

Environment Statistics - 2004

Introduction

This is the fourth issue of the 'Economic and Social Indicator' on environment statistics that have been compiled by the Central Statistics Office jointly with the Department of Environment of the Ministry of Environment and National Development Unit. Information have been gathered from various institutions and thus some of the data may already appear in other publications. In most of the tables data relate to the Republic of Mauritius, unless otherwise specified.

1. The economy

Table 2 provides some key socio-economic indicators showing the structural changes that have occurred during the last decade.

From 1995 to 2004, Gross Domestic Product (GDP), which measures the total value of production, has increased in nominal terms by about 148%, from Rs 70,283 million to Rs 174,468 million. The share of agriculture in GDP fell from 10.3% in 1995 to 6.2% in 2004, that of manufacturing has decreased marginally from 22.9% to 21.0%, while that of financial and business services increased from 15.4% to 19.3%.

During the same period, the population increased by 10.9% from 1,112,400 to 1,233,400 and the population density from 554 to 607 per km².

2. Land use, Forestry and Agriculture

2.1 Land use

Detailed data on land use are available for 1995. The proportion of land under agriculture was 46.4%, and that of forestry, 30.6% whilst built-up areas constituted 19.5% (Table 3).

2.2 Forestry

Preservation of forests is vital for the protection of the ecosystem. Table 4 shows the forest area by category for the island of Mauritius. In 2004 the total forest area was 47,066 hectares, of which 22,066 hectares (47%) were state-owned and the remaining 25,000 hectares (53%) were privately-owned.

2.3 Agriculture

From 2003 to 2004, the effective area under sugarcane has shrunk by 3,332 hectares (-4.5%), to 70,785 hectares. During the same period area under tea plantation dropped to 674 hectares (-1%) from 681 hectares and area under tobacco fell to 356 hectares (-6%) from 379 hectares (Table 5).

2.3.1 Fertiliser and other inputs

The total quantity of fertilisers consumed and its breakdown by main nutrient components are shown in Table 6. The consumption of fertilisers for the year 2004 was 61,266 tonnes, a decrease of 3.5% over the 2003 figure of 63,507 (Table 6).

The major nutrients in these inputs are nitrogen (N), phosphorous (P) as phosphate and potassium (K) as potash. In 2004 those nutrients were distributed in the following proportions of the product weight: nitrogen 39.2 %, phosphate 15.0 % and potash 45.8 %.

3. Energy

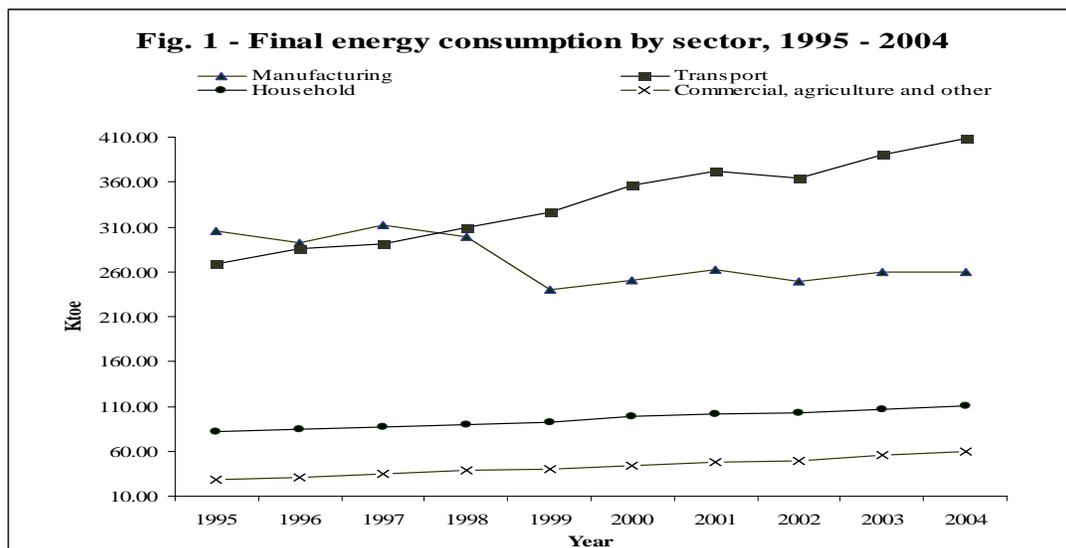
The production and consumption of energy causes air pollution, and alters the ambient temperature. They are by far the most important contributors of air pollutants through the emission of carbon dioxide and other greenhouse gases.

3.1 Primary energy requirements

The total primary energy requirement of the country increased by 2.7% from 1,223 ktoe in 2003 to 1,256 ktoe in 2004. Around 78% of the total primary energy requirement was met by imported fuels (oil, LPG and coal) and the remaining 22%, obtained from local sources (bagasse and hydro) (Table 7).

3.2 Final energy consumption

Final energy consumption increased by 2.8% from 815 ktoe in 2003 to 838 ktoe in 2004. The largest consumers were the transport and manufacturing sectors which accounted for 49% and 31% of the total consumption respectively in 2004 (Table 8). It is interesting to note that the manufacturing sector only started consuming lesser energy than the transport sector as from 1998 (Fig 1).



