Environment Statistics - 2016

1. Introduction

This issue of Economic and Social Indicators presents statistics on Environment for year 2016 based on data gathered from various institutions.

The main environment indicators for the years 2015 and 2016 are given in Table 1 while technical notes are given at Annex. Figures presented in the tables may not add up to totals due to rounding.

2. Land use, Forestry and Agriculture

2.1 Land use

Land use refers to the main activity taking place on an area of land, for example, farming, forestry or housing. Based on latest available data (Table 2) in 2005, sugar cane plantations occupied 39% (72,000 hectares) of the total land area of the Island of Mauritius, forest, scrubs and grazing lands 25% (47,200 hectares), and built-up areas another 25% (46,500 hectares).

During the period 1995 to 2005, the land occupied by sugarcane, tea plantations and forestry decreased while that of built-up areas, other agricultural activities, infrastructure and inland water resource systems went up.

2.2 Forestry

Preservation of forests is vital for the protection of the ecosystem. Total forest area decreased by 3 hectares from 47,069 hectares in 2015 to 47,066 hectares in 2016. Some 22,066 hectares (47%) of the total forest area in 2016 was state-owned and the remaining 25,000 hectares (53%) was privately-owned (Table 3).

Out of the 22,066 hectares of state-owned forest area, 11,798 hectares (53.5%) were planted areas while the Black River Gorges National Park and the nature reserves accounted for 6,574 (29.8%) and 799 (3.6%) hectares respectively. “Pas Geometriques” covered about 623 hectares (2.8%), other nature parks, 906 hectares (4.1%) and other forest lands, 1,366 hectares (6.2%).

The 25,000 hectares of privately-owned forest lands consisted of 18,447 (74%) hectares of plantation, forest lands, scrub and grazing lands, and 6,553 (26%) hectares of mountain, rivers and nature reserves.

2.3 Agriculture

The production of sugar cane went down by 5.3% from 4,009,232 tonnes in 2015 to 3,798,448 tonnes in 2016. The area harvested decreased by 1.7% from 52,387 hectares in 2015 to 51,477 hectares in 2016, resulting in a decrease of 3.6% in the yield of sugar cane from 76.53 tonnes per hectare in 2015 to 73.79 in 2016 (Table 4).

The production of sugar, went up by 5.5% from 366,070 tonnes in 2015 to 386,277 tonnes in 2016. Compared to 9.14% in 2015, the average extraction rate was 10.18% in 2016, representing an increase of 11.4% mainly due to favourable climatic conditions.

The area under food crops harvested decreased by 2.7% from 8,077 hectares in 2015 to 7,858 hectares in 2016. However the production of food crops increased by 4.7% from 102,663 tonnes to 107,457 tonnes in 2016, mainly explained by favourable climatic conditions.

The area under tea plantation in 2016 was 622 hectares, representing an increase of 8.4% over the figure of 574 hectares in 2015. The production of green tea leaves went up by 8.5% from 6,732 tonnes in 2015 to 7,301 tonnes in 2016.

2.4 Import of fertilisers and pesticides

Intensive use of chemical based fertilisers and other agro-chemicals may contribute to the pollution of the environment through the leaching of nitrate to ground water.

Between 2015 and 2016, import of fertilisers increased by 44.7% (from 32,861 to 47,542 tonnes) and import of pesticides went up by 0.2 % (from 2,567 to 2,573 tonnes) – (Table 5).

3 Greenhouse gas (GHG) emissions

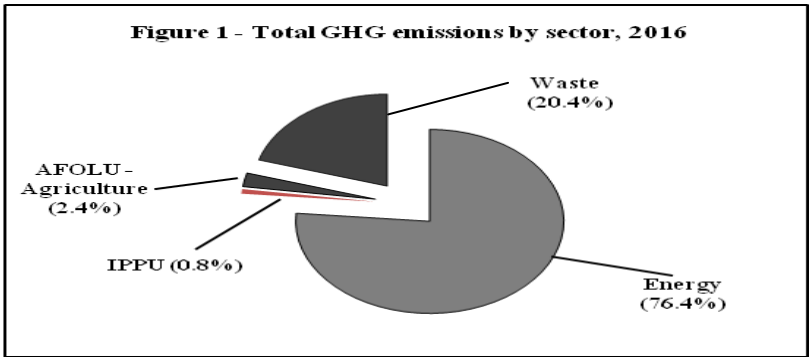
GHG are gases occurring naturally and resulting from human activities (production and consumption). They contribute directly or indirectly to global warming. Some main GHG are Carbon Dioxide (CO_2), Methane (CH_4) and Nitrous Oxide (N_2O).

3.1 Total GHG emissions by sector

The total GHG emissions (excluding Forestry and Other Land Use) in 2016 were 5,370.9 Gg carbon dioxide equivalent (CO_2-eq) compared to 5,318.6 Gg CO_2-eq in 2015, representing an increase of 1%. In 2016, there was a rise in emissions from the energy, industrial process and product use, and waste sectors, partly offset by a slight decrease in emission from agriculture (Table 7). The contribution of GHG to total global GHG emission stood at 0.01%.

