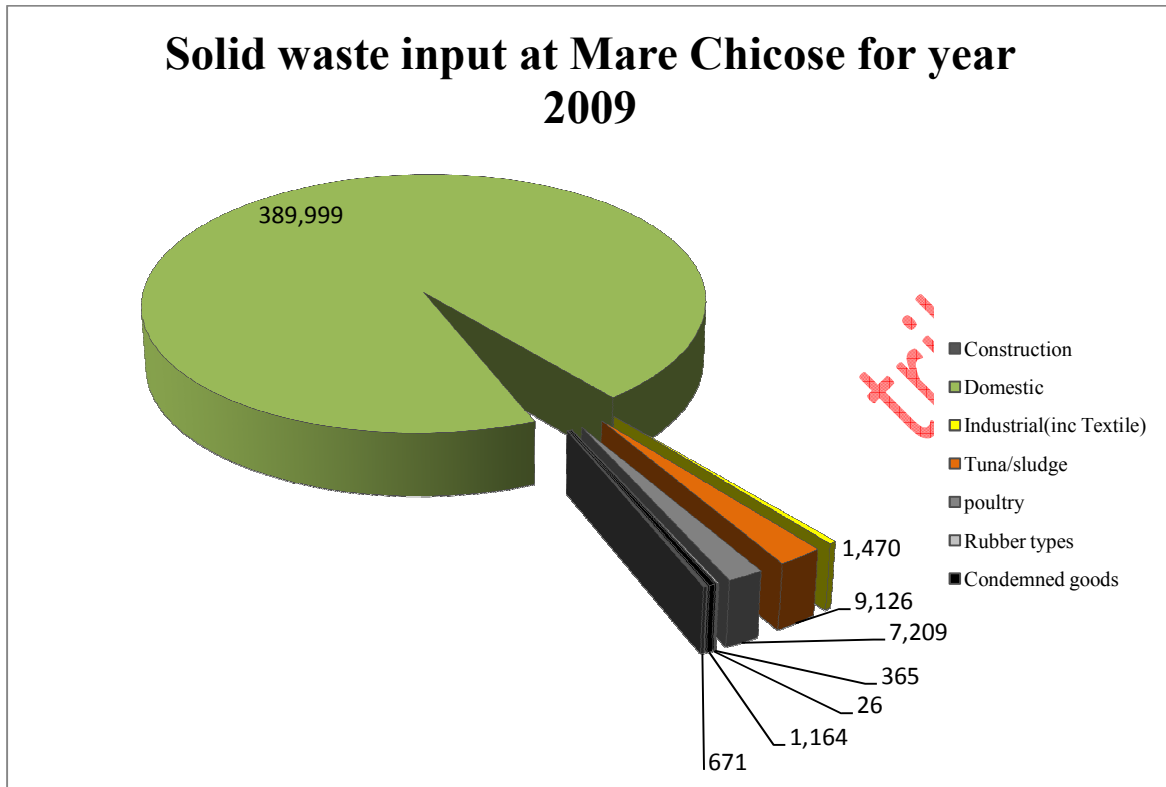


Figure 1: Solid waste input at Mare Chicose (CSO, 2009)

### 1.2 Solid waste compositions

Solid waste management problem has escalated over the last few decades as a result of population growth, increase in economic development and changes in lifestyle and consumption pattern. Consequently, this has led to an increase in the amount of solid waste generated in Mauritius. Every day around 1200 tons of solid wastes are generated from different sources of which 80% is organic waste. The organic waste is a composite waste which consists of kitchen waste, yard waste and paper waste. The amount of kitchen waste in the solid waste composition is about 45% and that of yard waste around 25%. The composition of solid waste management is shown in figure 2.

The non-organic waste which consists of plastic, metal, textile, glass and others share about 20% of total solid waste generated in Mauritius in 2002 as well as in year 2009. The only difference with these two compositions is that the amount of Plastic waste has decreased from 13% to 9% while the rest of the non-organic wastes have slightly increased. According to soft drink manufacturers about 32 million PET bottles and approximately 14 million of PVC bottles are put into circulation each single year. As a matter of fact, plastic waste has remained the predominant non-organic waste since 2002.