3.3 Inputs for electricity production

Different types of fuel are used for electricity production. Fuel oil is the most important input with its share rising from 35% in 2003 to 37% in 2004. On the other hand the contribution of coal fell from 32% to 29% (Table 9).

4. Transport

4.1 Stock of registered motor vehicles and fuel used for transport

The number of registered motor vehicles has gone up from 276,371 in 2003 to 291,605 in 2004, a rise of 5.5%. This expansion has been accompanied by a corresponding growth in energy consumption and carbon dioxide emission in the transport sector.

The number of vehicles per 1,000 population rose from 232 in 2003 to 243 in 2004. This translates to an increase of nearly 5% (Table 10).

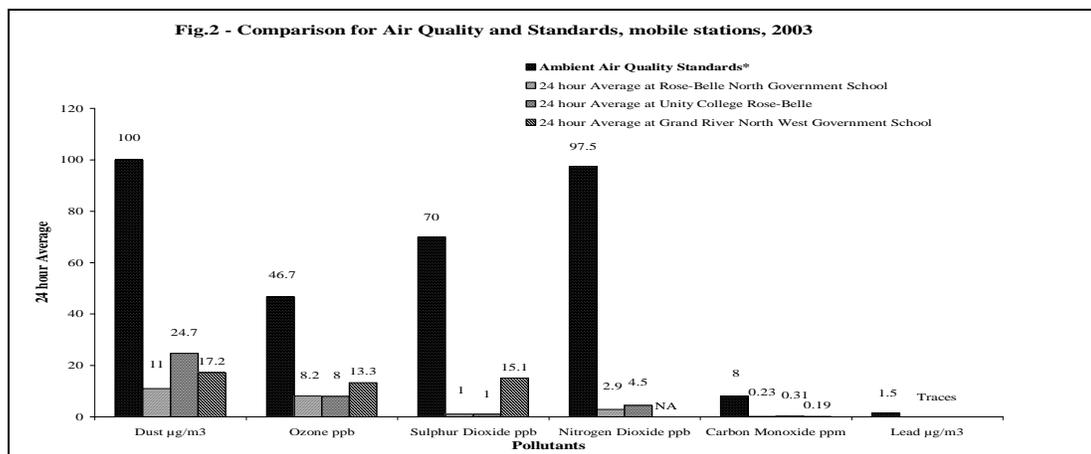
In 2004, about 409 ktce of energy were used for transport; diesel oil accounted for 166 ktce or 41%, aviation fuel 142 ktce or 35% and gasoline 98 ktce or 24%. From 2003 to 2004 the consumption of gasoline and diesel oil in the transport sector rose by about 2% each (Table 11).

5. Ambient Air Quality

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

The main pollutants under investigation are Dust (PM 10), Ozone, Sulphur Dioxide, Nitrogen Dioxide, Carbon Monoxide, Total Suspended Particles and Lead.

The results for all the pollutants under study showed that the levels of ambient pollutants for the 24 hour averages were well below the norms (Table 12 and Fig. 2). However, some parameters were missing due to a breakdown in the measuring apparatus in 2004.



6. Greenhouse gas (GHG)

6.1 Total GHG emissions and removals

Table 13 shows the total emissions and removals of greenhouse gases of which carbon dioxide (CO₂) constituted 94%. The data indicate a marginal rise in net CO₂ emissions from 2,546 thousand tonnes in 2003 to 2,572 thousand tonnes in 2004. Net emissions take into account the removal of CO₂ by forests which act as 'sinks'.

6.2 Carbon dioxide emissions from fuel combustion activities

Carbon dioxide emission resulting from fuel combustion went up marginally from 2,781 thousand tonnes in 2003 to 2,794 thousand tonnes in 2004.

The energy industries remain the principal source of CO₂ emission in the atmosphere. They contributed around 50% of the emissions, with 1,430 thousand tonnes in 2004 compared to 1,418 thousand tonnes in 2003 (+ 0.8%). They were followed by the transport sector which contributed 29% of the total emissions and the manufacturing industries with 13% (Table 14).

6.3 Greenhouse gas inventory

The national inventory of greenhouse gas emissions by source categories for the years 2003 and 2004 is given in Table 15. Other sources of GHG, apart from fuel combustion activities, are industrial processes, solvent and other product use, agriculture, land use change and forestry, and wastes.

The main GHG contributor is the energy industries. Among the other contributors were the agricultural sector which accounted for 1 Gg (1 thousand tonnes) of methane and 1.1 Gg (1.1 thousand tonnes) of nitrous oxide in 2004, and the waste sector which injected some 10.6 Gg (10.6 thousand tonnes) of methane in the same year.

