

# Environment-Economic Accounts, 2002 – 2009

## Summary

### 1. Energy use and Atmospheric Emissions Accounts

#### Changes from 2002 to 2009

- Energy intensity of the economy decreased from 1.04 to 0.87 toe<sup>1</sup> of energy used per Rs 100,000 of GDP generated.
- Main changes in Energy Use against Gross Value Added (GVA)

Industrial Activity	% changes from 2002 to 2009	
	Energy Use	GVA
Agriculture	-20	+16
Food and drinks manufacturing	-7	+51
Construction	-44	+58
Wholesale and retail trade	-2	+37
Hotels and Restaur.	-39	+33
Chemicals Manufacturing	+24	+3
Transport and com.	+18	+58

- Energy used<sup>2</sup> by households increased by 33% from 291 to 388 ktoe
- Main changes in carbon dioxide (CO<sub>2</sub>) emissions against GVA

Industrial Activity	% changes from 2002 to 2009	
	CO <sub>2</sub> emissions	GVA
Agriculture	-11	+16
Construction	-44	+58
Hotels and Restaur.	-31	+33
Chemical Manuf.	+35	+3

<sup>1</sup> Toe: tonnes of oil equivalent; GDP is at constant 1999 prices.

<sup>2</sup> Including electricity used re-allocated from electricity producers to other energy users

### 2. Water Use Accounts

- High water intensive sectors were 'Agriculture' and 'Production of electricity' for hydro power, consuming more than 75% of total water supplied.
- Low water intensive sectors were 'Transport and communications', 'Construction' and 'Wholesale and Retail' consuming less than 1% of total water used.
- Water use intensity dropped during 2002-2007
  - 'Agriculture' by 28%
  - 'Production of electricity' by 19%
  - 'Food and drinks' by 52%
  - 'Textiles' by 15%
- Water productivity was highest in 'Construction' and 'Wholesale and Retail Trade', with over 20,000 million rupees of GVA produced per million metre cube of water used in 2007.
- Water productivity was lowest in 'Production of electricity' sector with less than 9 million rupees of GVA generated per metre cube of water used in 2007.

### 3. Material Flow Accounts (MFA)

- **Domestic extraction** (DE) of biomass and materials from the Mauritius environment totalled some 10.9 million tonnes in 2009, of which 43% were sugar cane and 55% were aggregates (rocks).
- DE was about 10% higher than in 2005.
- Domestic Material Consumption (DMC) was 13.5 million tonnes in 2009, up 9% from 2005.

## Environment-Economic Accounts, 2002 - 2009

### 1. Introduction

This issue of the Economic and Social Indicators presents Environment-Economic Accounts for Mauritius during the period 2002 to 2009.

The **Environment-Economic Accounts (EEA)** is a set of statistical accounts showing the interaction between the economy and the environment. Integrating these two permits investigation and analysis of sustainability in the patterns of production and consumption and the economic consequences of maintaining given environmental standards.

The set of Accounts in the EEA covers 'Energy Use and Atmospheric Emissions' for the period 2002 to 2009, 'Water Use' for years 2002 and 2007 and 'Economy-wide Material Flow Accounts (MFA)' covering period 2005 to 2009. These accounts have been compiled using the results of the 2002 and 2007 Census of Economic Activities (CEA) and the National Accounts' Supply and Use Tables (SUT) as well as other available statistics on Energy and Water. The main results<sup>3</sup> of the EEA are presented in section 3.

### 2. The Economy and the Environment

Table 1 shows some main environment indicators for the period 2002 and 2009. The Per Capita Primary Energy Requirement increased from 0.9 tonnes of oil equivalent (*toe*) in year 2002 to 1.1 *toe* in 2009 (+22 %). The per capita carbon dioxide (CO<sub>2</sub>) emissions rose by 23% from 2.2 tonnes in 2002 to 2.7 tonnes in 2009. The daily per capita domestic water consumption went up

by 3.2% from 157 litres in 2002 to 162 litres in 2009.

Table 2 provides some key socio-economic indicators showing the structural changes that have occurred during the period 2002 to 2009. Gross Domestic Product (GDP) at current basic prices, increased in nominal terms by about 94%, from Rs 145,055 million in 2002 to Rs 282,003 million in 2009. The share of agriculture in GDP fell from 5.9% in 2002 to 3.9% in 2009, that of manufacturing dropped from 21.6% to 18.8%, and that of transport and communications, from 13.2% to 9.6%.

On the other hand the share of construction sector in GDP increased from 5.4% to 7.0%, the hotels and restaurants from 6.6% to 6.7% and the financial services from 8.4% to 10.2%. This indicates a further shift from the primary and secondary sectors to the tertiary sector.

During the same period, the population of the Republic of Mauritius increased by 4.9% from 1,210,000 to 1,275,034 and population density from 618 to 649 per km<sup>2</sup>, while tourism kept on growing with tourist arrivals increasing from 682,000 to 871,000 (+28%).

Labour force went up by 8.6% from 540,900 to 587,300 with employment rising by 11.4% from around 490,000 to 546,000. The shift from the primary and secondary sectors to the tertiary sector was evident by the decrease in the share of employment in the agricultural and manufacturing sectors. Around 8% of total employees were engaged in the agricultural sector, down from 10% as compared to year 2002, while the contribution in employment in the manufacturing sector dropped from 29% in 2002 to 21% in 2009.

<sup>3</sup> Data are provisional and may be subject to revision in future issues.