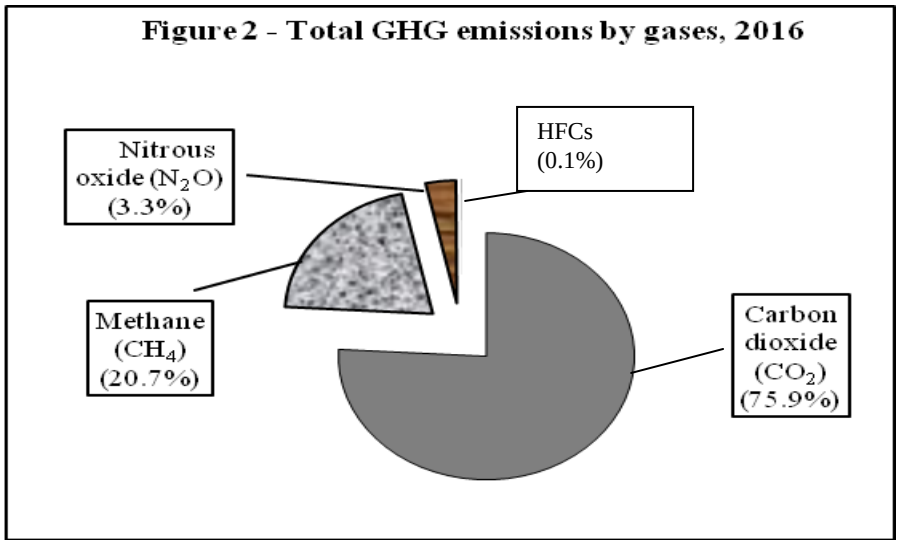
The energy sector was the largest contributing sector and accounted for 76.4% (4,105.0 Gg CO_2-eq) of the total emissions followed by the waste sector with 20.4 % (1,096.8 Gg CO_2-eq), the agriculture sector with 2.4% (127.8 Gg CO_2-eq) and the industrial processes and product use sector, 0.8% (41.3 Gg CO_2-eq) - (Figure 1).

Figure 1 - Total GHG emissions by sector, 2016



3.2 Total GHG emissions by gases

In 2016, carbon dioxide (CO_2) was the main GHG representing 75.9% (4,074.5 Gg) of total GHG emissions. Methane (CH_4) contributed 20.7%, nitrous oxide (N_2O) 3.3%, and hydrofluorocarbons (HFCs) 0.1% (Figure 2).



3.3 Net GHG emissions

The net GHG emissions, after accounting for the removal of CO_2 by Forestry and Other Land Use sector stood at around 5,007.6 Gg CO_2-eq in 2016, up by 1.2% from 4,949.9 Gg CO_2-eq in 2015.

3.4 Energy and Greenhouse gas (GHG)

3.4. 1 Energy sector

Though vital for economic development and households, the production and consumption of energy release greenhouse gases. Carbon dioxide is the main component of the greenhouse gases.

3.4.2 Primary energy requirement

Total primary energy requirement (defined as the sum of imported and locally available fuels less re-exports and bunkering after adjusting for stock changes) was 1,550 thousand tonnes of oil equivalent (ktoe) in 2016, some 1.0% more than in 2015 (Table 6).

Some 15% (227 ktoe) was met from locally renewable energy sources (hydro, wind, landfill gas, bagasse, fuelwood and photovoltaic) while 85% (1,324 ktoe) were from imported fossil fuels (petroleum products and coal).

Energy supply from local renewable sources decreased by 9.6% from 251 ktoe in 2015 to 227 ktoe in 2016 and energy supply from imported fossil fuels went up by 3.2% from 1,283 to 1,324 ktoe.

Energy supply from petroleum products increased by 3.8% from 836 ktoe in 2015 to 868 ktoe in 2016. Supply of coal increased by 1.8% from 447 ktoe in 2015 to 455 ktoe in 2016 (Table 6).

3.4.3 Electricity generation

In 2016, around 42% of electricity was generated from coal, 36% from diesel and fuel oil and 22% from renewable sources. Electricity generated from coal increased by 7.2% from 1,182 GWh in 2015 to 1,267 GWh in 2016; that from diesel and fuel oil together decreased by 1.9% from 1,131 GWh in 2015 to 1,110 GWh in 2016 (Table 9).

Electricity generated from renewable sources decreased from 681 GWh to 663 GWh, down by 2.6%. Landfill gas went down by 5% from 20 GWh to 19 GWh, bagasse by 2.5% from 510 GWh to 497 GWh and hydro by 18% from 122 GWh to 100 GWh. On the other hand, photovoltaic increased by 15.4% from 26 GWh to 30 GWh, and wind increased from 3 GWh to 18 GWh (Table 9).

