

# Environment Statistics - 2009

## 1. Introduction

This issue of the Economic and Social Indicators present Statistics on Environment for year 2009. Information has been gathered from various institutions and thus some of the data may already appear in other publications.

## 2. The Economy and the Environment

Table 1 shows some main environment indicators over the ten-year period, 2000 - 2009. Table 2 provides some key socio-economic indicators showing the structural changes that have occurred during the same period.

Gross Domestic Product (GDP), which measures the total value of production, increased in nominal terms by about 128%, from Rs 120,291 million in 2000 to Rs 274,496 million in 2009. The share of agriculture in GDP fell from 7.0% in 2000 to 4.3% in 2009, that of manufacturing decreased from 23.5% to 19.5%, and that of transport and communications, from 13.0% to 10.7%.

During the same period, population of the Republic of Mauritius increased by 7.4% from 1,186,873 to 1,275,034 and population density from 606 to 649 per km<sup>2</sup>.

## 3. Land use, Forestry and Agriculture

### 3.1 Land use

Table 3 shows data on land use for 1995 and 2005. During that period, the proportion of land under sugarcane decreased by 6.3%, tea plantations declined by 81.6% and forestry by 17.2%. Land used for other agricultural activities increased by 33.3% while built up areas expanded by 27.7%.

### 3.2 Forestry

Preservation of forests is vital for the protection of the ecosystem. Table 4 shows the forest area by type of land and category of ownership for the Island of Mauritius. In 2009 the total forest area was 47,159 hectares, of which 22,159 hectares (47%) were state-owned and the remaining 25,000 hectares (53%) were privately-owned.

### 3.3 Agriculture

From 2008 to 2009, the effective area under sugarcane has shrunk by 2,500 hectares (-3.8%) from 65,500 hectares to 63,000 hectares. During the same period area under tea increased to 713 hectares (1.7%) from 701 hectares and that of tobacco plantation decreased from 256 to 230 (-10.2%). (Table 5).

### 3.3.1 Fertiliser imports

The total imports of fertilisers for the period 2007 to 2009 are shown in Table 6. Imports for the year 2009 were 57,169 tonnes, an increase of around 22.5% over the 2008 figure of 46,667 tonnes.

## 4. Energy

The production and consumption of energy causes air pollution, and alters the ambient temperature. They are by far the most important contributors of air pollutants through the emission of carbon dioxide and other greenhouse gases.

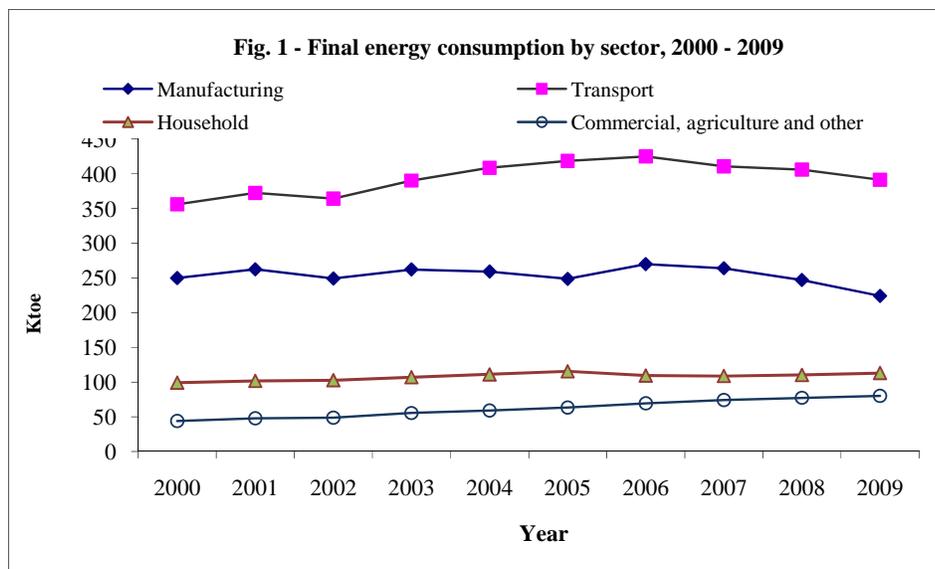
The tonne of oil equivalent (toe or thousand toe - ktoe) has been used to express the energy content of the different fuels in terms of a common accounting unit.

### 4.1 Primary energy requirements

The total primary energy requirement of the country decreased by 4% from 1,404 ktoe in 2008 to 1,347 ktoe in 2009. Around 82% of the total primary energy requirement was met by imported fuels (oil, LPG and coal) and the remaining 18%, obtained from local sources (bagasse, hydro and fuelwood) that are renewables (Table 7).

### 4.2 Final energy consumption

Final energy consumption decreased by 3.8% from 841 ktoe in 2008 to 809 ktoe in 2009. The largest consumers were the transport and manufacturing sectors which accounted for 48.4% and 27.7% of the total energy consumption respectively (Table 8).



### 4.3 Fuel Inputs for electricity production

Different types of fuel are used for electricity production. Coal remained the most important input and its share was 48.9% in 2009. Bagasse input decreased from 27.7% to 24.9%. On the other hand, the contribution of fuel oil rose from 21.4% to 25.1% (Table 9).

## 5. Transport

### 5.1 Stock of registered motor vehicles

The number of registered motor vehicles has gone up from 351,406 in 2008 to 366,520 in 2009, a rise of 4.3%.