### 3. Environment-Economic Accounts (EEA)

#### 3.1 Uses of EEA

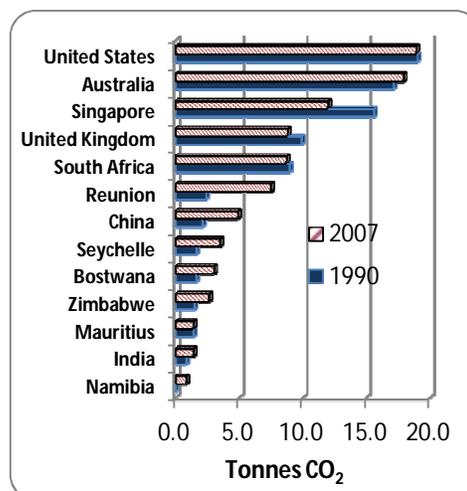
The impact of economic activities on the environment is generally a function of total population, per capita consumption, waste generation and the type of technologies used<sup>4</sup>. The case for Mauritius may also include the effects of tourism, consumption behaviour, as well as scale of productions of goods and services. The EEA shows how economic activities impact on the environment through consumption of resources such as energy, water and materials used in production. For instance, consumption of energy results in atmospheric emissions while water use may cause water shortages and generation of waste water and water pollutants. The EEA therefore shows the Environment-Economic relationship by relating environmental pressures in physical terms to economic drivers expressed in monetary terms. It facilitates a more in-depth analysis of environmental concerns, since the different modules are broken down by sectors of the economy. The main findings are given below.

#### 3.2 Energy Use and Atmospheric Emissions Accounts

This set of account depicts the impact of energy use on the environment. Energy use has the direct consequence of causing atmospheric emissions and global warming. The carbon dioxide emissions per capita are commonly used to compare countries to assess the level of impacts of economic activities. Mauritius has a relatively lower annual per capita CO<sub>2</sub> emissions, of about 3 tonnes, as compared to many other countries

which emit above 5 tonnes, as shown in figure 1 below<sup>5</sup>.

**Figure 1 - Total per capita emissions of CO<sub>2</sub> for selected countries, 1990 and 2007**



##### 3.2.1. Energy policy and energy efficiency

The Energy Policy report for Mauritius sets out ambitious targets. It aims at over 50% reduction in greenhouse gas emissions within the next 50 years, with a 30% reduction in 25 years.

The energy intensity of the economy shows that for every Rs 100,000 of GDP that was produced, 0.87 toe energy was used in 2009 as compared to 1.04 toe in 2002. This indicates an improvement in the energy efficiency (Table 1).

As greenhouse gas emissions in Mauritius is mainly accounted for by the amount of energy used, improvements in energy efficiency in economic activities will help to reduce environmental pressures, in particular in 'Textiles', 'Food and Drinks', and 'Transport and communications' sectors which are the most energy intensive (Table 5).

<sup>4</sup> Statistics New Zealand (2010), Environmental Accounts, Energy, Economy and Emissions 1997 to 2003

<sup>5</sup> Source: Adapted from UN millennium Development Goal Indicators, 2010.

Energy efficiency of a sector is assessed by comparing the change in the amount of energy used by the sector to the change in its Gross Value Added (GVA) during the same period.

As shown in Table A, between 2002 and 2009, the activity groups where the energy use has decreased, as opposed to their increase in GVA, are: 'Agriculture', 'Food and Drink Manufacturing', 'Construction', 'Wholesale and Retail' and 'Hotels and Restaurants'.

**Table A – Primary energy use and GVA changes, 2002 - 2009**

Industrial Activity	% changes from 2002 to 2009	
	Energy Use	GVA
Agriculture	-20	+16
Food and drinks manufacturing	-7	+51
Construction	-44	+58
Wholesale and retail trade	-2	+37
Hotels and Restaurants	-39	+33
Chemicals Manufacturing	+24	+3
Transport and communications	+18	+58

On the other hand, there were increases in energy use coupled with increases in GVA, in 'Chemicals Manufacturing' and 'Transport and communications' sectors.

It is important to also note that Primary energy use by the 'Manufacturing' sector has increased by 7% over the period 2002 to 2009, compared with an increase in GVA of 12%. 'Financial Services' followed the same trend with an increase of 89% in energy

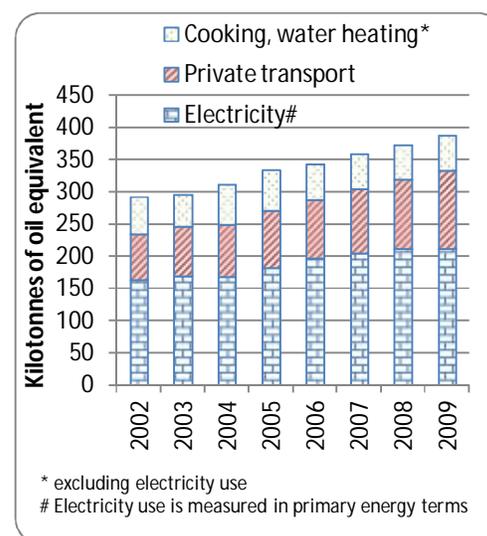
use as compared to an increase of 64% in GVA during the same period.

### 3.2.2 Energy use of households

Households consume energy mostly by making use of electricity for lighting and powering household appliances, gasoline and diesel for private transport and LPG and solar energy for cooking and water heating respectively.