3.4.4 Fuel input for electricity generation

Table 10 shows the fuel input (petroleum products, coal and bagasse) for electricity generation and indicates that:

- In 2016, coal (52.5%) was the major fuel used to produce electricity followed by fuel oil (25.4%) and bagasse (21.9%);
- Between 2015 and 2016, fuel input decreased by 2.0% from 845 ktoe to 828 ktoe;
- Input of fuel oil decreased by 4.5%, from 220 ktoe in 2015 to 210 ktoe in 2016 while that of coal increased by 2.6%, from 424 ktoe in 2015 to 435 ktoe in 2016;
- Some 181 ktoe of bagasse was used to produce electricity in 2016 compared to 198 ktoe in 2015, down by 8.6%.

3.4.5 Energy sector emissions

In 2016, GHG emission from the energy sector stood at 4,105 Gg CO_2-eq, up by 0.4% from 4,087.8 Gg CO_2-eq in 2015. Within the energy sector, the sub-sector that contributed most of the total GHG emission was the energy industries (electricity generation) which accounted for 59.5 % (2,441 Gg CO_2-eq) of the total emissions. Next came the transport sector which made up 26.0% (1,066 Gg CO_2-eq) of the total emissions, the manufacturing industries making up another 8.5% (347 Gg CO_2-eq) and the other sectors accounting for the remaining 6.1% (251 Gg CO_2-eq) - (Table 8).

3.4.5.1 Energy industries (electricity generation)

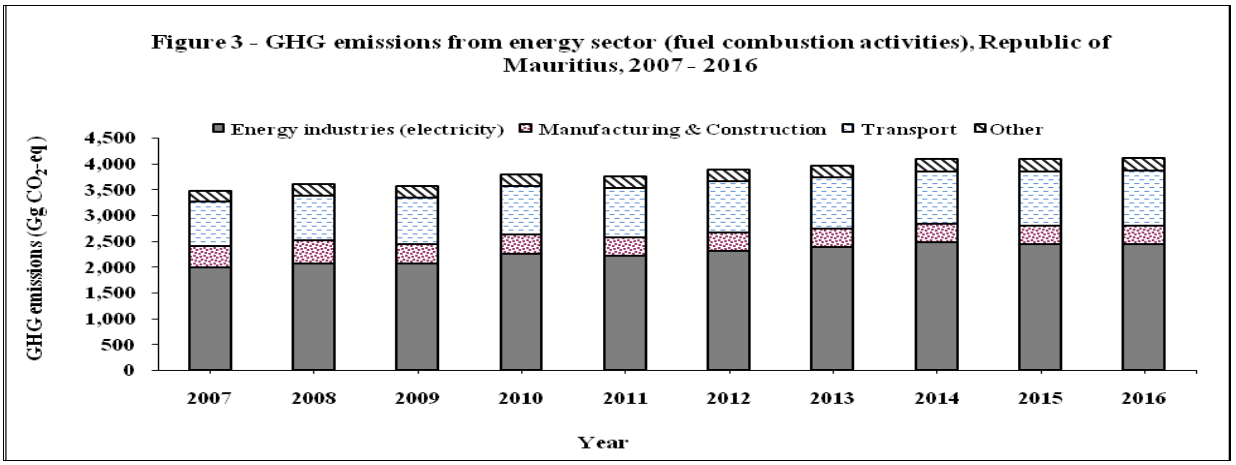
GHG emission from the generation of electricity (energy industries) stood at 2,441 Gg CO_2-eq in 2016 compared to 2,434.8 Gg CO_2-eq in 2015, representing a rise of 0.3% (Table 8). This is mainly attributed to 2.6% increase in the quantity of coal used to produce electricity offset by a decrease of 4.5% in the amount of fuel oil used (Table 10).

3.4.5.2 Transport industries

In 2016, GHG emission from the transport sector was estimated at 1,066 Gg CO_2-eq compared to 1043.7 in 2015, up by 2.1% due to higher fuel consumption. It is to be noted that the number of registered motor vehicles went up by 4.5% from 486,144 in 2015 to 507,676 in 2016 (Table 12). The energy consumed by transport increased from 463.1 ktoe to 505.6 ktoe (9.2%) - (Table11).

3.4.5.3 Manufacturing industries

The manufacturing sector registered a decrease of 4.6% in GHG emissions in 2016 (from 364.1 to 347.3 Gg CO_2-eq). The amount of fossil fuels consumed by the sector went down by 3.7% from 101.4 ktoe in 2015 to 97.6 ktoe in 2016 - (Table11).



4. Temperature

Table 13 indicates that, in 2016, the mean maximum temperature was above the long term (1981-2010) mean for the months of January, February, March, April, August, October and November. On the other hand, the mean minimum temperature was above the long term mean for all the months of 2016. January and February were the warmest months and July the coolest month.

The highest maximum temperature recorded was 35.6 ˚C, recorded on 11 January 2016 at Champs De Mars, Port Louis. The lowest minimum temperature was 10.3 ˚C which was recorded on 15 September 2016 at Bois Cheri.

5. Water

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

5.1 Rainfall

During the year 2016, the mean amount of rainfall recorded around the Island of Mauritius was 1,896 millimetres (mm), representing a drop of 20.2% compared to 2,377 mm in 2015 and a decrease of 5.3% from the long term (1981-2010) mean of 2,003 mm.