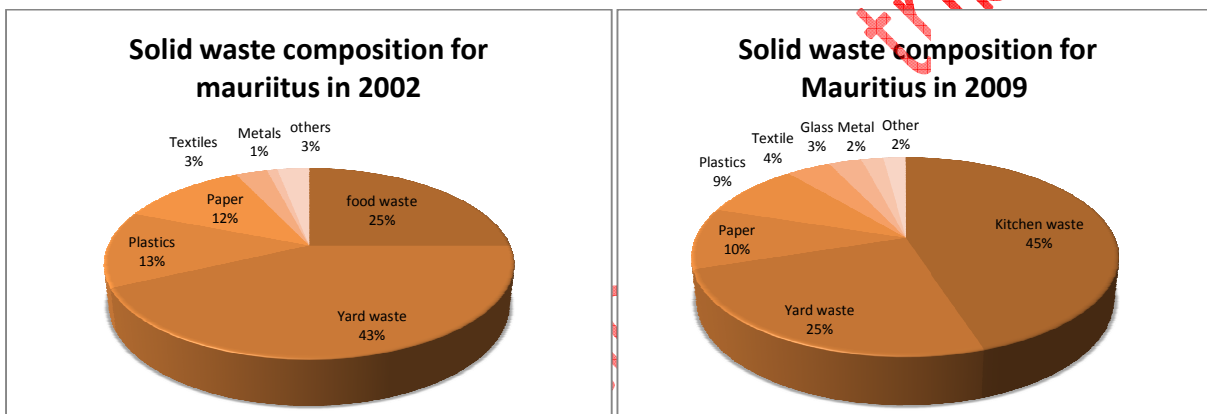


Figure 2: Solid waste input at Mare Chicose (Mohee *et al*, 2010)

Figure 3: Solid waste input at Mare Chicose (MID, 2011)

## 2.0 Trend in Solid Wastes in Mauritius

Referring to the figure below, a first insight in the development of solid waste disposal in Mauritius can be gained by describing the time series data for solid waste disposal at Mare Chicose landfill for the period 2001 to 2009. As illustrated in figure 4, the amount of domestic waste has increased by 60% in the last 8 years. It can also be observed that Tuna/sludge waste has remained stagnant from 2001 to 2004. However, after 2004, tuna/sludge waste registered an increase of 54.44 tonnes of waste.

During the same period (i.e. from 2001 to 2009) poultry waste registered an increase of 56.3%. On the other hand, much improvement has been made by the Ministry of Environment in regards to the disposal of asbestos. As a result, the amount of asbestos waste generated slowed down from 33 tonnes to 26 tonnes for year 2001 to 2009.

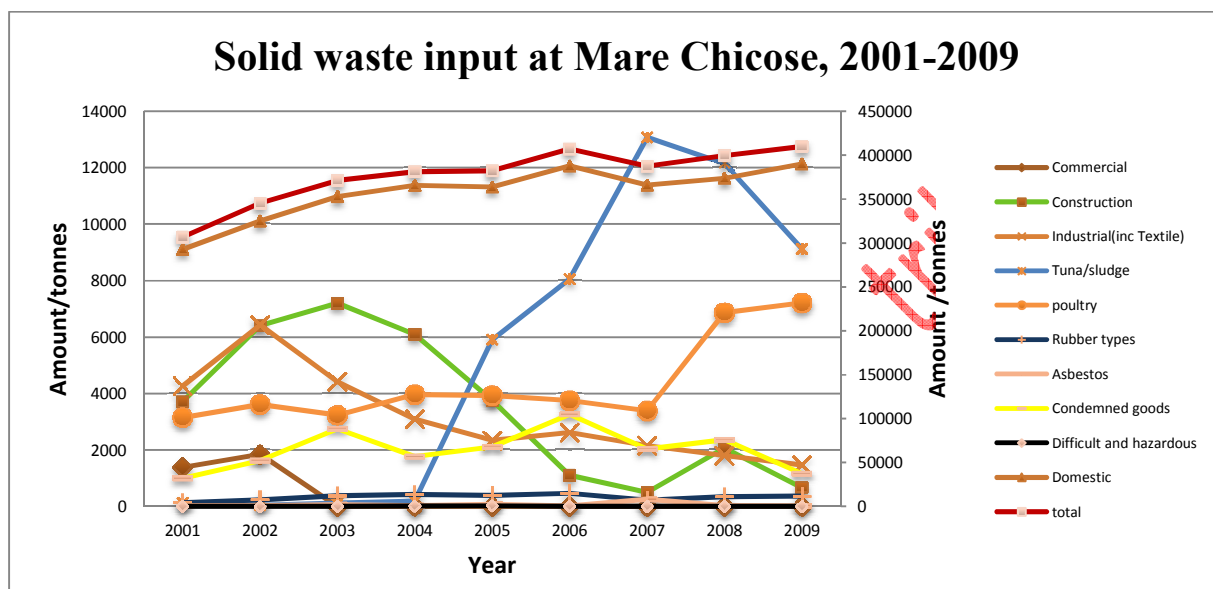


Figure 4: Solid waste input at Mare Chicose (CSO, 2009)