The number of vehicles per 1,000 population rose from 285 in 2008 to 296 in 2009, representing an increase of 3.9% (Table 10).

### 5.2 Fuel used for transport

In 2009, some 391 ktce of energy were used for transport; diesel oil accounted for 155 ktce or 39.6%, aviation fuel 111 ktce or 28.4%, gasoline 121 ktce or 30.9% and Liquefied Petroleum Gas (LPG), 5 ktce or 1.1%. From 2008 to 2009 the consumption of diesel oil rose by 0.6% and gasoline by 10% while that of aviation fuel fell by 19% (Table 11).

## 6. Ambient Air Quality

The Ministry of Environment and Sustainable Development has both stationary and mobile air quality monitoring stations that are operational since 2001.

The main pollutants under investigation are Dust (PM<sub>10</sub>), Dust (PM<sub>2.5</sub>), Black Carbon, Sulphur Dioxide, Nitrogen Dioxide and Carbon Monoxide.

The results for all the pollutants under study at the five monitoring stations in 2009 shows that the levels of ambient pollutants were most of the time well below the norms (Standards for air quality). This implies that the overall quality of the ambient air in the monitoring areas is at a good and permissible level (Table 12).

## 7. Greenhouse gas (GHG)

### 7.1 Total GHG emissions and removals

Table 13 shows the total emissions and removals of greenhouse gases. Carbon dioxide (CO<sub>2</sub>) remained the main greenhouse gas. The data indicate a fall in net CO<sub>2</sub> emissions from 3,187 thousand tonnes in 2008 to 3,075 thousand tonnes in 2009 (-3.5%). Net emissions take into account the removal of CO<sub>2</sub> by forests which act as 'sinks'.

## 7.2 Greenhouse gas inventory

The national inventory of greenhouse gas (GHG) emissions by source categories for the years 2008 and 2009 is given in Table 15. The main GHG is carbon dioxide (CO<sub>2</sub>). The non-carbon dioxide emissions consist mainly of carbon monoxide and sulphur dioxide.

### 7.2.1 Carbon dioxide (CO<sub>2</sub>) emissions from fuel combustion activities

Carbon dioxide emission resulting from fuel combustion fell from 3,485.8 thousand tonnes in 2008 to 3,365.3 thousand tonnes in 2009 (-3.5%), driven mostly by 22.9% decrease of CO<sub>2</sub> emissions from the manufacturing industries (Table 14).

The energy industries remain the main source of CO<sub>2</sub> emission in the atmosphere. They contributed around 59.3% of the emissions, with 1,997 thousand tonnes in 2009. They were followed by the transport sector which contributed 844.8 thousand tonnes (25.1%) of the total emissions and the manufacturing industries with 351.6 thousand tonnes (10.4%).

### 7.2.2 Non-CO<sub>2</sub> emissions

Non-CO<sub>2</sub> emissions were minimal and in 2009 they were distributed in thousand tonnes as follows: carbon monoxide 64.0, sulphur dioxide 33.6, non-methane volatile organic compounds (NMVOC) 17.6, oxide of nitrogen 17.5, methane 21.3 and nitrous oxide 1.0 (Table 15).

## **8. Water**

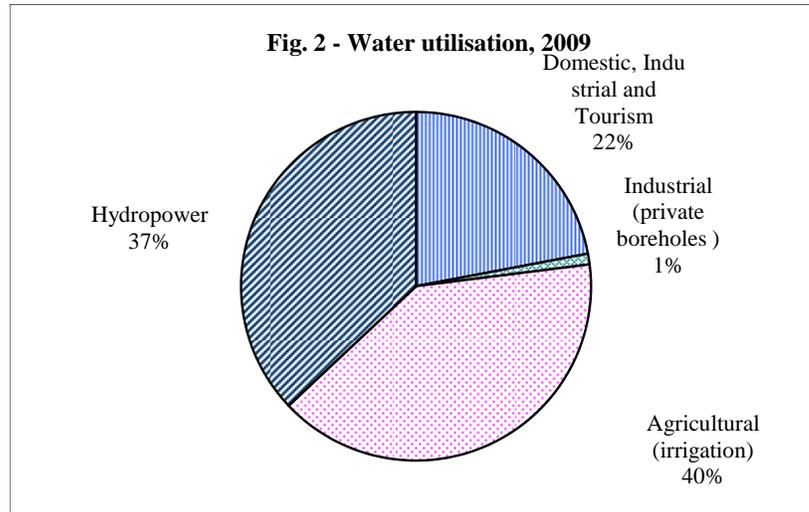
Water being a basic support element for human life and ecosystems, freshwater resources are of vital environmental and biological importance.

### *8.1 Water balance*

The water balance is based on long term records of annual average rainfall and indicates how fresh water resources are distributed. In 2009, the Island of Mauritius received 4,470 million cubic metres (Mm<sup>3</sup>) of precipitation (rainfall) representing an increase of 0.7% compared to 4,440 Mm<sup>3</sup> obtained in 2008. Surface runoff accounted for 60% of the water balance, while evapotranspiration and ground water recharge accounted for 30% and 10% respectively (Table 16).

### *8.2 Water utilisation*

In 2009 the total water demand was estimated at 1000 Mm<sup>3</sup>. The agricultural sector accounted for most of the water utilised with 399 Mm<sup>3</sup> or 40%. Utilisation for the other purposes was as follows: hydropower 368 Mm<sup>3</sup> or 37%, domestic, industrial and tourism 223 Mm<sup>3</sup> or 22% and private boreholes 10 Mm<sup>3</sup> or 1% (Table 17 and Fig. 2).