7. Water

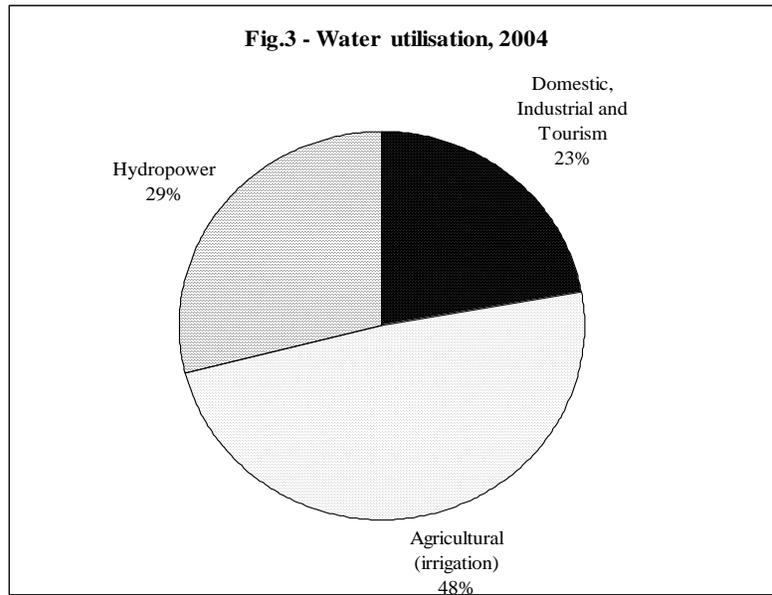
Freshwater resources are of vital environmental and biological importance, since water is a basic support element for human life and ecosystems.

7.1 Water balance

The water balance is based on long term records of annual average rainfall and indicates how fresh water resources are distributed. In 2004, the island of Mauritius received 4,233 million cubic metres (Mm³) of precipitation (rainfall). This was 5.7 % higher than in 2003 when 4,006 Mm³ were obtained. Surface runoff accounted for 60% of the water balance, while evapotranspiration and ground water recharge accounted for 30% and 10% respectively (Table 16).

7.2 Water utilisation

In 2004 the total water demand was estimated at 1,014 Mm³. The agricultural sector accounted for most of the water utilised with 490 Mm³ or 48%. Utilisation for the other purposes was as follows: hydropower 289 Mm³ or 29%, domestic, industrial and tourism 235 Mm³ or 23% (Table 17 and Fig. 3).



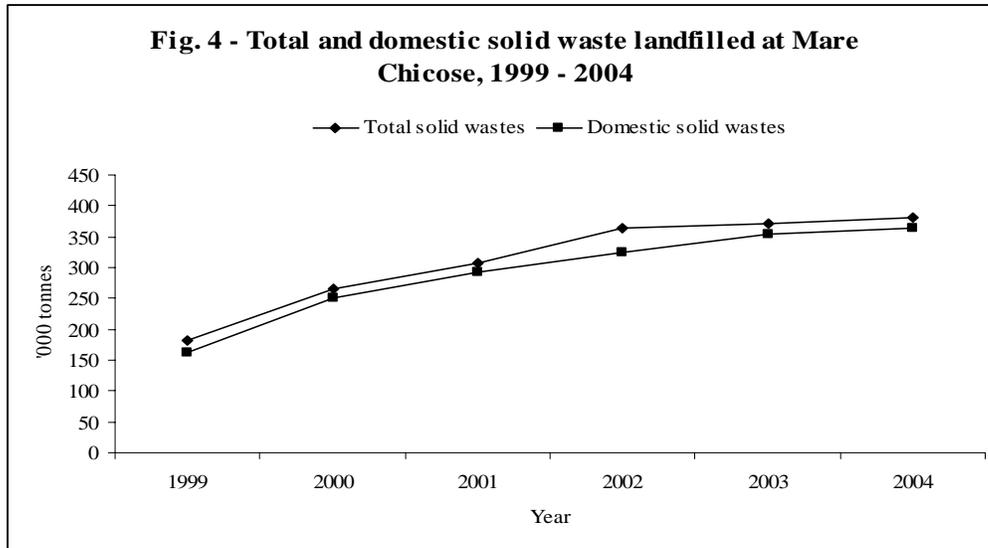
Around 85 % of the total water demand was met by surface water and the remaining 15 % by ground water.

8. Waste

8.1 Waste Disposal

Solid waste has been tracked mainly as domestic, commercial and industrial. The total amount of solid waste landfilled at Mare Chicose rose to 381,204 tonnes in 2004 from 372,440 tonnes in 2003, representing an increase of 2.4% (Table 18).

In 2004 domestic waste constituted 96% of the total solid waste landfilled. The trend of the amount of solid wastes landfilled is as shown in figure 4.



9. Complaints

Effective environmental management needs an appropriate coordination and monitoring of environmental problems. The Department of Environment 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 Department of Environment from 2002 to 2004. The number of complaints received fell by 4%, from 1,768 in 2003 to 1,705 in 2004.

10. Environmental Impacts Assessment (EIA) and Preliminary Environmental Report (PER) Licences

The Department of Environment 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.

10.1 EIA and PER licences

In 2004, 85 EIA licences were granted, compared with 95 in 2003. EIA licenses for housing projects and land parcelling accounted for 40% and 25 % of the total licences respectively (Table 20).