## 2.1 Trend in solid waste generated and GDP

Figure 5 shows the trend and the proportional relationship between the amount of solid waste disposed in the landfill in tonnes and the GDP per capita of Mauritius from year 1997 to year 2009. It can be observed that as GDP increases the amount of solid waste generated in the country also increases. The correlation between the amount of solid waste generated and the GDP per capita is 0.687.

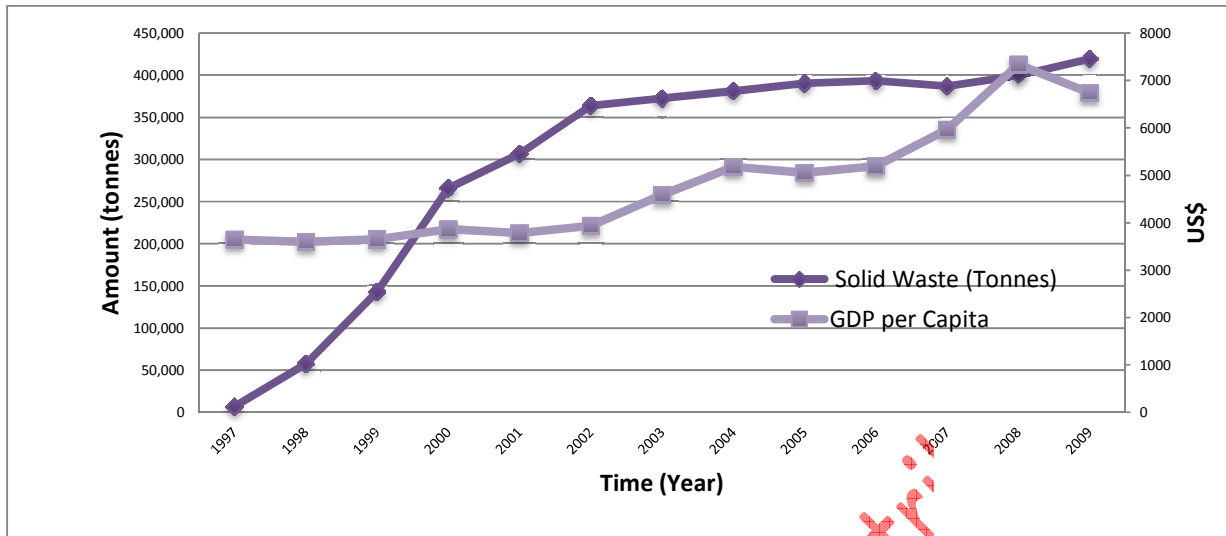


Figure 5: Solid waste disposes in landfill and real GDP per capita (World Bank, 2010)

Note: National waste collection was already in place when Mare Chicose landfill started in operations in 1997. However, open dumps were still receiving waste. These dumps were closed in phases until 2001. This explains the low waste input at the landfill in 1997, which substantially increased with the closing of the dumps (MID, 2010).

## 2.2 Trend in composition of solid wastes in Mauritius

The graphical presentation of the different composition of solid waste disposed at Mare Chicose in figure 6 shows that both organic and in-organic wastes have increased since 1998. However, we can notice that the amount of non-organic waste generated is very low compare to organic waste. In this respect, several suggestions have been proposed from the parastatal bodies to divert the organic waste from Mare Chicose to alternative such as anaerobic digestion and composting.