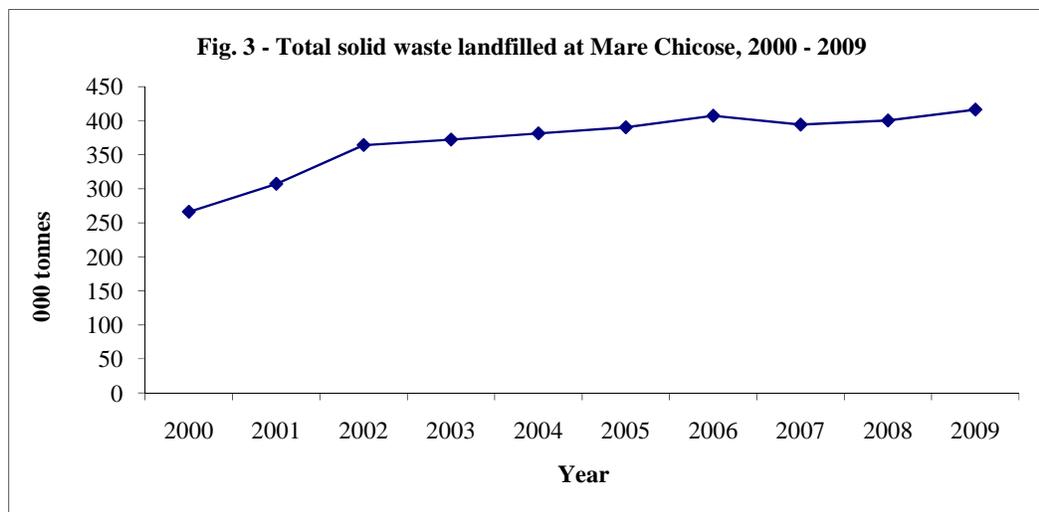
Around 87% of the total water demand was met by surface water and the remaining 13 % by ground water (Table 17).

## 9. Waste

### 9.1 Waste Disposal

Solid waste has been tracked mainly as domestic, construction and others. In 2009, the total amount of solid waste landfilled at Mare Chicose increased to 415,948 tonnes from 399,488 tonnes in 2008, up by 4.1% (Table 18).

Domestic waste constituted 94% of the total solid waste landfilled in 2009. The trend of the amount of solid wastes landfilled is as shown in figure 3.



## **10. Complaints**

Effective environmental management needs an appropriate coordination and monitoring of environmental problems. The Ministry of Environment and Sustainable Development is entrusted to address environmental complaints received from the general public.

Table 19 lists the number of complaints by category received by the Pollution Prevention and Control Division of the Ministry of Environment and Sustainable Development from 2007 to 2009. The number of complaints received decreased from 596 in 2008 to 522 in 2009 (-12.4%).

## **11. Environmental Impacts Assessment (EIA) and Preliminary Environmental Report (PER) Licences**

The Ministry of Environment and Sustainable Development grants EIA and PER licenses to meet environmental requirements. Those undertakings that require such a licence are listed in the First Schedule of the new Environment Protection Act, 2002.

### *11.1 EIA and PER licences*

In 2009, some 23 EIA licences were granted of which 7 (30%) were issued to industrial developments and 7 (30%) to coastal hotels and related works (Table 20).

During the same period, 31 PER licences were granted, out of which 9 (29%) were for poultry rearing projects.

## **12. Environmental Performance Index (EPI)**

The Environmental Performance Index (EPI) ranks countries on performance indicators covering environmental health and ecosystem vitality. These indicators provide a gauge at a national government scale of how close countries are to established environmental policy goals. Mauritius climbed to the sixth position in the 2010 EPI from the fifty eighth position in the 2008 EPI rankings. The improved result is mainly due to the performance scores in the ecosystem vitality, from 58.5 to 77.5 (Table 21).

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## Technical notes

### Concepts and definitions

#### Environment

*Environment*: the totality of all the external conditions affecting the life, development and survival of an organism.

An *environmental indicator*: A parameter or a value derived from parameters, that points to, provides information about and/or describes the state of the environment, and has a significance extending beyond that directly associated with any given parametric value.

#### Economy

*Gross Domestic Product (GDP)*: GDP is the aggregate money value of all goods and services produced within a country out of economic activity during a specified period, usually a year, before provision for the consumption of fixed capital.

*Energy intensity*: Energy intensity provides a measure of the efficiency with which energy is being used in production or energy used (tonnes of oil equivalent) per Rs 100,000 GDP (at constant prices)

#### Land use, Agriculture and Forestry

*Land use*: Land use refers to the main activity taking place on an area of land, for example, farming, forestry or housing.

*Built-up areas*: Built-up areas consist of land under houses, industrial zones, quarries or any other facilities, including their auxiliary spaces, deliberately installed so that human activities may be pursued.

*Nutrient*: A nutrient is a substance, element or compound necessary for the growth and development of plants.

#### Energy

*Primary energy requirement*: It is the sum of imported fuels and locally available fuels less re-exports of bunkers and aviation fuel to foreign aircraft after adjusting for stock changes.

*Final energy consumption* is defined as energy consumption by final user – i.e. which is not being used for transformation into other forms of energy.