Energy used by households has increased by 33% from 291 ktoe in 2002 to 388 ktoe in 2009 (Fig. 2 and Table 6). This was mainly driven by the demand for electricity which increased by around 30% and energy used for private transport which rose by 70%. On the other hand energy other than electricity used for cooking and water heating decreased by 4.2% during the same period.

**Figure 2–Household Energy Use, 2002–2009**



### 3.2.3 Carbon dioxide emissions Accounts

Greenhouse gases (GHGs) mainly comprise Carbon dioxide (CO<sub>2</sub>), nitrous oxide (N<sub>2</sub>O) and methane (CH<sub>4</sub>). CO<sub>2</sub> is a major component of GHG emissions in Mauritius.

Table B shows the changes in CO<sub>2</sub> emissions from energy sources of some selected sectors compared to changes in the

GVA. Between 2002 and 2009, the sectors where the CO<sub>2</sub> emissions have decreased, as opposed to their increase in GVA, are 'Agriculture', 'Construction' and 'Hotels and Restaurants'. Also, there were increases in CO<sub>2</sub> emissions coupled with increasing GVA, in the 'Food and drinks manufacturing', 'Wholesale and retail trade', 'Chemicals Manufacturing', 'Transport and communications' and 'Finance and real estate' sectors.

**Table B – CO<sub>2</sub> emissions and GVA changes, 2002 - 2009**

Industrial Activity	% changes from 2002 to 2009	
	CO <sub>2</sub> emissions	GVA
Agriculture	-11	+16
Mining and quarrying	-55	-41
Food and drinks manufacturing	+60	+51
Textiles	-5	-8
Construction	-44	+58
Wholesale and retail trade	+3	+37
Hotels and Restaurants	-31	+33
Chemicals Manufacturing	+35	+3
Transport and communication	+18	+58
Finance and real estate	+112	+64

The sectors with the most prominent changes noted both in the CO<sub>2</sub> emissions and the GVA were the 'Finance and Real Estate' (CO<sub>2</sub> +112%, GVA +64%), 'Construction' (CO<sub>2</sub> -44%, GVA +58%), 'Food and Drinks' (CO<sub>2</sub> +60%, GVA +51%) and 'Mining and Quarrying' (CO<sub>2</sub> -55%, GVA -41%).

One of the ways of decreasing CO<sub>2</sub> emissions is to improve the energy efficiency of economic activities, in particular, for the activity groups which emit high amounts of CO<sub>2</sub> in their production processes. The most emission intensive sectors in 2009, in terms of tonnes of CO<sub>2</sub> per hundred thousand rupees of GVA, were the 'Water Supply industry' with 12 tonnes, 'Textiles' with 4.7 tonnes, 'Chemicals' with 4.1 tonnes, 'Transport and Communications' with 3.4 tonnes, and 'Food and Drinks' with 2.8 tonnes (Table 9).

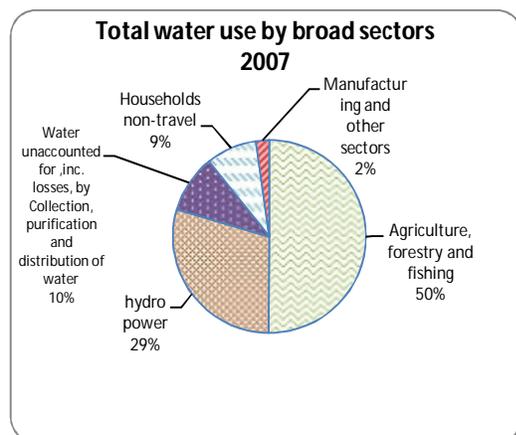
### 3.3 Water Use Accounts

The water use account identifies the amount of water used in the different economic sectors and households and relates this use to the level of economic activity undertaken by the particular sectors. Although the overall use in certain sectors may be relatively small, efficiency in the use of public water for economic activities can still make an important difference to the availability of water to other users and to the continuity of operations during times of water shortages.

#### 3.3.1 Water Use

An analysis of water use by sector reveals that, as might be expected, agriculture is a relatively intensive user. In 2007 out of a total of about 880 million cubic metre of water abstracted, half (50%) was used by the agricultural sector. The hydro power stations used 29% for the production of electricity while households consumed 9% and manufacturing used 2%. The remaining 10% was mainly the water unaccounted for, by the 'collection, purification and distribution of water' sector (Fig. 3).

**Figure 3 – Share of water use<sup>6</sup> by broad sector 2007**



The total amount of water abstracted in 2007 dropped by 9.7% as compared to an amount of 975 million cubic metres recorded in 2002. Table C below, shows the percentage of water used by broad sectors out of the total water abstracted.

**Table C – Share of water used by sectors, 2002 and 2007**

Sectors	% use of total water abstracted	
	2002	2007
Agriculture	54	50
Production of hydro electricity	26	29
Households	7	9
Manufacturing and others	3	2
Water unaccounted for, including losses.	10	10
<b>Total</b>	<b>100</b>	<b>100</b>

Proportion of water used by the agricultural sector decreased from 54% to 50% while that for 'production of hydro

electricity' rose from 26% to 29% Households' use increased from 7% to 9% and Manufacturing and others (excluding agriculture) used a slightly less share of water from 3% to 2%. The remaining amount, mainly the water unaccounted for, including losses from 'collection, purification and distribution of water sector', remained virtually at the same proportion estimated as 10%.