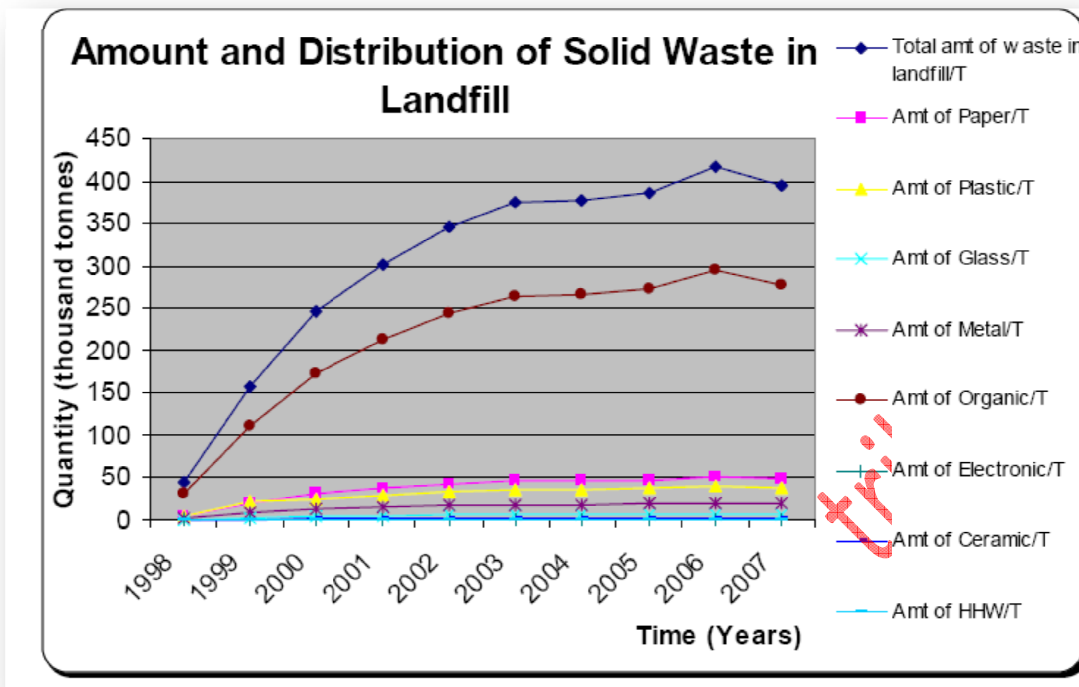


Figure 6: Trend in composition of Solid waste dispose in landfill (Mohee *et al*, 2010)

### 2.3 Trend in volume of wastewater treated by public treatment stations

As shown in figure 7, the volume of wastewater treated increase from 20.47 million cubic metres to 24.89 million cubic metres during the last 10 years. Presently, there are 13 wastewater treatment plants in Mauritius and have treated about 24.89 million cubic metres in year 2010(CSO, 2009).

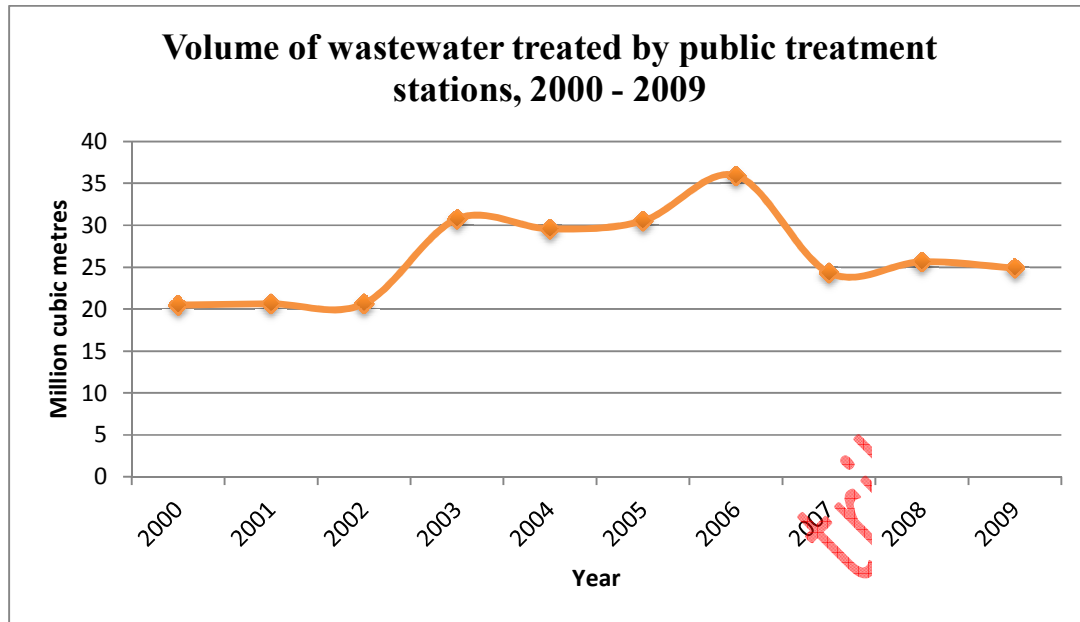


Figure 7: Trend in volume of wastewater treated by public treatment stations. (CSO, 2010)