#### Renewables or Renewable sources of energy

Renewables are natural resources that, after exploitation, can return to their previous stock levels by natural processes of growth or replenishment. Conditionally renewable resources are those whose exploitation eventually reaches a level beyond which regeneration will become impossible. Such is the case with clear-cutting of tropical forests.

## **Greenhouse gas emissions**

*Greenhouse gases (GHG):* GHG are gases occurring naturally and resulting from human activities (production and consumption); that contribute directly or indirectly to global warming. Some main naturally existing GHG are Carbon Dioxide (CO<sub>2</sub>), Methane (CH<sub>4</sub>) and Nitrous Oxide (N<sub>2</sub>O). Other gases such as Carbon Monoxide (CO), Oxides of Nitrogen (NO<sub>x</sub>), Non Methane volatile organic compounds (NMVOC) and Sulphur Dioxide contribute indirectly to global warming. GHG's act much like a glass greenhouse, trapping heat in the lower levels of the atmosphere and reflecting the heat back to the earth's surface, causing it to heat up.

## **Water**

*Water balance:* The water balance is based on long term records of annual average rainfall and indicates how freshwater resources are distributed.

*Precipitation:* Rain falling from the atmosphere and deposited on land or water surfaces.

*Evapotranspiration:* Combined loss of water by evaporation from the soil or surface water and transpiration from plants and animals.

*Surface runoff:* The flow of surface water from rainfall, which flows directly to streams, rivers and lakes. Runoff may cause soil erosion.

*Groundwater recharge:* Process by which water is added from outside to fresh water found beneath the earth surface.

## **Waste**

*Solid waste* includes domestic garbage, industrial and commercial waste, sewage sludge, wastes resulting from agricultural and animal husbandry operations and other connected activities, demolition wastes and mining residues.

*Landfill:* Final placement of waste in or on the land in a controlled or uncontrolled way according to different sanitary, environmental protection and other safety requirements.

## **Environmental impact assessment**

*Environmental impact assessment (EIA):* Analytical process that systematically examines the possible environmental consequences of the implementation of projects, programmes and policies.

## **Preliminary environmental report**

*Preliminary environmental report (PER)* is a short form of EIA and this preliminary analysis is undertaken to identify the impacts associated with the proposed development and the means of mitigation.

**Environment-Economic-Accounts (EEA):** a framework for demonstrating the Environment-Economic relationship in terms of both physical and monetary values.

## Air Quality

*Ambient air quality* is the quality of the air that surrounds us and which we breathe.

*Air quality standards*: Levels of air pollutants prescribed by regulations that may not be exceeded during a specified time in a defined area.

*PM 10*: Dust or Particulate Matter with a diameter of 10 µg.

## ABBREVIATIONS AND SYMBOLS

### Abbreviations

Rs mn	Rupees million
Rs	Rupees
US\$	US dollar
%	Percentage
f.o.b	free on board
c.i.f	Cost, insurance, freight
000	Thousand
n.e.s	Not elsewhere specified
Mm <sup>3</sup>	Million cubic metres
Gg	Gigagram (thousand tonnes)
ktoe	Thousand tonnes of oil equivalent
Toe	Tonne of oil equivalent
µg/m <sup>3</sup>	Microgramme per cubic metres
ppb	Part per billion
ppm	Part per million
SIFB	Sugar Insurance Fund Board
TSP	Total suspended particles
EIA	Environmental impact assessment
PER	Preliminary environmental report
IUCN	International Union for the Conservation of nature

### Symbols

-	Nil or negligible
...	Not available

### *Conversion factor*

1 square kilometre = 100 hectares

**Table 1 - Main environment indicators, Republic of Mauritius, 2000 and 2009**

Indicator	Units	2000	2009
1. Total land area	000 ha	204.0	204.0
2. Irrigated land	ha	21,543	19,506
3. Total forest area (as a % of total land area)	%	30.4	25.3
4. Land Protected Areas	ha	13,973	14,854
5. Marine Protected Areas (MPA's)	ha	7,190	7,216
6. Threatened plant species (IUCN Red List)	Number	...	88
7. Threatened animal species (IUCN Red List)	Number	...	65
8. Total fish catch	tons	7,875	8,975
9. Mean catch per fisherman day	kg	6.1	6.4
10. Total Carbon dioxide emission	000 tons	2,647.9	3,367.6
11. Per capita carbon dioxide emission	tons	2.3	2.6
12. Mean annual rainfall	millimetres	2,010	2,397
13. Annual fresh water abstraction	Mm <sup>3</sup>	677	...
14. Daily per capita domestic water consumption	litres	155	162.0
15. Daily per capita solid waste generated ( <i>estimate</i> )	Kg	0.7	0.9
16. Total electricity generated	GWh	1,778	2,577
17. Per capita primary energy requirement	toe	0.9	1.1
18. Per capita final energy consumption	toe	0.6	0.6
19. Energy intensity	toe per Rs 100,000 GDP	1.7	1.4