The majority of the PER licences granted in 2004 were for poultry rearing and industrial development, with each accounting for 25% of the projects.

11. Contraventions

The Police de L'Environnement has been established to act as a watchdog to safeguard the environment. The number of contraventions established in 2004 was 5,009, representing an increase of about 10 % over 2003. Most of the contraventions, (4,422 or 88%) were for illegal littering.

The number of notices to drivers of vehicles emitting black smoke rose from 3,666 in 2003 to 4,172 in 2004 (+ 14%).

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Technical notes

Concepts and definitions

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.

Eutrophication: slow ageing process during which a lake or estuary evolves into a bog or marsh and eventually disappears.

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.

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 (CO₂), Methane (CH₄) and Nitrous Oxide (N₂O). Other gases such as Carbon Monoxide (CO), Oxides of Nitrogen (NO_x), 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.

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 ³ | Million cubic metres |
| Gg | Gigagram (thousand tonne) |
| ktoe | Thousand tonne of oil equivalent |
| Toe | Tonne of oil equivalent |
| µg/m ³ | Microgramme per cubic metres |
| ppb | Part per billion |
| ppm | Part per million |
| 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, 1995 and 2004

| Indicator | Units | 1995 | 2004 ¹ |
|---|---------------------------|----------|-------------------|
| 1. Total land area | 000 ha | 186.5 | 186.5 |
| 2. Irrigated land | ha | 17,306.0 | 21,417.0 |
| 3. Forest area (as a % of total land area) | % | 30.6 | 23.8 |
| 4. Land protected areas | ha | 11,125.0 | 13,926.0 |
| 5. Marine protected areas | 000 ha | 7,216.0 | 7,216.0 |
| 6. Threatened plant species (IUCN Red List) | Number | ... | 87 |
| 7. Threatened animal species (IUCN Red List) | Number | ... | 60 |
| 8. Total fish catch | tons | 16,029.0 | 9,431.0 |
| 9. Mean catch per fisherman day | kg | 4.8 | 4.2 |
| 10. Total Carbon dioxide emissior | 000 tons | 1,738.4 | 2,795.7 |
| 11. Per capita carbon dioxide emissior | Gg | 1.6 | 2.3 |
| 12. Mean annual rainfall | millimetres | 1,514.4 | 2,271.4 |
| 13. Annual fresh water abstraction | Mm ³ | 650.0 | 662.0 |
| 14. Daily per capita domestic water consumptio: | litres | 154.8 | 160.0 |
| 15. Daily per capita solid waste generated (estimate) | Kg | 0.6 | 0.9 |
| 16. Total electricity generatec | GWh | 1,165.5 | 2,165.0 |
| 17. Per capita primary energy requiremen | toe | 0.8 | 1.0 |
| 18. Per capita final energy consumptio | toe | 0.6 | 0.7 |
| 19. Energy intensity | toe per Rs 100,000 GDP | 1.8 | 1.6 |

Table 2 - Main socio-economic indicators, 1995 and 2004

| Indicator | Units | 1995 | 2004 ¹ |
|--|--------|---------|-------------------|
| 1. Gross Domestic Product (GDP) at market price: | Rs mn | 70,283 | 174,468 |
| 2. Sectoral contribution to GDP | | | |
| <i>Agriculture</i> | % | 10.3 | 6.2 |
| <i>Manufacturing</i> | % | 22.9 | 21.0 |
| <i>Construction</i> | % | 6.4 | 5.8 |
| <i>Wholesale and retail trade</i> | % | 12.7 | 11.0 |
| <i>Hotels and restaurants</i> | % | 4.6 | 7.5 |
| <i>Transport and communications</i> | % | 11.4 | 13.1 |
| <i>Financial intermediation and business services</i> | % | 15.4 | 19.3 |
| <i>Other</i> | % | 16.3 | 16.1 |
| 3. GDP annual growth rate (basic prices) | % | 5.5 | 4.1 |
| 4. Per capita GDP at market prices | Rs | 62,606 | 141,422 |
| 5. Per capita GDP in US dollars | US\$ | 3,517 | 5,096 |
| 6. Investment (GDFCF) | Rs mn | 16,499 | 37,729 |
| 7. Exports (f.o.b) (include ship's stores and bunkers) | Rs mn | 27,326 | 55,223 |
| 8. Imports (c.i.f) | Rs mn | 34,363 | 76,577 |
| 9. Population (mid year) | 000 | 1,112.4 | 1,233.4 |
| 10. Population annual growth rate | % | 1.2 | 0.8 |
| 11. Population density (per kilometre square) | Number | 554 | 607 |
| 12. Total labour force ² | 000 | 484.8 | 549.6 |
| 13. Total employment ² | 000 | 460.5 | 504.5 |
| <i>Agriculture (as a % of total)</i> | % | 14.7 | 9.7 |
| <i>Manufacturing (as a % of total)</i> | % | 29.5 | 24.6 |
| 14. Unemployment rate ² | % | 5.1 | 8.5 |
| 15. Inflation rate | % | 6.0 | 4.7 |
| 16. Tourist arrivals | 000 | 422.4 | 718.9 |

¹ Provisional

² Year 1995 estimates were based on data from various sources and refer to population aged 12 years and over.