The wettest month in 2016 was February with a mean of 442 mm, which represented a surplus of 27% relative to the long term (1981-2010) mean of 348 mm. September was the driest month with a mean of 49 mm of rainfall, registering a deficit of 49% compared to the long term (1981-2010) mean of 96 mm (Table 14).

5*.2 Water Balance*

In 2016, the Island of Mauritius received 3,536 million cubic metres (Mm^3) of water from precipitation (rainfall), 20.2% lower when compared to 4,433 Mm^3 in 2015. Only 10 % (353 Mm^3) of the water went as ground water recharge, while evapotranspiration and surface runoff accounted for 30% (1,061 Mm^3) and 60% (2,122 Mm^3) respectively (Table 15).

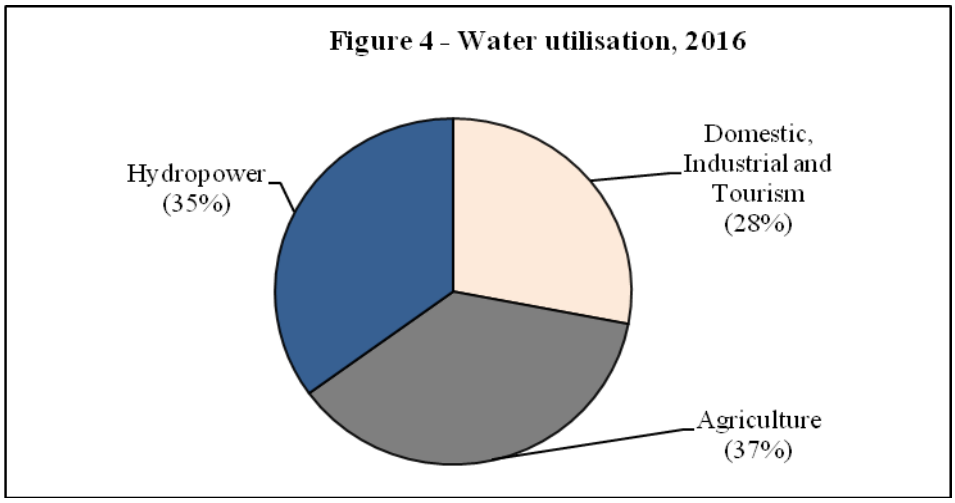
5.3 Water utilisation

Total water utilisation was estimated at 961 Mm^3 in 2016. Around 85% (814 Mm^3) of the total water utilisation was met from surface water and the remaining 15% (147 Mm^3) from ground water.

The agricultural sector accounted for 37% (351 Mm^3) of the water utilised, hydropower 35% (341 Mm^3), and domestic, industrial and tourism sector 28% (269 Mm^3) - (Table 16).

Compared to 2015, water utilisation decreased by 1.2%, from 973 to 961 Mm^3 with changes as follows:

- hydropower (-5.5%);
- agriculture (+2.3%); and
- no change in domestic, industrial and tourism.