**Table 2 - Main socio-economic indicators, Republic of Mauritius, 2000 and 2009**

Indicator	Units	2000	2009 <sup>1</sup>
1. Gross Domestic Product (GDP) at market prices	Rs mn	120,291	274,496
2. Sectoral contribution to GDP			
<i>Agriculture</i>	%	7.0	4.3
<i>Manufacturing</i>	%	23.5	19.5
<i>Construction</i>	%	5.6	7.1
<i>Wholesale and retail trade</i>	%	12.2	12.0
<i>Hotels and restaurants</i>	%	6.5	7.3
<i>Transport and communications</i>	%	13.0	10.7
<i>Financial intermediation and business services</i>	%	9.7	11.7
<i>Other</i>	%	22.6	27.4
3. GDP annual growth rate (basic prices)	%	9.7	3.1
4. Per capita GDP at market prices	Rs	101,327	214,810
5. Per capita GDP in US dollars	US\$	3,857	6,725
6. Investment (GDFCF)	Rs mn	27,595	71,848
7. Exports (f.o.b) (include ship's stores and bunkers)	Rs mn	40,882	61,784
8. Imports (c.i.f)	Rs mn	54,928	118,303
9. Population (mid year)	000	1,187	1,275
10. Population annual growth rate	%	1.1	0.5
11. Population density (per kilometre square)	Number	606	649
12. Total labour force <sup>2</sup>	000	528.6	587.3
13. Total employment <sup>2</sup>	000	485.9	545.8
<i>Agriculture (as a % of total)</i>	%	12.1	8.5
<i>Manufacturing (as a % of total)</i>	%	28.6	22.7
14. Unemployment rate <sup>2</sup>	%	6.5	7.3
15. Inflation rate	%	4.2	2.5
16. Tourist arrivals	000	656.4	871.4

<sup>1</sup> Provisional<sup>2</sup> Labour force, employment and unemployment, 16 years and over.

**Table 3 - Land use, Island of Mauritius, 1995 and 2005**

Land Use Distribution	2005 <sup>1</sup>		1995		Change	
	Hectares	%	Hectares	%	Hectares	%
Sugar cane plantations (Source SIFB)	72,000	38.6	76,840	41.2	-4,840	-6.3
Tea plantations (Source Tea Board)	674	0.4	3,660	1.9	-2,986	-81.6
Forests, shrubs and grazing lands	47,200	25.3	57,000	30.6	-9,800	-17.2
Other agricultural activities	8,000	4.3	6,000	3.2	2,000	33.3
Infrastructure	4,500	2.3	4,000	2.1	500	12.5
Inland water resource systems	2,900	1.6	2,600	1.4	300	11.5
Built-up areas	46,500	24.9	36,400	19.5	10,100	27.7
Abandoned cane fields	4,726	2.5	...	...	...	...
<b>Total</b>	<b>186,500</b>	<b>100</b>	<b>186,500</b>	<b>100</b>		

Source: Republic of Mauritius, Stocktaking and Stakeholders Consultation - Climate Change Activities Report, May 2006

<sup>1</sup> Estimate

**Table 4 - Forest area by category, Island of Mauritius, 2009**

Category of Forest	Hectares
<b>State - owned</b>	<b>22,159</b>
Plantations	11,855
Nature reserves	799
<i>On mainland</i>	200
<i>Islets</i>	599
National Park <sup>1</sup>	6,574
Islet National Park <sup>2</sup>	134
Bras D'eau & Poste La Fayette Reserves <sup>3</sup>	472
Other Forest Lands	1,419
Pas Geometriques	631
<i>Plantations</i>	222
<i>Leased for grazing and tree planting</i>	230
<i>Others (mostly rocky)</i>	179
<i>Vallee d'Osterlog Endemic Garden</i>	275
<b>Private - owned lands</b>	<b>25,000</b>
Reserves	6,553
<i>Mountain reserves</i>	3,800
<i>River reserves</i>	2,740
<i>Nature Reserves</i>	13
Other <sup>4</sup>	18,447
<b>Total</b>	<b>47,159</b>

Source: Ministry of Fisheries and Rodrigues.

<sup>1</sup> Black River Gorges National Park was proclaimed in 1994 and data on the area enclosed by the boundaries of the park were not available until 1997

<sup>2</sup> Islet National Park was proclaimed in 1994.

<sup>3</sup> Bras D'eau & Poste La Fayette Reserves were proclaimed in 2002 and data of the area is included as from the year 2001.

<sup>4</sup> includes plantations, forest lands, scrub and grazing lands. Forest area was decreasing gradually. New estimates in private lands worked out in 2004.

**Table 5 - Effective area under cultivation, Island of Mauritius, 2007 - 2009**

<b>Crops</b>	Hectares		
	<b>2007</b>	<b>2008</b>	<b>2009</b>
Sugarcane	68,523	65,500	63,000
Tea	709	701	713
Tobacco	258	256	230

**Table 6 - Imports of fertilizers, Island of Mauritius, 2007 - 2009**

<b>Year</b>	<b>Quantity (tonnes)</b>	<b>Value</b>	
		<b>FOB (Rs mn)</b>	<b>CIF (Rs mn)</b>
2007	45,336	379.9	476.2
2008	46,677	783.7	935.2
2009	57,169	712.8	832.2

FOB: Free on board

CIF: Cost, Insurance, Freight

**Table 7 - Primary energy requirement by energy source, Republic of Mauritius, 2007 - 2009**

ktoe (000 Tonne of oil equivalent)