As from 2004, the Continuous Multi Purpose Household Survey is used to measure labour force, employment and unemployment and the estimates refer to population aged 15 years and over.

Table 3 - Land use, Island of Mauritius, 1995

| | 1995 | |
|--------------------------------------|----------------|--------------|
| | Hectares | % |
| Agriculture | 86,500 | 46.4 |
| <i>Sugarcane</i> | 76,840 | 41.2 |
| <i>Other agricultural activities</i> | 9,660 | 5.2 |
| Forests, scrubs & grazing lands | 57,000 | 30.6 |
| Reservoirs, ponds, swamps & rocks | 2,600 | 1.4 |
| Road and footpaths | 4,000 | 2.1 |
| Built-up areas | 36,400 | 19.5 |
| Total | 186,500 | 100.0 |

Source: Initial National Communication under the United Nations Framework Convention on Climate Change, April 1999

Table 4 - Forest area by category, Island of Mauritius, 2004

| | Hectares |
|---|-------------------------|
| | 2004¹ |
| State - owned | 22,066 |
| Plantations | 12,288 |
| Nature reserves | 799 |
| <i>On mainland</i> | 200 |
| <i>Islets</i> | 599 |
| National Park ² | 6,574 |
| Unplanted, protective or to be planted | 1,770 |
| Pas Geometriques | 635 |
| <i>Plantations</i> | 226 |
| <i>Leased for grazing and tree planting</i> | 230 |
| <i>Unplanted, protective or to be planted</i> | 179 |
| Private - owned lands | 25,000 |
| Reserves | 6,553 |
| <i>Mountain reserves</i> | 3,800 |
| <i>River reserves</i> | 2,740 |
| <i>Nature Reserves</i> | 13 |
| Plantations | 2,600 |
| Forest lands, incl. scrub, grazing lands ³ | 15,847 |
| Total | 47,066 |

Source: Forestry Service, Ministry of Agro Industries and Fisheries.

¹ Provisional

² 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

³ Figures not available but estimated

Table 5 - Effective area under cultivation, Island of Mauritius, 2002 - 2004

| Hectares | | | |
|--------------|-------------|-------------|-------------|
| Crops | 2002 | 2003 | 2004 |
| Sugarcane | 75,501 | 74,117 | 70,785 |
| Tea | 680 | 681 | 674 |
| Tobacco | 340 | 379 | 356 |

Table 6 - Consumption of fertilizers, Island of Mauritius, 2002 - 2004

| Tonnes | | | |
|-------------------|---------------|---------------|---------------|
| Detail | 2002 | 2003 | 2004 |
| Fertilizers | 64,739 | 63,507 | 61,266 |
| Nutrients content | | | |
| <i>Nitrogen</i> | <i>11,028</i> | <i>10,742</i> | <i>10,499</i> |
| <i>Phosphate</i> | <i>4,011</i> | <i>4,094</i> | <i>4,022</i> |
| <i>Potash</i> | <i>13,296</i> | <i>11,516</i> | <i>12,248</i> |

Table 7 - Primary energy requirement by energy source, 2002 - 2004

ktoe (000 Tonne of oil equivalent)

| Energy Source | 2002 | 2003 | 2004 |
|-------------------------------|----------------|----------------|----------------|
| Imported | 898.7 | 956.2 | 980.1 |
| Oil ¹ | 652.3 | 704.4 | 741.5 |
| Liquefied petroleum gas (LPG) | 52.5 | 55.8 | 59.2 |
| Coal | 193.9 | 196.0 | 179.4 |
| Local | 270.1 | 266.5 | 275.7 |
| Electricity (hydro) GWh | 18.9 | 10.1 | 10.6 |
| Bagasse ² | 243.9 | 249.1 | 257.8 |
| Fuel wood ² | 7.3 | 7.3 | 7.3 |
| Total | 1,168.8 | 1,222.7 | 1,255.8 |

¹ Includes gasoline, diesel oil, dual purpose kerosene and fuel oil² Estimates**Table 8 - Final energy consumption by sector, 2002 - 2004**

ktoe (000 Tonne of oil equivalent)

| Sector | 2002 | | 2003 | | 2004 | |
|------------------------|-----------------|--------------|-----------------|--------------|-----------------|--------------|
| | Quantity (Ktoe) | % | Quantity (Ktoe) | % | Quantity (Ktoe) | % |
| Manufacturing | 249.2 | 32.6 | 262.3 | 32.2 | 259.3 | 31.0 |
| Transport | 364.1 | 47.6 | 390.2 | 47.9 | 408.7 | 48.8 |
| Household | 102.8 | 13.4 | 107.0 | 13.1 | 111.0 | 13.2 |
| Commercial | 41.7 | 5.5 | 47.7 | 5.8 | 51.5 | 6.1 |
| Agriculture | 4.8 | 0.6 | 4.8 | 0.6 | 4.4 | 0.5 |
| Other (n.e.s & losses) | 2.4 | 0.3 | 2.9 | 0.4 | 3.2 | 0.4 |
| Total | 765.1 | 100.0 | 814.9 | 100.0 | 838.1 | 100.0 |