### 3.3.2 Water Intensity

Water use intensity indicates the amount of water in million cubic metres used by a particular sector of the economy per million rupees of Gross Value Added (GVA) generated in that sector. Sectors which are the most water intensive are 'Production of electricity' mainly as hydro power and 'Agriculture'. However, from 2002 to 2007, the water intensity of the 'Agriculture' sector dropped by 25% from 0.08 to 0.06 million cubic metres (Mm<sup>3</sup>) per million rupees of GVA. The same pattern was noted in 'Production of electricity' with a decline of 14% from 0.14 to 0.12.

The relatively low water intensive sectors were, among others, the 'Construction' and 'Wholesale and Retail' sectors with less than 100 million metre cubes per million rupees of GVA (Table 10).

### 3.3.3 Water Productivity

Water productivity measures the GVA generated in a particular sector per unit volume of water used. In 2007, this indicator was highest in 'Construction' and 'Wholesale and Retail' sectors with over Rs 20,000 million of GVA generated per Mm<sup>3</sup> of water used. 'Agriculture' and 'Production of electricity' sectors had the lowest rate with 17 million and 9 million rupees per Mm<sup>3</sup> of water used respectively (Table 10).

<sup>6</sup> Total water, including use for hydropower and from public supply for which the loss is higher. This use differs from utilization already published as it includes both direct abstractions and water from public supply.

### 3.4 Economy-wide Material Flow Accounts (MFA)

The Economy-wide Material Flow Accounts set out the flow of natural materials used or moved by the economic activities of the country. Economy-wide MFA and balances constitute the basis from which a variety of material flow based indicators can be derived.

MFA identify two main types of flows: direct flows are those which are used directly by economic activities within the territory, while indirect flows relate to materials which are moved but not used by the same set of economic activities.

Table 11 presents some of the main indicators of MFA for the years 2005 to 2009.

#### 3.4.1 Domestic extraction

**Domestic extraction** (DE) of biomass and materials from the national environment totalled some 10.9 million tonnes in 2009, which is estimated to be about 10% higher than in 2005 (9.9 million tonnes). About 55% of this amount comprised aggregates (rocks) and another 43% were sugarcane. The remaining 2% were mostly salt products and biomass such as food crops, wood and fish.

#### 3.4.2 Direct Material Input

**Direct Material Input** (DMI) consists of domestic extraction plus imports of quantity of materials in the country. DMI in 2009 was estimated at 14.6 million tonnes, up by 7% as compared to 2005 (13.6 million tonnes). Of this amount, 75% of the materials were extracted from the national environment (Domestic Extraction).

### 3.4.3 Domestic Material Consumption

**Domestic Material Consumption** (DMC) is the indicator which is most used by the international community, as it can be most readily compared with GDP. It is defined as DMI less exports.

In 2009, DMC worked out to 13.5 million tonnes, up by 9% from 12.4 million tonnes in 2005. This was mainly driven by the 7.3% increase in DMI while exports of materials went down by 8% during that period.

#### 3.4.4 Physical Balance of Trade

The **Physical Balance of Trade** (PTB), that is imports less exports of materials, increased slightly from 2.5 to 2.6 million tonnes (+4%) during the period 2005 to 2009.

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Figure 4 - Framework for EEA

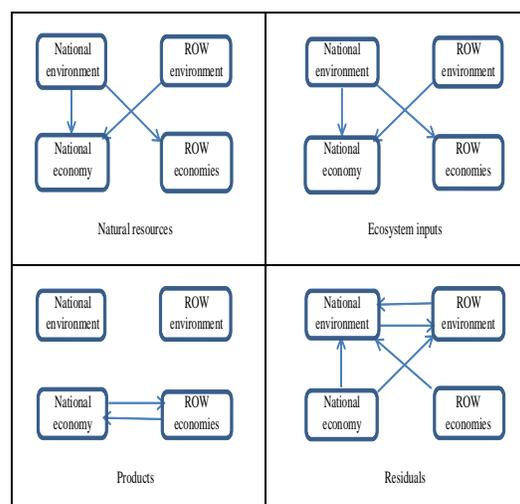
## Technical notes

### Concepts

The Environment-Economic Accounts (EEA) is a set of statistical accounts showing the interaction between the economy and the environment. The EEA can serve as at least a partial framework for measuring sustainable development.

Flows from the national environment to the national economy consist of resources and ecosystem inputs. The national economy emits residuals (wastes) to the national environment and to the environment of other countries (rest of the world – ROW in SNA). In addition the environment receives residuals from other countries' economies and environment.

Flows between the two environments are residuals transported by wind and water. Residuals going from one economy to the other environment relates to economic activity taking place abroad, for example international travel. In addition, products flow between the national economy and the economy of other countries as imports and exports<sup>7</sup>. Figure 4 below shows how the flow of inputs and outputs occur in the economy and the environment.



ROW: Rest Of the World

### Definitions

**The Environment-Economic Accounts (EEA):** a set of statistical accounts showing the interaction between the economy and the environment.

*Atmospheric Emissions accounting:* matrix, which identifies pollutant emissions by economic sector.

*Natural Resource Accounts:* These include data on stocks of natural resources and changes in them caused by either natural processes or human use. Such accounts typically cover agricultural land, fisheries, forests, minerals and petroleum, and water.<sup>8</sup>

### 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 point to, provides information about and/or describes

<sup>7</sup> Handbook of National Accounting – Integrated Environmental and Economic Accounting 2003, United Nations, European Commission International Monetary Fund, Organisation for Economic Co-operation and Development and World Bank

<sup>8</sup> Joy E. Hecht, Environmental Accounting, Where We Are Now, Where We Are Heading

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).