Energy Source	2007	2008 <sup>2</sup>	2009 <sup>3</sup>
<b>Imported</b>	<b>1,136.0</b>	<b>1,140.2</b>	<b>1,110.6</b>
Oil <sup>1</sup>	712.1	668.4	672.4
Liquefied petroleum gas (LPG)	68.9	67.9	68.9
Coal	355.0	403.9	369.3
<b>Local Renewables</b>			
Hydro / Wind <i>GWh</i>	7.2	9.3	10.7
Bagasse *	230.5	246.4	218.0
Fuel wood *	8.0	7.7	7.7
<b>Sub total (renewables)</b>	<b>245.8</b>	<b>263.5</b>	<b>236.3</b>
<b>Total</b>	<b>1,381.8</b>	<b>1,403.7</b>	<b>1,346.9</b>

\* Estimates

<sup>1</sup> Includes gasolene, diesel oil, dual purpose kerosene and fuel oil

<sup>2</sup> Revised

<sup>3</sup> Provisional

**Table 8 - Final energy consumption by sector, Republic of Mauritius, 2007 - 2009**

ktoe (000 Tonne of oil equivalent)

Sector	2007		2008 <sup>1</sup>		2009 <sup>2</sup>	
	Quantity (Ktoe)	%	Quantity (Ktoe)	%	Quantity (Ktoe)	%
Manufacturing	264.0	30.8	247.7	29.4	224.1	27.7
Transport	410.9	47.9	406.1	48.3	391.3	48.4
Household	108.8	12.7	110.2	13.1	113.1	14.0
Commercial	65.2	7.6	69.1	8.2	72.3	8.9
Agriculture	4.9	0.6	4.5	0.5	4.1	0.5
Other (n.e.s & losses)	3.6	0.4	3.7	0.4	3.7	0.5
<b>Total</b>	<b>857.4</b>	<b>100.0</b>	<b>841.2</b>	<b>100.0</b>	<b>808.6</b>	<b>100.0</b>

<sup>1</sup> Revised

<sup>2</sup> Provisional

**Table 9 - Fuel input for electricity production, Republic of Mauritius , 2007 - 2009**

ktoe (000 Tonne of oil equivalent)

Fuel	2007		2008 <sup>1</sup>		2009 <sup>2</sup>	
	Quantity (Ktoe)	%	Quantity (Ktoe)	%	Quantity (Ktoe)	%
Fuel oil	193.8	27.3	160.8	21.4	183.0	25.1
Diesel oil	2.8	0.4	1.6	0.2	2.8	0.4
Kerosene	1.1	0.2	2.2	0.3	5.1	0.7
Coal	342.6	48.5	378.0	50.4	356.0	48.9
Bagasse	166.5	23.6	208.2	27.7	181.7	24.9
<b>Total</b>	<b>706.8</b>	<b>100.0</b>	<b>750.8</b>	<b>100.0</b>	<b>728.6</b>	<b>100.0</b>

<sup>1</sup> Revised<sup>2</sup> Provisional**Table 10 - Stock of registered motor vehicles, Island of Mauritius, 2006 - 2009**

Type of vehicle	2006	2007	2008	2009
Cars and Dual Purpose Vehicle (DPV)	135,132	144,405	155,528	165,036
Auto / Motorcycles	138,174	142,606	147,988	152,935
Heavy Motor Car and Bus	3,730	3,976	4,052	4,078
Van and Lorry	36,794	37,470	38,060	38,572
Other vehicles <sup>1</sup>	5,610	5,688	5,778	5,899
<b>Total</b>	<b>319,440</b>	<b>334,145</b>	<b>351,406</b>	<b>366,520</b>

No of vehicles per 1000 population	263	272	285	296

**Table 11 - Fuel used for transport, Republic of Mauritius, 2007 - 2009**

ktoe (000 Tonne of oil equivalent)

Fuel	2007	2008	2009
Gasolene	107	110	121
Liquefied Petroleum Gas (LPG)	7	6	5
Diesel oil	153	154	155
Aviation fuel	144	137	111
<b>Total</b>	<b>411</b>	<b>407</b>	<b>391</b>

**Table 12 - Ambient air quality monitoring by stations, Island of Mauritius, 2009**

Pollutant	Unit	Ambient air quality standard	Monitoring Site								
			La Tour Koenig			La Tour Koenig			Cite St Luc		
			Minimum	Maximum	24 hour Average for the month	Minimum	Maximum	24 hour Average for the month	Minimum	Maximum	24 hour Average for the month
			Period								
Jan-09			Apr-09			Feb - March 2009					
Dust ( PM <sub>10</sub> ) <sup>1</sup>	µg/m <sup>3</sup>	100	7.8	9.8	8.8	7.0	13.4	10.2	9.5	22.9	13.84
Dust ( PM <sub>2.5</sub> ) <sup>2</sup>	µg/m <sup>3</sup>	N/A	3.7	8.1	5.9	2.2	11.3	6.75	4.5	12.9	7.64
Black Carbon	µg/m <sup>3</sup>	N/A	3.0	2.0	2.5	0.0	1.0	0.5	1.0	3.0	2.0

Pollutant	Unit	Ambient air quality standard	Monitoring Site					
			La Tour Koenig		Cite St Luc		Aapravasi Ghat	
			Minimum	Maximum	Minimum	Maximum	Minimum	Maximum
			Period					
Jul - Sept 2009			Sept - Nov 2009		Nov - Dec 2009			
Sulphur Dioxide	ppb	122 (1 hour)	1.0	143.3	2.0	37.0	1.1	10.7
		70 (24 hours)	0.1	50.0	0.6	73.0	3.0	7.0
Nitrogen Dioxide	ppb	98 (24 hours)	2.5	8.0	0.0	3.0	4.5	11
Carbon Monoxide	ppm	20 (1 hour)	0.04	2.0	0.33	2.1	0.3	2.1
		8 (8 hours)	0.04	1.5	0.35	1.62	1.28	1.9

Source: Ministry of Environment and Sustainable Development .