Table 9 - Fuel input for electricity production, 2002 - 2004

ktoe (000 Tonne of oil equivalent)

| Fuel | 2002 | | 2003 | | 2004 | |
|--------------|-----------------|--------------|-----------------|--------------|-----------------|--------------|
| | Quantity (Ktoe) | % | Quantity (Ktoe) | % | Quantity (Ktoe) | % |
| Fuel oil | 172.4 | 32.4 | 196.3 | 35.3 | 211.3 | 37.0 |
| Diesel oil | 3.5 | 0.6 | 3.9 | 0.7 | 4.0 | 0.7 |
| Kerosene | 5.7 | 1.1 | 10.3 | 1.9 | 17.2 | 3.0 |
| Coal | 177.9 | 33.4 | 178.0 | 32.0 | 164.4 | 28.8 |
| Bagasse | 173.1 | 32.5 | 167.5 | 30.1 | 174.9 | 30.5 |
| Total | 532.5 | 100.0 | 556.0 | 100.0 | 571.8 | 100.0 |

Table 10 - Stock of registered motor vehicles, Island of Mauritius, 2001 - 2004

| Type of vehicle | 2001 | 2002 | 2003 | 2004 |
|-------------------------------------|----------------|----------------|----------------|----------------|
| Cars and Dual Purpose Vehicle (DPV) | 95,066 | 101,436 | 107,907 | 118,009 |
| Auto / Motorcycles | 119,953 | 122,801 | 125,602 | 129,500 |
| Heavy Motor Car and Bus | 3,331 | 3,394 | 3,418 | 3,477 |
| Van and Lorry | 31,582 | 32,986 | 33,997 | 35,100 |
| Other vehicles ¹ | 5,217 | 5,224 | 5,447 | 5,519 |
| Total | 255,149 | 265,841 | 276,371 | 291,605 |

| No of vehicles per 1000 population | 218 | 225 | 232 | 243 |
|------------------------------------|-----|-----|-----|-----|
|------------------------------------|-----|-----|-----|-----|

¹ Includes tractor and dumper, prime mover, trailer and road roller

Table 11 - Fuel used for transport, 2002 - 2004

ktoe (000 Tonne of oil equivalent)

| Fuel | 2002 | 2003 | 2004 |
|-------------------------------|------------|------------|------------|
| Gasolene | 95 | 96 | 98 |
| Liquefied Petroleum Gas (LPG) | 1 | 2 | 3 |
| Diesel oil | 155 | 163 | 166 |
| Aviation fuel | 113 | 129 | 142 |
| Total | 364 | 390 | 409 |

Table 12 - Ambient air quality monitoring around Cassis, 2003 - 2004

| Pollutant | Unit | Minimum | | Maximum | | 24 hour Average for the year | | Ambient air quality standard ² |
|--------------------------------------|-------------------|---------|-------------------|---------|-------------------|------------------------------|-------------------|---|
| | | 2003 | 2004 ¹ | 2003 | 2004 ¹ | 2003 | 2004 ¹ | |
| Dust (PM ₁₀) | µg/m ³ | 10.0 | ... | 119.2 | ... | 25.0 | ... | 100.0 |
| Ozone (O ₃) | ppb | 0.0 | 0.0 | 26.0 | 24.0 | 15.0 | 4.0 | 46.7 |
| Sulphur dioxide (SO ₂) | ppb | 0.0 | 0.0 | 7.0 | 4.0 | 3.0 | 0.9 | 70.0 |
| Nitrogen dioxide (NO ₂) | ppb | 0.0 | ... | 27.0 | ... | 9.0 | ... | 97.5 |
| Carbon monoxide (CO) | ppm | 0.0 | 1.0 | 8.4 | 1.6 | 0.3 | 1.2 | 8.0 |
| Total suspended particles (TSP) | µg/m ³ | 29.6 | ... | 107.5 | ... | 56.4 | ... | 150.0 |
| Lead | µg/m ³ | 0.0 | ... | 0.0 | ... | 0.0 | ... | 1.5 |

Source: Ministry of Environment and National Development Unit.

¹ : Estimate² : 24-hour standard except for Ozone, Carbon monoxide and lead which are based on 1 hour , 8 hour and 3 month averages respectively.Note:(i) Conversion coefficients (at 25⁰ C and 1013 bar) have been used to convert the ambient air quality standards.

(ii)Measurements of the parameters are taken on a quarter hourly basis and the averaging time used is 24 hours.