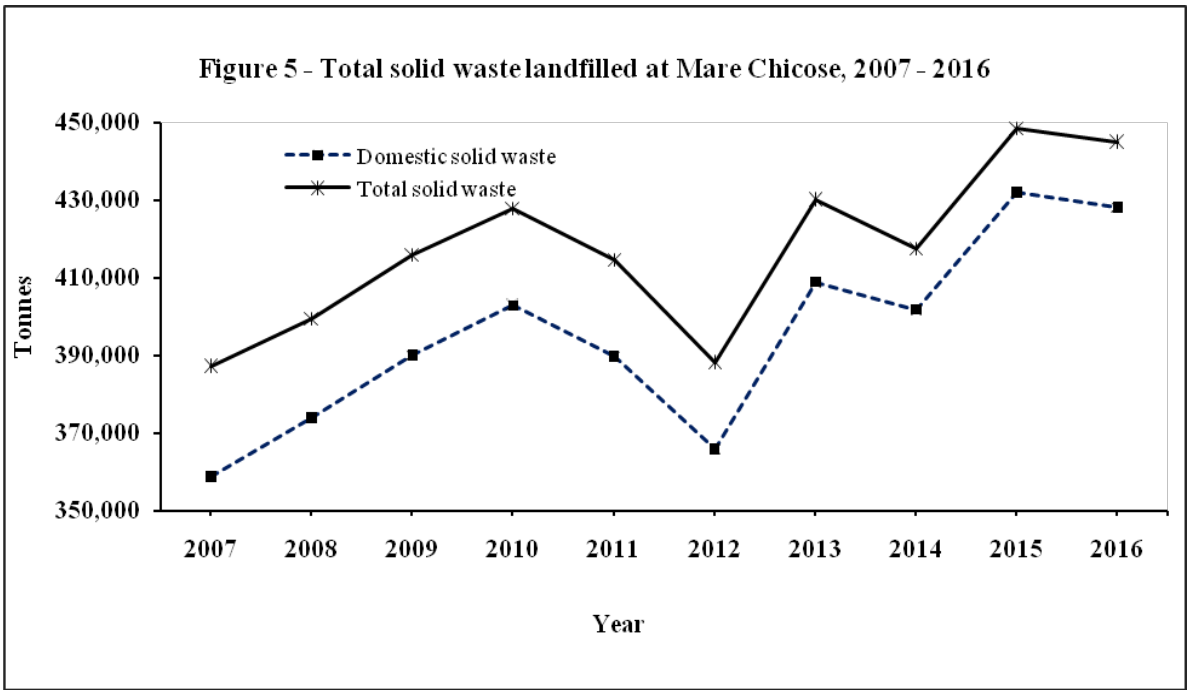


6. Waste

6.1 Waste disposal at Mare Chicose Landfill

The total amount of solid waste landfilled at Mare Chicose decreased to 444,695 tonnes in 2016 from 448,476 tonnes in 2015, down by 0.84 % (Table 17).

Domestic waste constituted 96% of the total solid waste landfilled in 2016. The trend of the amount of solid waste landfilled is as shown in Figure 5.



7. Complaints

Effective environmental management needs appropriate coordination and monitoring of environmental problems. The Environment and Sustainable Development Division of the Ministry of Social Security, National Solidarity and Environment and Sustainable Development addresses complaints received from the general public according to a complaints handling protocol.

Table 18 lists the number of complaints by category received by the Pollution Prevention and Control Division of the Ministry of Social Security, National Solidarity and Environment and Sustainable Development (Environment and Sustainable Development Division) for 2015 and 2016**.** The number of complaints received increased by 11.6% from 628 in 2015 to 701 in 2016. The complaints were mainly due to: noise (14%), air pollution (13%), odour (11%) waste water (9%), and solid waste (7%).

8. Environmental Impact Assessment (EIA) Licences and Preliminary Environmental Report (PER) Approvals

8.1 EIA Licences and PER Approvals

In 2016, some 23 EIA licences were granted of which 9 were for land parcelling (morcellement), 1 for coastal hotels and related works and 1 for stone crushing plant (Table 19).

During the same period, 20 PER approvals were issued of which 7 were for poultry rearing and 3 for industrial development (Table 20).

Statistics Mauritius

Ministry of Finance and Economic Development

Port Louis

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Table 1 - Main environment indicators, 2015 and 2016

Indicator	Units	2015	2016
Republic of Mauritius			
1. Terrestrial protected areas	hectares	14,914.5	14,914.5
2. Marine protected areas	hectares	13,953	13,953
3. Total Greenhouse gas (GHG) emission [1]	Gg CO_2-eq	5,318.6	5,370.9
4. Total carbon dioxide emission [1]	000 tons	4,054.1	4,074.5
5. Per capita carbon dioxide emission	tons	3.2	3.2
6. Total electricity generated	GWh	2,996	3,042
7. Electricity generated from renewable sources	%	22.7	21.8
8. Total primary energy requirement	ktoe	1,534.4	1,550.4
9. Primary energy requirement from renewable sources	%	16.4	14.6
10. Per capita primary energy requirement	toe	1.22	1.23
11. Per capita final energy consumption	toe	0.72	0.75
12. Energy intensity [2]	toe per Rs.100,000 GDP at 2006 prices	0.48	0.47
Island of Mauritius			
13. Forest area	ha	47,069	47,066
14. Total forest area as a % of total land area	%	25.2	25.2
15. Total fish production (fresh-weight equivalent)	tons	14,239 [2]	15,195
16. Irrigated land	ha	16,600	16,807
17. Mean annual rainfall	millimetres	2,377	1,896
18. Mean of maximum annual temperature	degrees Celcius	27.9	27.7
19. Mean of minimum annual temperature	degrees Celcius	20.6	20.4
20. Annual fresh water abstraction	Mm^3	612	620
21. Daily per capita domestic water consumption	litres	169.0	171.0
22. Daily per capita solid waste disposed at landfill	Kg	1.01	1.00

[1] Provisional [2] Revised

Table 2 - Land Use, Island of Mauritius, 1995 and 2005

Land Use Distribution	1995		2005 [1]		Change	
	Hectares	%	Hectares	%	Hectares	%
Sugar cane plantations	76,840	41.2	72,000	38.6	-4,840	-6.3
Tea plantations	3,660	2.0	674	0.4	-2,986	-81.6
Forests, shrubs and grazing lands	57,000	30.6	47,200	25.3	-9,800	-17.2
Other agricultural activities	6,000	3.2	8,000	4.3	2,000	33.3
Infrastructure	4,000	2.1	4,500	2.4	500	12.5
Inland water resource systems	2,600	1.4	2,900	1.6	300	11.5
Built-up areas	36,400	19.5	46,500	24.9	10,100	27.7
Abandoned cane field	…	…	4,726	2.5	…	…
Total	**186,500**	**100.0**	**186,500**	**100.0**	**0**	**0**

Source: Sugar Insurance Fund Board - Sugar cane plantation, Tea Board - Tea Plantation, Climate Change Activities Report, May 2006 - Other