1: PM 10 stands for Particulate Matter of Size less or equal to 10 microns

2: PM 2.5 stands for Particulate Matter of Size less or equal to 10 microns. PM 2.5 (24-hour average) not prescribed in Mauritian Ambient Air Quality Standard. However, World Health Organization (WHO) standards recommends a limit of 25 ug/m3 for parameter PM 2.5

ppb stands for Parts Per Billion

ppm stands for Parts Per Million

N/A: Not Available

**Table 13 - Total emissions and removals of greenhouse gases and other related gases, Republic of Mauritius, 2007 - 2009**

Gg or thousand tonne

Greenhouse gas	2007		2008		2009 <sup>1</sup>	
	Quantity	%	Quantity	%	Quantity	%
<b>Emissions</b>						
Carbon Dioxide	3,449.6		3,487.1		3,367.6	
Methane	12.6		37.3		21.3	
Oxides of Nitrogen	16.6		18.1		17.5	
Nitrous Oxide	1.3		1.1		1.0	
Carbon Monoxide	65.4		66.6		64.0	
NMVOC <sup>2</sup>	17.1		16.5		17.6	
Sulphur Dioxide	35.1		33.2		33.6	
<b>Removals</b>						
Carbon Dioxide	224.0		300.0		293.0	
<b>Net emissions</b>						
Carbon Dioxide	3,225.6		3,187.1		3,074.6	

<sup>1</sup> Provisional

<sup>2</sup> Non-methane volatile organic compound

**Table 14 - Sectoral carbon dioxide emissions from fuel combustion activities, Republic of Mauritius, 2007 - 2009**

Gg or thousand tonne

Sector	2007		2008		2009 <sup>1</sup>	
	Quantity	%	Quantity	%	Quantity	%
Energy industries (electricity)	2,067.9	60.0	2,032.0	58.3	1,997.0	59.3
Manufacturing industries	400.3	11.6	456	13.1	351.6	10.4
Transport	800.1	23.2	813.0	23.3	844.8	25.1
Residential	130.6	3.8	131	3.8	122.8	3.6
Other <sup>2</sup>	49.3	1.4	53.8	1.5	49.1	1.5
		0.0		0.0		
<b>Total</b>	<b>3448.2</b>	<b>100.0</b>	<b>3,485.8</b>	<b>100.0</b>	<b>3,365.3</b>	<b>100.0</b>

<sup>1</sup> Provisional

<sup>2</sup> includes Agriculture and Trade

Note: The inventory compilation is under revision.

**Table 15 - National inventory of greenhouse gases by source categories, Republic of Mauritius, 2008 - 2009<sup>1</sup>**

Category	Carbon dioxide(CO <sub>2</sub> )				Methane		Nitrous oxide		Oxides of nitrogen (NO <sub>x</sub> )		Carbon monoxide		NMVOC <sup>2</sup>		Sulphur dioxide	
	Emissions		Removals		(CH <sub>4</sub> )		(N <sub>2</sub> O)		nitrogen (NO <sub>x</sub> )		(CO)				(SO <sub>2</sub> )	
	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009
1. Energy	3,485.8	3,365.3	-	-	0.5	0.4	0.0	0.0	18.1	17.5	66.6	64.0	8.7	8.2	33.2	33.6
Fuel combustion activities																
(a) Energy industries (electricity)	2,032.0	1,997.0	-	-	0.3	0.3	0.0	0.0	8.6	8.5	8.2	7.9	0.2	0.1	27.0	27.7
(b) Manufacturing industries	456.0	351.6	-	-	0.1	0.1	0.0	0.0	0.1	1.2	14.2	13.9	0.2	0.1	5.2	4.9
(c) Transport	813.0	844.8	-	-	0.1	0.0	-	0.0	8.0	7.4	43.0	41.2	8.1	7.9	0.9	0.8
(d) Other sectors	184.8	171.9	-	-	-	-	-	0.0	1.4	0.4	1.2	1.0	0.2	0.1	0.1	0.2
2. Industrial processes	1.3	2.3	-	-	-	-	-	-	-	-	-	-	7.8	9.4	-	-
3. Solvent and other product use	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4. Agriculture	-	-	-	-	1.2	0.9	1.1	1.0	-	-	-	-	-	-	-	-
5. Land use change and forestry	-	-	300.0	293.0	-	-	-	-	-	-	-	-	-	-	-	-
6. Waste	-	-	-	-	35.6	21.3	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>3,487.1</b>	<b>3,367.6</b>	<b>300.0</b>	<b>293.0</b>	<b>37.3</b>	<b>21.3</b>	<b>1.1</b>	<b>1.0</b>	<b>18.1</b>	<b>17.5</b>	<b>66.6</b>	<b>64.0</b>	<b>16.5</b>	<b>17.6</b>	<b>33.2</b>	<b>33.6</b>

<sup>1</sup> Provisional

<sup>2</sup> Non - methane volatile organic compound

Note: The inventory compilation is under revision.