(iii)Missing values were due to a breakdown in the measuring apparatus in 2004

Table 13 - Total emissions and removals of greenhouse gases, 2002 - 2004

Gg or thousand tonne

| Greenhouse gas | 2002 | 2003 | 2004 ¹ |
|----------------------|---------|---------|-------------------|
| Emissions | | | |
| Carbon Dioxide | 2,647.9 | 2,783.5 | 2,795.7 |
| Methane | 11.7 | 12.0 | 12.3 |
| Oxides of Nitrogen | 14.5 | 15.1 | 15.2 |
| Nitrous Oxide | 1.5 | 1.5 | 1.5 |
| Carbon Monoxide | 62.9 | 65.7 | 66.9 |
| NMVOC ² | 18.5 | 17.5 | 16.5 |
| Sulphur Dioxide | 30.6 | 32.1 | 32.7 |
| Removals | | | |
| Carbon Dioxide | 239.5 | 237.9 | 223.7 |
| Net emissions | | | |
| Carbon Dioxide | 2,408.4 | 2,545.6 | 2,572.0 |

¹ Provisional² Non-methane volatile organic compound**Table 14 - Sectoral carbon dioxide emissions from fuel combustion activities, 2002 - 2004**

Gg or thousand tonne

| Sector | 2002 | | 2003 | | 2004 ¹ | |
|---------------------------------|----------------|--------------|----------------|--------------|-------------------|--------------|
| | Quantity | % | Quantity | % | Quantity | % |
| Energy industries (electricity) | 1,325.9 | 50.1 | 1,418.3 | 51.0 | 1,430.5 | 51.2 |
| Manufacturing industries | 385.5 | 14.6 | 386.4 | 13.9 | 362.3 | 13.0 |
| Transport | 760.0 | 28.7 | 793.2 | 28.5 | 807.1 | 28.9 |
| Residential | 141.8 | 5.4 | 145.9 | 5.2 | 154.2 | 5.5 |
| Other ² | 32.2 | 1.2 | 37.3 | 1.3 | 39.7 | 1.4 |
| Total | 2,645.4 | 100.0 | 2,781.1 | 100.0 | 2,793.8 | 100.0 |

¹ Provisional² includes Agriculture and Trade

Table 15 - National inventory of greenhouse gases by source categories, 2003 - 2004¹

Gg or thousand tonne

| Category | Carbon dioxide(CO ₂) | | | | Methane (CH ₄) | | Nitrous oxide (N ₂ O) | | Oxides of nitrogen (NO _x) | | Carbon monoxide (CO) | | NMVOC ² | | Sulphur dioxide (SO ₂) | |
|-------------------------------------|----------------------------------|----------------|--------------|--------------|----------------------------|-------------|----------------------------------|------------|---------------------------------------|-------------|----------------------|-------------|--------------------|-------------|------------------------------------|-------------|
| | Emissions | | Removals | | 2003 | 2004 | 2003 | 2004 | 2003 | 2004 | 2003 | 2004 | 2003 | 2004 | 2003 | 2004 |
| | 2003 | 2004 | 2003 | 2004 | | | | | | | | | | | | |
| 1. Energy | 2,781.1 | 2,793.8 | - | - | 0.7 | 0.7 | 0.1 | 0.1 | 14.7 | 14.8 | 65.7 | 66.9 | 8.4 | 8.5 | 32.1 | 32.7 |
| Fuel combustion activities | | | | | | | | | | | | | | | | |
| (a) Energy industries (electricity) | 1,418.3 | 1,430.5 | - | - | 0.3 | 0.3 | 0.1 | 0.1 | 5.0 | 5.1 | 8.6 | 9.1 | 0.5 | 0.5 | 22.8 | 23.7 |
| (b) Manufacturing industries | 386.4 | 362.3 | - | - | 0.2 | 0.2 | 0.0 | 0.0 | 1.5 | 1.4 | 16.6 | 16.8 | 0.3 | 0.3 | 7.2 | 6.9 |
| (c) Transport | 793.2 | 807.1 | - | - | 0.1 | 0.1 | - | - | 8.0 | 8.1 | 39.0 | 39.5 | 7.4 | 7.5 | 2.0 | 2.0 |
| (d) Other sectors | 183.2 | 193.9 | - | - | 0.1 | 0.1 | - | - | 0.2 | 0.2 | 1.5 | 1.5 | 0.2 | 0.2 | 0.1 | 0.1 |
| 2. Industrial processes | 2.4 | 1.9 | - | - | - | - | 0.3 | 0.3 | 0.4 | 0.4 | - | - | 9.1 | 8.0 | - | - |
| 3. Solvent and other product use | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 4. Agriculture | - | - | - | - | 1.0 | 1.0 | 1.1 | 1.1 | - | - | - | - | - | - | - | - |
| 5. Land use change and forestry | - | - | 237.9 | 223.7 | - | - | - | - | - | - | - | - | - | - | - | - |
| 6. Waste | - | - | - | - | 10.3 | 10.6 | - | - | - | - | - | - | - | - | - | - |
| Total | 2,783.5 | 2,795.7 | 237.9 | 223.7 | 12.0 | 12.3 | 1.5 | 1.5 | 15.1 | 15.2 | 65.7 | 66.9 | 17.5 | 16.5 | 32.1 | 32.7 |