[1] Estimate

Table 3 - Forest area by category, Island of Mauritius, 2015 - 2016

Hectares

Category of Forest	2015		2016	
	Hectares	%	Hectares	%
State - owned lands	**22,069**	**46.9**	**22,066**	**46.9**
Plantations	11,804	25.1	11,798	25.1
Nature reserves	799	1.7	799	1.7
Mainland	*200*	*0.4*	*200*	*0.4*
Islets	*599*	*1.3*	*599*	*1.3*
Black River Gorges National Park	6,574	14.0	6,574	14.0
Bras D'Eau National Park	497	1.1	497	1.1
Islet National Parks	134	0.3	134	0.3
Vallee d'Osterlog Endemic Garden	275	0.6	275	0.6
Other Forest Lands	1,361	2.9	1,366	2.9
Pas Geometriques	625	1.3	623	1.3
Plantations	*216*	*0.5*	*214*	*0.5*
Leased for grazing and tree planting	*230*	*0.5*	*230*	*0.5*
Others (mostly rocky)	*179*	*0.4*	*179*	*0.4*
Private - owned lands [1]	**25,000**	**53.1**	**25,000**	**53.1**
Reserves	6,553	13.9	6,553	13.9
Mountain reserves	*3,800*	*8.1*	*3,800*	*8.1*
River reserves	*2,740*	*5.8*	*2,740*	*5.8*
Private Reserves	*13*	*0.0*	*13*	*0.0*
Other [2]	18,447	39.2	18,447	39.2
Total	**47,069**	**100.0**	**47,066**	**100.0**

Source : Forestry Service, Ministry of Agro Industry and Food Security

[1] Current figures for privately-owned lands are crude estimates based on expert knowledge from Forestry Service

[2] Includes plantations, forest lands, scrub and grazing lands

Table 4 - Agricultural crops - Area harvested and production, Island of Mauritius, 2015 - 2016

Crops	2015 [1]		2016 [2]	
	Area harvested (hectares)	Production (tonnes)	Area harvested (hectares)	Production (tonnes)
Sugarcane [3]	52,387	4,009,232	51,477	3,798,448
Tea (green leaves)	574 [4]	6,732	622 [4]	7,301
Food crops	8,077	102,663	7,858	107,457

[1] Revised [2] Provisional [3] Crop year (July to June of the following year) [4] Area under cultivation

Table 5 - Imports of fertilisers and pesticides, 2015 - 2016

Year	Fertilisers		Pesticides	
	Quantity (tonnes)	Value CIF (Rs mn)	Quantity (tonnes)	Value CIF (Rs mn)
2015 [1]	32,861	450.8	2,567	481.9
2016 [2]	47,542	544.9	2,573	484.9

CIF: Cost, Insurance, Freight [1] Revised [2] Provisional

Table 6 - Total primary energy requirement, Republic of Mauritius, 2015 - 2016

ktoe (000 Tonne of oil equivalent)

Energy source	2015		2016	
	ktoe	%	ktoe	%
Imported (Fossil Fuels)	**1,283.2**	**83.6**	**1,323.6**	**85.4**
Coal	***446.9***	***29.1***	***455.3***	***29.4***
Petroleum products	***836.3***	***54.5***	***868.3***	***56.0***
Gasolene	163.0	10.6	178.9	11.5
Diesel Oil	209.6	13.7	210.5	13.6
Dual Purpose Kerosene	125.2	8.2	148.4	9.6
Kerosene	*0.9*	*0.1*	*0.8*	*0.1*
Aviation Fuel	*124.3*	*8.1*	*147.6*	*9.5*
Fuel Oil	259.2	16.9	249.6	16.1
LPG	79.2	5.2	80.9	5.2
Local (Renewables) [1]	**251.3**	**16.4**	**226.8**	**14.6**
Hydro	10.5	0.7	8.6	0.6
Wind	0.2	0.0	1.5	0.1
Landfill Gas	1.8	0.1	1.6	0.1
Photovoltaic	2.2	0.1	2.6	0.1
Bagasse [2]	230.1	15.0	206.1	13.3
Fuelwood [2]	6.5	0.4	6.4	0.4
Total	**1,534.4**	**100.0**	**1,550.4**	**100.0**

[1] Source: Central Electricity Board and Annual Sugar Industry Energy Survey [2] Estimates

Table 7 - National inventory of greenhouse gas emissions [1] by sector, Republic of Mauritius, 2013[2] and 2014[3] - 2016[3]