*Energy accounts:* relate the use of energy to the economic activities of the industrial sector which is responsible for the use of the energy.

## 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.

*Primary energy:* untransformed energy sources such as oil and coal.

## Material Flow Accounts

The economy-wide material flow accounting (MFA) provides an aggregate overview, in tonnes, of annual material inputs and outputs of an economy including inputs from the national environment and outputs to the environment and the physical amounts of

imports and exports. Economy-wide MFA and balances constitute the basis from which a variety of material flow based indicators can be derived.

## 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 of the main GHGs 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.

*Carbon dioxide emissions accounts:* link the emissions of carbon dioxide from economic activity to the industrial sectors undertaking that economic activity.

## Water

*Water Use intensity:* provides a measure of the efficiency with which water is being used in production or water used (thousand cubic metres) per unit (e.g Rs 100,000) of GDP (at constant prices).

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

*Water productivity:* The total amount of economic output in terms of GDP per unit of water used in the production.

## ABBREVIATIONS AND SYMBOLS

### Abbreviations

Rs	Rupees
Rs mn	Rupees million
%	Percentage
000	Thousand
Mm <sup>3</sup>	Million cubic metres
ktoe	Thousand tonnes of oil equivalent
Toe	Tonne of oil equivalent
DMC	Direct Material Consumption
DMI	Direct material Inputs
EEA	Environment-Economic Accounts
GVA	Gross Value Added
GDP	Gross Domestic Product
MFA	Material Flow Accounts
PTB	Physical Balance of Trade
SNA	System of National Accounts

### Symbols

-	Nil or negligible
...	Not available

### *Conversion factor*

1 square kilometre = 100 hectares

**Table 1 – Key Environment Indicators, 2002 and 2009**

Indicator	Units	2002	2009
1. Total land area	Km <sup>2</sup>	2,040	2,040
2. Total land area	ha	204,000	204,000
3. Irrigated land	ha	21,222	19,506
4. Total forest area (as a % of total land area)	%	29.3	25.3
5. Land Protected Areas	ha	13,973	14,854
6. Land Protected Areas (as a % of total land area)	%	6.8	7.3
7. Marine Protected Areas (MPA's)	ha	7,190	7,216
8. Marine Protected Areas (MPA's) (as a % of total land area)	%	3.52	3.54
9. Total Protected Areas (as a % of total land area)	%	10.4	10.8
10. Total Carbon dioxide emission	000 tons	2,973	3,762
11. Per capita carbon dioxide emission	tons	2.2	2.7
12. Total Greenhouse Gas (GHG) emission	000 tons	3,239	4,125
13. Per capita GHG emission	tons	2.7	3.2
	Gg CO <sub>2</sub> -eq per		
14. GHG Emissions per GDP	Rs mn	22.3	14.6
15. Mean annual rainfall	millimetres	2,082	2,397
16. Annual fresh water abstraction	Mm <sup>3</sup>	726	632
17. Daily per capita domestic water consumption	litres	157	162
18. Total electricity generated	GWh	1,949	2,577
19. Per capita primary energy requirement	toe	0.95	1.1
20. Per capita final energy consumption	toe	0.6	0.6
	toe per Rs		
21. Energy intensity	100,000 GDP	1.04	0.87

**Table 2 – Key Socio-Economic - Indicators, 2002 and 2009**

Indicator	Units	2002	2009
1. Gross Domestic Product (GDP) at market prices	Rs mn	145,055	282,003
2. Sectoral contribution to GDP			
<i>Agriculture</i>	%	5.9	3.9
<i>Manufacturing</i>	%	21.6	18.8
<i>Construction</i>	%	5.4	7.0
<i>Wholesale and retail trade</i>	%	11.1	11.5
<i>Hotels and restaurants</i>	%	6.6	6.7
<i>Transport and communications</i>	%	13.2	9.6
<i>Financial intermediation and business services</i>	%	8.4	10.2
<i>Other</i>	%	27.8	32.3
3. GDP annual growth rate (basic prices)	%	2.2	3.1
4. Per capita GDP at market prices	Rs	119,833	220,685
5. Per capita GDP in US dollars	US\$	3,999	6,909
6. Investment (GDFCF)	Rs mn	31,075	74,430
7. Exports (f.o.b) (include ship's stores and bunkers)	Rs mn	53,893	61,681
8. Imports (c.i.f)	Rs mn	64,608	118,444
9. Population (mid year)	000	1,210	1,275
10. Population annual growth rate	%	0.9	0.5
11. Population density (per kilometre square)	Number	618	649
12. Total labour force	000	540.9	587.3
13. Total employment	000	490.1	545.8
<i>Agriculture (as a % of total)</i>	%	9.6	8.2
<i>Manufacturing (as a % of total)</i>	%	28.5	21.2
14. Unemployment rate <sup>a</sup>	%	9.7	7.3
15. Inflation rate	%	6.4	2.5
16. Tourist arrivals	000	681.6	871.4

<sup>a</sup> Labour force, employment and unemployment, 16 years and over.