**Table 16 - Water balance <sup>1</sup>, Island of Mauritius, 2004 - 2009**

Mm<sup>3</sup>

	2004	2005	2006	2007	2008	2009
Rainfall	4,233	4,424	3,571	3,644	4,440	4,470
<i>Surface runoff</i>	<i>2,540</i>	<i>2,654</i>	<i>2,143</i>	<i>2,186</i>	<i>2,664</i>	<i>2,682</i>
<i>Evapotranspiration</i>	<i>1,270</i>	<i>1,327</i>	<i>1,071</i>	<i>1,093</i>	<i>1,332</i>	<i>1,341</i>
<i>Net recharge to groundwater</i>	<i>423</i>	<i>442</i>	<i>357</i>	<i>364</i>	<i>444</i>	<i>447</i>

Source: Water Resources Unit of the Ministry of Energy and Public Utilities.

<sup>1</sup> Estimates

**Table 17 - Water Utilisation, Island of Mauritius, 2009**

Mm<sup>3</sup>

Use	Surface water		Ground water	Total
	River-run offtakes	Storage		
Domestic, Industrial and Tourism	36 <sup>1</sup>	76	111	223
Industrial ( private boreholes )	5	-	5	10
Agricultural (irrigation)	320	74 <sup>2</sup>	5	399
Hydropower	199	169 <sup>3</sup>	-	368
<b>Total</b>	<b>560</b>	<b>319</b>	<b>121</b>	<b>1,000</b>

Source: Water Resources Unit of the Ministry of Energy and Public Utilities.

<sup>1</sup> includes 36 Mm<sup>3</sup> for Reduit hydropower station

<sup>2</sup> includes 34 Mm<sup>3</sup> for Tamarind Falls & Magenta hydropower station

<sup>3</sup> includes 14 Mm<sup>3</sup> used twice for Le Val & Ferney hydropower stations and 17 Mm<sup>3</sup> for Tamarind Falls & Magenta

**Table 18 - Solid waste landfilled at Mare Chicose by source of waste material  
Island of Mauritius, 2007 - 2009**

Waste material	2007	2008	2009 <sup>1</sup>
Domestic	365,824	373,860	389,999
Construction	502	2,065	671
Other <sup>2</sup>	27,792	23,563	25,278
<b>Total</b>	<b>394,118</b>	<b>399,488</b>	<b>415,948</b>

Source: Ministry of Local Government and Outer Islands

<sup>1</sup> Provisional

<sup>2</sup> Includes mainly industrial waste.

Note: Up to 2006, the period covered was October the previous year to September the current year

**Table 19 - Number of complaints received at the Pollution Prevention and Control Division  
and Police De L' Environnement by category, Island of Mauritius, 2007 - 2009**

Category	2007	2008	2009
Noise	135	157	123
Solid waste	88	49	136
Air pollution	62	57	57
Waste water	76	84	72
Animal husbandry	-	-	-
Odour	88	102	88
Other	119	147	46
<b>Total</b>	<b>568</b>	<b>596</b>	<b>522</b>

Source: Department of Environment of the Ministry of Environment and Sustainable Development

<sup>1</sup> Provisional

**Table 20 - Number of EIA and PER licences granted by type of project, Island of Mauritius, 2006 - 2009**

Project	EIA				PER <sup>2</sup>	
	2006	2007	2008	2009	2008	2009 <sup>1</sup>
Land parcelling (morcellement)	9	3	12	2	-	-
Poultry rearing	-	18	-	-	10	9
Industrial development	4	11	-	7	16	6
Coastal hotels & related works	20	-	8	7	-	-
Livestock rearing	-	10	-	-	-	-
Housing	13	-	-	1	-	-
Stone crushing plants	1	-	-	-	-	-
Development in port area	1	-	-	-	-	-
Service ("filling") station	-	-	-	-	-	-
Other	7	13	24	6	14	16
<b>Total</b>	<b>55</b>	<b>55</b>	<b>44</b>	<b>23</b>	<b>40</b>	<b>31</b>

Source: Department of Environment of the Ministry of Environment and Sustainable Development

<sup>1</sup> Provisional

<sup>2</sup> PER licence was issued as from September 2002.

**Table 21 - Environmental Performance Index (EPI) for Mauritius, 2008 and 2010<sup>1</sup>**

	2008	2010
<b>EPI Rank (out of 149 Countries in 2008 and 163 Countries in 2010)</b>	<b>58.0</b>	<b>6.0</b>
<b>EPI Score (1%)</b>	<b>78.1</b>	<b>80.6</b>
<i>Of which</i>		
<b>Environmental Health</b>	<b>97.7</b>	<b>83.7</b>
Water (effects on humans)	96.5	96.6
Air Pollution (effects on humans)	97.9	97.4
Environmental Burden of Disease	98.2	70.3
<b>Ecosystem Vitality</b>	<b>58.5</b>	<b>77.5</b>
Forestry	87.4	86.5
Fisheries	99.5	99.5
Agriculture	-	93.0
Climate Change	53.5	72.9
Air Pollution (effects on ecosystem)	94.4	43.7
Water (effects on ecosystem)	64.7	74.4
Biodiversity & Habitat	21.9	45.0

<sup>1</sup> Source: Yale Center for Environmental Law and Policy (YCELP) and Center for International Earth Science Information Network (CIESIN), Columbia University, with the World Economic Forum, and Joint Research Centre (JRC) of the European Commission (2010). 2010 Environmental Performance Index. Downloaded from <http://epi.yale.edu> (last accessed 07/26/2010)