Sector	Gg or Thousand Tonnes												Gg CO_2 - eq				Greenhouse gas emissions (GHG) [4] ($Gg\ CO_2$ - eq) excluding Forestry and Other Land Use (FOLU)				% of total GHG emissions			
	Carbon dioxide (CO_2)				Methane (CH_4)				Nitrous oxide (N_2O)				Hydrofluorocarbons (HFCs)											
	2013	2014	2015	2016	2013	2014	2015	2016	2013	2014	2015	2016	2013	2014	2015	2016	2013	2014	2015	2016	2013	2014	2015	2016
1. Energy [5]	3,903.71	4,025.25	4,021.74	4,040.74	0.83	0.84	0.93	0.89	0.14	0.14	0.15	0.15	-	-	-	-	3,965.21	4,086.29	4,087.77	4,104.98	77.4	77.4	76.9	76.4
2. Industrial Processes and Product Use (IPPU)	37.54	37.94	32.40	33.75	-	-	-	-	-	-	-	-	16.50	7.94	7.47	7.53	54.04	45.88	39.87	41.28	1.1	0.9	0.7	0.8
3. Agriculture Forestry and Other Land Use (AFOLU) - Agriculture	-	-	-	-	1.03	1.04	1.04	0.99	0.34	0.35	0.35	0.35	-	-	-	-	127.38	130.34	128.79	127.82	2.5	2.5	2.4	2.4
4. Waste	-	-	-	-	45.51	47.46	49.50	51.15	0.08	0.07	0.07	*0.07*	-	-	-	-	979.26	1,019.42	1,062.13	1,096.78	19.1	19.3	20.0	20.4
Total	**3,941.25**	**4,063.19**	**4,054.14**	**4,074.49**	**47.38**	**49.34**	**51.47**	**53.03**	**0.56**	**0.56**	**0.57**	**0.57**	**16.50**	**7.94**	**7.47**	**7.53**	**5,125.89**	**5,281.93**	**5,318.56**	**5,370.86**	**100.0**	**100.0**	**100.0**	**100.0**

Emissions	Gg CO_2-eq			
	2013 [2]	2014 [3]	2015 [3]	2016 [3]
1. GHG emissions excluding FOLU	5,125.89	5,281.93	5,318.56	5,370.86
2. GHG removals [6] - (FOLU)	367.50	366.90	368.70	363.30
3. GHG emissions including FOLU (= 1 - 2)	4,758.39	4,915.03	4,949.86	5,007.56

[1] *Based on 2006 Intergovernmental Panel on Climate Change (IPCC) Guidelines of the United Nations Framework Convention on Climate Change (UNFCCC)*

[2] Source: National Greenhouse Gases Inventory Report (NIR) under the Third National Communication (TNC)

[3] Provisional (To be revised in First Biennal Update Report)

[4] Refers to carbon dioxide, methane, nitrous oxide and hydrofluorocarbons

[5] Transport under Energy sector is based on linear extrapolation of NIR series 2006 - 2013

[6] Excludes the amount of CO_2 sequestrated by trees and vegetations found along rivers and canal reserves and trees along roads

- : Not occuring

Table 8 - Greenhouse gas emissions from energy sector (fuel combustion activities), Republic of Mauritius, 2013 - 2016

Gg CO_2- eq

Energy Sector	2013		2014		2015		2016	
	Quantity	%	Quantity	%	Quantity	%	Quantity	%
Energy industries (electricity generation)	2,386.16	60.2	2,471.04	60.5	2,434.77	59.6	2,440.99	59.5
Manufacturing industries	342.45	8.6	357.91	8.8	364.07	8.9	347.33	8.5
Transport [1]	1,007.59	25.4	1,021.64	25.0	1,043.74	25.5	1,065.95	26.0
Other [2]	229.02	5.8	235.69	5.8	245.19	6.0	250.71	6.1
Total	**3,965.21**	**100.0**	**4,086.29**	**100.0**	**4,087.77**	**100.0**	**4,104.98**	**100.0**

[1] Based on linear extrapolation of NIR series 2006 - 2013

[2] Includes Residential, Commercial, Institutional and Agriculture

Table 9 - Electricity generation by source of energy, Republic of Mauritius, 2015 - 2016

Source of energy	2015		2016	
	GWh	%	GWh	%
Primary energy	**170.8**	**5.7**	**166.5**	**5.5**
Hydro (renewable energy)	121.9	4.1	99.5	3.3
Wind (renewable energy)	2.7	0.1	18.0	0.6
Landfill gas (renewable energy)	20.4	0.7	18.7	0.6
Photovoltaic (renewable energy)	25.9	0.9	30.3	1.0
Secondary energy	**2,824.8**	**94.3**	**2,875.7**	**94.5**
Gas turbine (kerosene)	2.0	0.1	2.1	0.1
Diesel and Fuel oil	1,131.2	37.8	1,109.8	36.5
Coal	1,181.7	39.4	1,266.8	41.6
Bagasse (renewable energy)	509.8	17.0	497.0	16.3
Total	**2,995.6**	**100.0**	**3,042.2**	**100.0**
of which **:** renewable energy	**680.6**	**22.7**	**663.5**	**21.8**

Table 10 - Fuel input for electricity production, Republic of Mauritius, 2015 - 2016

ktoe (000 Tonne of oil equivalent)