Table 3 - GDP by industry group at constant 1999 prices<sup>9</sup>, 2002 - 2009

	<i>Rs million</i>							
	2002	2003	2004	2005	2006	2007	2008	2009
<b>Agriculture, hunting, forestry and fishing</b>	<b>6,514</b>	<b>6,715</b>	<b>7,351</b>	<b>7,043</b>	<b>7,109</b>	<b>6,727</b>	<b>6,930</b>	<b>7,543</b>
Sugarcane	3,091	3,259	3,652	3,344	3,206	2,751	2,885	3,245
Other	3,434	3,462	3,698	3,720	3,966	4,099	4,163	4,419
<b>Mining and quarrying</b>	<b>81</b>	<b>67</b>	<b>66</b>	<b>61</b>	<b>53</b>	<b>45</b>	<b>55</b>	<b>48</b>
<b>Manufacturing</b>	<b>24,268</b>	<b>24,539</b>	<b>24,693</b>	<b>23,818</b>	<b>25,005</b>	<b>25,601</b>	<b>26,412</b>	<b>27,075</b>
Sugar	741	768	850	772	752	649	673	774
Food exc Sugar	4,749	5,629	5,892	6,055	6,672	6,860	7,386	7,665
Textiles	11,749	11,077	10,336	9,342	9,829	10,805	10,819	10,800
Other	7,039	7,049	7,505	7,514	7,604	7,267	7,437	7,545
<b>Electricity, gas and water supply</b>	<b>1,743</b>	<b>1,903</b>	<b>1,982</b>	<b>2,013</b>	<b>2,013</b>	<b>2,068</b>	<b>2,194</b>	<b>2,196</b>
<b>Construction</b>	<b>6,353</b>	<b>7,196</b>	<b>7,234</b>	<b>6,890</b>	<b>7,301</b>	<b>8,465</b>	<b>9,448</b>	<b>10,029</b>
<b>Wholesale &amp; retail trade; repair of motor vehicles, motorcycles, personal and household goods</b>	<b>12,963</b>	<b>13,216</b>	<b>14,043</b>	<b>15,106</b>	<b>15,970</b>	<b>16,777</b>	<b>17,584</b>	<b>17,772</b>
Wholesale and retail trade	12,367	12,511	13,228	14,161	14,853	15,518	16,207	16,277
Other	596	705	815	946	1,117	1,260	1,377	1,496
<b>Hotels and restaurants</b>	<b>6,990</b>	<b>7,330</b>	<b>7,598</b>	<b>7,936</b>	<b>8,711</b>	<b>9,752</b>	<b>9,875</b>	<b>9,278</b>
<b>Transport, storage and communications</b>	<b>15,188</b>	<b>16,183</b>	<b>17,449</b>	<b>18,749</b>	<b>20,104</b>	<b>21,621</b>	<b>22,933</b>	<b>24,026</b>
<b>Financial intermediation</b>	<b>8,663</b>	<b>10,124</b>	<b>10,054</b>	<b>10,539</b>	<b>11,102</b>	<b>11,949</b>	<b>13,161</b>	<b>13,674</b>
Insurance	2,570	2,698	2,834	2,975	3,124	3,283	3,446	3,584
Banks	5,024	6,185	5,789	5,980	6,219	6,766	7,626	7,854
Other	1,069	1,241	1,432	1,585	1,760	1,900	2,090	2,237
<b>Real estate, renting and business activities</b>	<b>9,706</b>	<b>10,942</b>	<b>11,769</b>	<b>12,321</b>	<b>13,189</b>	<b>14,378</b>	<b>15,633</b>	<b>16,553</b>
Owner occupied dwellings	4,726	5,484	5,681	5,840	5,972	6,078	6,212	6,259
Other	4,978	5,457	6,086	6,479	7,215	8,299	9,420	10,292
<b>Public administration and defence; compulsory social security</b>	<b>7,225</b>	<b>7,682</b>	<b>7,928</b>	<b>8,290</b>	<b>8,609</b>	<b>8,648</b>	<b>8,742</b>	<b>8,827</b>
<b>Education</b>	<b>4,880</b>	<b>5,105</b>	<b>5,383</b>	<b>5,668</b>	<b>5,874</b>	<b>6,011</b>	<b>6,190</b>	<b>6,342</b>
<b>Health and social work Other community, social and personal service activities and private households with employed persons</b>	<b>3,333</b>	<b>3,565</b>	<b>3,823</b>	<b>4,053</b>	<b>4,377</b>	<b>4,622</b>	<b>4,829</b>	<b>5,190</b>
<b>Gross Domestic Product at basic prices</b>	<b>111,542</b>	<b>118,491</b>	<b>123,595</b>	<b>127,007</b>	<b>134,239</b>	<b>141,870</b>	<b>149,631</b>	<b>154,635</b>
<b>Taxes on products (net of subsidies)</b>	<b>12,770</b>	<b>13,187</b>	<b>13,785</b>	<b>12,815</b>	<b>12,386</b>	<b>13,267</b>	<b>14,052</b>	<b>14,417</b>
<b>Gross Domestic Product at market prices</b>	<b>124,312</b>	<b>131,678</b>	<b>137,380</b>	<b>139,822</b>	<b>146,625</b>	<b>155,137</b>	<b>163,683</b>	<b>169,052</b>

<sup>9</sup> Constant values have been worked out using the annual chain link growth. Individual components do not add up to subtotals and totals.