#### 2.4 Percentage connection to public sewer system

The number of people connected to the sewer system accounted for 29% in year 2010. The remaining 71% uses on-site wastewater disposal system. In Mauritius the main area under the sewer system are Port Louis and its surrounding areas, parts of Plaines-Wilhems and the coastal area of Grand Baie. The public sewerage systems currently comprise of 553 km of sewer network, 12,236 manholes, 62 wastewater pumping stations and 17 wastewater treatment plants (Water & Sanitation Department, 2010)



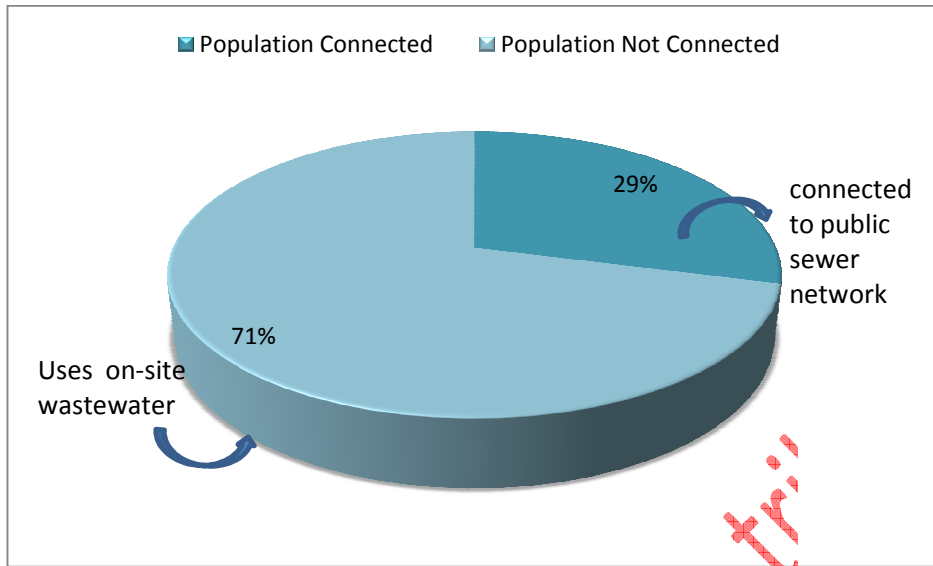


Figure 8: % connection to public sewer system (MID, 2010)

### 3.0 Outlook

The quantity of solid waste is projected to increase at an annual average rate of 2%.

### 4.0 Implemented Programmes

In view of the contemporary conditions on the amount of waste being disposed at Mare Chicose and looking forward its oncoming trouble and threat on its capacity and lifespan, the government in collaboration with other parastatal body has come up with new strategies to reduce the effect of environmental problem in Mauritius.

1. A Waste-to-Energy (WTE) Plant has been proposed with a capacity of 300,000 tonnes of solid wastes per year over 25 years of its operational life. The proposed project site is at La Chaumière, near the composting plant. The investment costs will be approximately MUR 6 billion.
2. A large-scale composting plant has been proposed by the Ministry of Local Government. The proposed project will process around 100,000 tonnes of MSW annually and is expected to be operational at La Chaumière by the end of 2011.

## 5.0 Indicators

Under the umbrella of National Programme on Sustainable Consumption and Production (SCP) for Mauritius (2008-2013) the following action plan have been devised:

1. Establish an Integrated Waste Management System in all Municipalities and District Councils in the next 2-3 years.
2. Increase the recycling of industrial and commercial waste with a focus on cardboards, plastics and paper by at least 25% over the next 5 years compared to 2007.
3. Increase the amount of waste going for composting from the hotel and domestic sector by at least 25% and 10% respectively over the next 5 years compared to 2007.
4. Devise an action plan for implementing the Extended Producer Responsibility concept in Mauritius by 2010.

## 6.0 Drivers and Inhibitors

### ➤ Drivers

Environmental problem will be driven mostly by an increase in economic development and changes in the lifestyle and consumption pattern.

### Inhibitors

1. It should be added that waste prevention will slow down due to changes in lifestyle towards a more individual-and-consumption oriented society.
2. Many plants report that lack of incentives from the government together with insufficient information and participation of the public holds back the growth of recycling.

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