¹ Provisional

² Non - methane volatile organic compound

Table 16 - Water balance ¹, Island of Mauritius, 1999 - 2004Mm³

| | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 ¹ |
|------------------------------------|--------------|--------------|--------------|--------------|--------------|-------------------|
| Rainfall | 2,184 | 3,749 | 3,527 | 3,905 | 4,006 | 4,233 |
| <i>Surface runoff</i> | <i>1,311</i> | <i>2,249</i> | <i>2,116</i> | <i>2,343</i> | <i>2,403</i> | <i>2,540</i> |
| <i>Evapotranspiration</i> | <i>655</i> | <i>1,125</i> | <i>1,058</i> | <i>1,171</i> | <i>1,202</i> | <i>1,270</i> |
| <i>Net recharge to groundwater</i> | <i>218</i> | <i>375</i> | <i>353</i> | <i>391</i> | <i>401</i> | <i>423</i> |

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

¹ Estimates**Table 17 - Water Utilisation, Island of Mauritius, 2004**Mm³

| Use | Surface water | | Ground water | Total |
|----------------------------------|--------------------|------------|--------------|--------------|
| | River-run offtakes | Storage | | |
| Domestic, Industrial and Tourism | 38 | 72 | 114 | 224 |
| Industrial (private boreholes) | - | - | 11 | 11 |
| Agricultural (irrigation) | 370 | 95 | 25 | 490 |
| Hydropower | 129 | 160 | - | 289 |
| Total | 537 | 327 | 150 | 1,014 |

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

Table 18 - Solid waste landfilled at Mare Chicose by source of waste material, 2002 - 2004

| Tonnes | | | |
|--------------------|----------------|----------------|-------------------|
| Waste material | 2002 | 2003 | 2004 ¹ |
| Domestic | 325,006 | 352,916 | 365,527 |
| Construction | 6,404 | 7,198 | 6,096 |
| Other ² | 32,503 | 12,326 | 9,581 |
| Total | 363,913 | 372,440 | 381,204 |

Source: Ministry of Local Government

¹ Provisional

² Includes mainly industrial waste.

Table 19 - Number of complaints received at the Pollution Prevention and Control Division of the Department of Environment by category, Island of Mauritius, 2002 - 2004

| Category | 2002 | 2003 | 2004 ¹ |
|------------------|--------------|--------------|-------------------|
| Noise | 458 | 583 | 444 |
| Solid waste | 88 | 88 | 177 |
| Air pollution | 229 | 209 | 129 |
| Waste water | 286 | 155 | 180 |
| Animal husbandry | - | - | - |
| Odour | 406 | 344 | 328 |
| Other | 186 | 389 | 447 |
| Total | 1,656 | 1,768 | 1,705 |

Source: Department of Environment of the Ministry of Environment and National Development Unit

¹ Provisional

Table 20 - Number of EIA and PER licences granted by type of project, Island of Mauritius, 2001 - 2004

| Project | EIA | | | | PER ² | |
|--------------------------------|------------|-----------|-----------|-----------|------------------|-------------------|
| | 2001 | 2002 | 2003 | 2004 | 2003 | 2004 ¹ |
| Land parcelling (morcellement) | 74 | 16 | 14 | 21 | 28 | 19 |
| Poultry rearing | 13 | 13 | 18 | - | 3 | 30 |
| Industrial development | 1 | 2 | 28 | 1 | 3 | 30 |
| Coastal hotels & related works | 9 | 15 | 4 | 15 | 11 | - |
| Livestock rearing | - | 1 | 4 | - | 2 | 3 |
| Housing | 4 | 3 | 4 | 34 | 1 | 15 |
| Stone crushing plants | - | 1 | 1 | 2 | 2 | - |
| Development in port area | 2 | - | - | - | - | - |
| Service ("filling") station | - | 1 | 14 | - | 2 | 3 |
| Other | 7 | 12 | 8 | 12 | 13 | 19 |
| Total | 110 | 64 | 95 | 85 | 65 | 119 |

Source: Department of Environment of the Ministry of Environment and National Development Unit

¹ Provisional

² PER licence was issued as from September 2002. Four PER licences issued in 2002 were included in 2003.

Table 21 - Contraventions and notices established by Police De L'Environnement, Island of Mauritius, 2001 - 2004

| Type of contravention | 2001 | 2002 | 2003 | 2004 |
|---|--------------|--------------|--------------|--------------|
| Illegal littering | 1,368 | 3,731 | 3,965 | 4,422 |
| Illegal dumping | 27 | 39 | 31 | 19 |
| Noise | 85 | 156 | 97 | 63 |
| Smoking in prohibited area | 93 | 267 | 40 | 77 |
| Waste carriers offences | ... | 70 | 101 | 64 |
| Setting fire within 50 metres from building/plantatio | ... | 27 | 32 | 11 |
| Obstruction | ... | 45 | 39 | 27 |
| Road Traffic Offences | ... | 68 | 65 | 195 |
| Trading without licence | ... | 50 | 126 | 100 |
| Allowing animal to stray | ... | 18 | 40 | 15 |
| Disturbance | ... | 4 | 11 | 3 |
| Others | 313 | 231 | 24 | 13 |
| Total | 1,886 | 4,706 | 4,571 | 5,009 |
| No. of notices issued to drivers of vehicles emitting black smoke | 1,592 | 2,764 | 3,666 | 4,172 |

Source: Ministry of Environment and National Development Unit