**Table 4 - Primary energy requirement by energy source, Republic of Mauritius, 2002 - 2009**

Energy source	ktoe							
	2002	2003	2004	2005	2006	2007	2008	2009
<b>1. Imported</b>								
a) Petroleum products								
Gasolene	94.5	96.4	97.6	100.1	96.2	106.9	109.5	120.6
Diesel Oil	198.7	210.9	216.0	214.2	230.6	207.4	205.4	206.7
Dual Purpose Kerosene	127.7	147.4	168.8	171.1	152.7	146.0	140.9	117.2
Kerosene	14.4	18.9	26.3	28.6	6.0	2.4	4.0	6.7
Aviation Fuel	113.3	128.6	142.5	143.1	146.7	143.6	136.9	110.5
Fuel Oil	231.4	249.7	259.1	253.3	273.3	251.9	213.3	227.9
LPG	52.5	55.8	59.2	65.7	69.0	68.9	67.9	68.9
<b>Sub total (petroleum products)</b>	<b>704.8</b>	<b>760.2</b>	<b>800.7</b>	<b>805.0</b>	<b>821.8</b>	<b>781.0</b>	<b>737.0</b>	<b>741.2</b>
b) Coal	193.9	196.0	179.4	225.6	300.4	355.0	403.9	369.3
<b>Sub total (Imported)</b>	<b>898.8</b>	<b>956.3</b>	<b>980.1</b>	<b>1,030.5</b>	<b>1,122.1</b>	<b>1,136.0</b>	<b>1,140.9</b>	<b>1,110.6</b>
<b>2. Local (Renewables)</b>								
Hydro and Wind	7.4	10.1	10.6	9.9	6.6	7.2	9.3	10.7
Bagasse *	243.9	249.1	257.8	245.1	240.0	230.5	246.4	218.0
Fuelwood *	7.3	7.3	7.3	7.6	8.0	8.0	7.7	7.7
<b>Sub total Local (renewables)</b>	<b>258.6</b>	<b>266.5</b>	<b>275.7</b>	<b>262.6</b>	<b>254.6</b>	<b>245.8</b>	<b>263.5</b>	<b>236.3</b>
<b>3. Total</b>	<b>1157.3</b>	<b>1222.8</b>	<b>1255.8</b>	<b>1293.2</b>	<b>1376.8</b>	<b>1381.8</b>	<b>1,404.4</b>	<b>1,346.9</b>

**Table 5. Energy Use Accounts<sup>10</sup> by selected industry groups, 2002 - 2009**

	Ktoe							
	2002	2003	2004	2005	2006	2007	2008	2009
<b>TOTAL ALL SECTORS</b>	<b>1157</b>	<b>1223</b>	<b>1256</b>	<b>1293</b>	<b>1377</b>	<b>1382</b>	<b>1404</b>	<b>1347</b>
<i>Of which</i>								
Agriculture	10.86	10.43	9.06	10.47	11.43	11.44	10.64	8.671
Mining and Quarrying	0.334	0.310	0.27	0.25	0.27	0.22	0.20	0.14
Food and Drink	126.6	141.0	143.5	140.1	148.6	140.8	121.5	117.4
Textiles	191.0	188.0	174.9	170.5	186.9	183.4	196.7	171.5
Chemicals	13.21	13.44	13.23	13.58	15.57	16.06	16.84	16.39
Water supply	16.14	17.37	17.08	18.64	20.25	20.39	21.51	20.35
Construction	50.01	52.06	47.45	41.38	40.63	36.55	33.59	27.95
Wholesale and Retail	55.05	54.16	53.31	56.28	59.49	57.14	58.16	53.75
Hotels and Restaurants	53.13	50.38	44.81	45.62	44.14	43.29	40.74	32.20
Transport and communications	232.6	256.6	277.13	287.8	305.5	297.5	296.9	274.1
Finance and real estate	16.35	18.06	18.86	21.64	24.62	26.76	30.44	30.91

<sup>10</sup> includes primary energy, used to produce electricity, allocated out to the final electricity consumer.

**Table 6. Energy used<sup>11</sup> by households, 2002 - 2009**

	<i>ktoe</i>							
	2002	2003	2004	2005	2006	2007	2008	2009
Electricity	162.9	169.6	164.8	181.8	196.2	204.5	211.5	211.2
Private transport	71.6	76.3	81.5	88.0	90.5	99.4	107.0	121.7
Cooking and water heating*	57.0	49.5	61.6	63.2	56.3	54.3	54.1	54.6
<b>Total</b>	<b>291.5</b>	<b>295.4</b>	<b>307.9</b>	<b>333.0</b>	<b>342.9</b>	<b>358.2</b>	<b>372.6</b>	<b>387.6</b>

\*Excluding electricity use

**Table 7. Energy Use Intensity Accounts<sup>11</sup> by selected industry groups, 2002 – 2009**

	<i>Ktoe/Rs million</i>							
	2002	2003	2004	2005	2006	2007	2008	2009
Agriculture	1.08	0.99	0.79	0.94	1.00	1.03	0.95	0.70
Mining and Quarrying	3.37	3.19	2.92	2.86	2.97	2.76	2.49	2.05
Food and Drink	13.83	14.35	13.67	13.20	12.71	11.14	9.37	8.96
Textiles	10.04	10.32	10.10	10.80	11.96	12.09	12.64	10.90
Chemicals	7.60	7.89	7.99	8.75	9.86	10.17	10.41	10.03
Construction	4.88	4.55	4.08	3.67	3.38	2.60	2.16	1.69
Wholesale and Retail	2.68	2.58	2.41	2.36	2.35	2.14	2.07	1.89
Hotels and Restaurants	3.58	3.29	2.91	2.76	2.58	2.22	1.96	1.64
Transport and communications	9.25	10.22	10.99	11.43	12.26	12.14	11.39	10.01
Finance and real estate	0.70	0.69	0.68	0.71	0.74	0.74	0.75	0.74

**Table 8 – Carbon dioxide (CO<sub>2</sub>) Emissions Accounts by selected industry groups, 2002-2009**

	<i>Thousand metric tones</i>							
	2002	2003	2004	2005	2006	2007	2008	2009
<b>TOTAL ALL SECTORS</b>	2973.2	3125.3	3203.4	3392.8	3738.8	3822.5	3880.3	3761.6
<b>Of which</b>								
Agriculture	27.60	26.96	23.94	27.84	31.90	32.60	29.31	24.51
Mining and Quarrying	0.90	0.83	0.74	0.68	0.78	0.64	0.56	0.40
Food and Drink	144.76	156.87	162.63	173.36	212.53	227.92	234.24	232.02
Textiles	532.50	529.81	494.49	484.78	550.63	546.52	583.56	505.36
Chemicals	35.09	36.03	35.90	37.28	44.82	47.00	47.68	47.28
Water supply	38.96	42.83	42.94	47.72	55.38	57.05	57.71	56.03
Construction	148.77	155.06	141.56	123.35	122.15	109.99	99.98	83.22
Wholesale and Retail	146.92	145.64	144.53	153.14	168.20	163.41	160.65	151.2
Hotels and Restaurants	131.79	127.11	115.00	118.93	122.12	122.58	111.0	90.25
Transport and communications	689.35	760.03	821.18	851.92	907.75	884.27	876.18	811.33
Finance and real estate	40.54	45.63	48.47	56.42	67.94	75.39	81.52	85.93

<sup>11</sup> includes primary energy, used to produce electricity, allocated out to the final energy consumer.

**Table 9 – Carbon dioxide (CO<sub>2</sub>) Emissions Intensity Accounts by industry groups, 2002-2009**

	<i>Tonnes/Rs 100,000</i>							
	2002	2003	2004	2005	2006	2007	2008	2009
Agriculture	0.42	0.40	0.33	0.40	0.45	0.48	0.42	0.32
Mining and Quarrying	1.11	1.25	1.11	1.12	1.47	1.42	1.02	0.84
Food and Drink	2.68	2.52	2.47	2.61	2.96	3.14	3.01	2.85
Textiles	4.53	4.78	4.78	5.19	5.60	5.06	5.39	4.68
Chemicals	3.16	2.75	3.35	4.44	5.40	4.79	4.45	4.15
Water Supply	9.10	9.71	9.78	10.42	11.91	12.40	12.80	12.26
Construction	2.34	2.15	1.96	1.79	1.67	1.30	1.06	0.83
Wholesale and Retail	1.13	1.10	1.03	1.01	1.05	0.97	0.91	0.85
Hotels and Restaurants	1.89	1.73	1.51	1.5	1.4	1.26	1.12	0.97
Transport and communications	4.54	4.7	4.71	4.54	4.52	4.09	3.82	3.38
Finance and real estate	0.22	0.22	0.22	0.25	0.28	0.29	0.28	0.29

**Table 10. Indicators of Water Accounts by selected industrial groups, 2002 and 2007**

	Water Use (Mm <sup>3</sup> )		Water Intensity (Mm <sup>3</sup> /Rs million)		Water productivity (Rs million/Mm <sup>3</sup> )	
	2002	2007	2002	2007	2002	2007
Agriculture	524.13	434.02	0.0805	0.0575	12.43	17.38
Food and drink	11.82	8.54	0.0022	0.0010	456.4	953.28
Textiles	6.38	4.97	0.0005	0.0005	1,841.54	2,173.0
Hydro power	249.05	254.38	0.1429	0.1158	7.0	8.63
Construction	0.41	0.44	0.0001	-	15,495.1	22,793.2
Wholesale and retail	1.70	0.87	-	-	7,625.3	20,427.6
Hotels and Restaurants	4.03	5.79	0.0006	0.0006	1,734.5	1,602.4
Transport and communications	0.55	1.28	-	0.0001	27,614.6	18,770.3
Others	8.08	12.33	...	...	...	...
Households	67.62	73.01	...	...	...	...
Water unaccounted for, inc. losses	101.23	84.36	...	...	...	...
Total	975.00	879.99	0.009	0.006	114.4	175.7

**Table 11. Economy-Wide Material Flow Accounts (MFA), 2005 - 2009**

	<i>Million tonnes</i>				
	2005	2006	2007	2008	2009
Domestic extraction (DE)	9.9	10.0	10.2	10.9	10.9
Direct Material Input (DMI)	13.6	13.8	14.2	15.0	14.6
Domestic Material Consumption (DMC)	12.4	12.6	13.1	13.8	13.5
Physical Balance of Trade (PTB)	2.5	2.5	2.9	2.9	2.6
<b>Domestic extraction</b>	9.9	10.0	10.2	10.9	10.9
Biomass	5.1	4.9	4.4	4.7	4.9
<i>Of which sugarcane</i>	4.9	4.7	4.2	4.5	4.7
Minerals	4.8	5.1	5.8	6.2	6.0
<i>Of which aggregates (rocks)</i>	4.7	4.9	5.7	6.1	5.9
<b>Imports</b>	3.7	3.8	4.0	4.1	3.7
Biomass	0.9	0.9	0.9	0.9	0.9
Other materials	1.3	1.3	1.3	1.5	1.3
Energy carriers	1.5	1.6	1.8	1.7	1.6
<b>Exports</b>	1.2	1.2	1.1	1.2	1.1
Biomass	0.8	0.8	0.7	0.7	0.7
Other materials	0.4	0.4	0.4	0.5	0.4