Fuel	2015		2016	
	Quantity (ktoe)	%	Quantity (ktoe)	%
Petroleum products	**222.3**	**26.3**	**212.1**	**25.6**
Fuel oil [1]	*220.4*	*26.1*	*210.3*	*25.4*
Diesel oil	*1.1*	*0.1*	*1.0*	*0.1*
Kerosene	*0.8*	*0.1*	*0.8*	*0.1*
Coal	**424.3**	**50.2**	**434.8**	**52.5**
Total petroleum products and coal	***646.6***	***76.5***	***646.9***	***78.1***
Local renewables	**198.4**	**23.5**	**180.7**	**21.9**
Bagasse	*198.4*	*23.5*	*180.7*	*21.9*
Total	**845.0**	**100.0**	**827.6**	**100.0**

Source: Central Electricity Board and Annual Sugar Industry Energy Survey [1] Provisional for 2016

Table 11 - Final energy consumption by sector and type of fuel, 2015 - 2016

Sector	2015			2016		
	Tonne (except Electricity in GWh)	ktoe	%	Tonne (except Electricity in GWh)	ktoe	%
1. Manufacturing		**216.2**	**23.7**		**206.9**	**21.8**
1.1 excluding bagasse		**184.6**	**20.2**		**181.5**	**19.1**
Fuel oil	37,203	35.7	3.9	36,789	35.3	3.7
Diesel oil	36,592	37.0	4.0	35,305	35.7	3.7
LPG	5,672	6.1	0.7	5,601	6.0	0.6
Coal	36,436	22.6	2.5	33,193	20.6	2.2
Fuel wood [2]	1,300	0.5	0.1	1,261	0.5	0.1
Electricity (*GWh*)	962.0	82.7	9.1	970.5	83.4	8.8
1.2 bagasse	**197,646**	**31.6**	**3.5**	**158,431**	**25.4**	**2.7**
2. Transport [1]		**463.1**	**50.7**		**505.6**	**53.2**
Land		***330.8***	***36.2***		***348.7***	***36.7***
Gasolene	*147,565*	*159.4*	17.5	*161,833*	*174.7*	18.4
LPG	*3,190*	*3.4*	0.4	*3,479*	*3.8*	0.4
Diesel oil	*166,294*	*168.0*	18.4	*168,544*	*170.2*	17.9
Air						
Aviation Fuel	***119,555***	***124.3***	**13.6**	***141,915***	***147.6***	**15.5**
Sea		***8.0***	***0.9***		***9.3***	***1.0***
Gasolene	*3,395*	*3.7*	0.4	*3,844*	*4.2*	0.5
Diesel oil	*1,219*	*1.2*	0.1	*1,235*	*1.2*	0.1
Fuel oil	*3,253*	*3.1*	0.3	*4,048*	*3.9*	0.4
3. Commercial and Distributive Trade		***95.5***	**10.5**		**97.6**	**10.2**
LPG	15,099	16.3	1.8	16,083	17.4	1.8
Charcoal [2]	450	0.3	0.0	420	0.3	0.0
Electricity (*GWh*)	917.5	78.9	8.6	929.1	79.9	8.4
4. Household		**129.9**	**14.2**		**132.2**	**13.9**
Kerosene	131	0.1	0.0	71	0.1	0.0
LPG	49,093	53.0	5.8	49,455	53.4	5.6
Fuelwood [2]	13,625	5.2	0.6	13,564	5.2	0.5
Charcoal [2]	98	0.1	0.0	95	0.1	0.0
Electricity (*GWh*)	831.3	71.5	7.8	854.8	73.5	7.8
5. Agriculture		**4.2**	**0.5**		**4.5**	**0.4**
Diesel oil [2]	2,306	2.3	0.3	2,267	2.3	0.2
Electricity (*GWh*)	21.8	1.9	0.2	25.5	2.2	0.2
6. Other (n.e.s)		**3.9**	**0.4**		**4.3**	**0.5**
TOTAL		**912.9**	**100.0**		**951.1**	**100.0**

[1] Includes transport for all sectors [2] Estimates

Table 12 - Stock of registered motor vehicles, Island of Mauritius, 2015 - 2016

Type of vehicle	2015	2016
Cars and Dual Purpose Vehicle	237,600	251,657
Auto / Motocycles	193,688	199,399
Heavy Motor Car and Bus	4,264	4,423
Van and Lorry	41,601	42,301
Other vehicles[1]	8,991	9,896
Total	**486,144**	**507,676**

[1] Includes tractor and dumper, prime mover, trailer, road roller and other

Table 13 - Mean maximum and mean minimum temperature, Island of Mauritius, 2016

Degree Celcius

Month	Maximum temperature			Minimum temperature			Monthly mean temperature
	Long Term Mean (1981-2010)	Monthly Mean	Difference from Long Term Mean	Long Term Mean (1981-2010)	Monthly Mean	Difference from Long Term Mean	
January	29.8	30.9	1.1	22.3	23.3	1.0	27.1
February	29.8	30.3	0.5	22.6	23.9	1.3	27.1
March	29.4	30.5	1.1	22.1	23.3	1.2	26.9
April	28.6	29.5	0.9	21.2	22.5	1.3	26.0
May	27.0	26.9	-0.1	19.4	19.5	0.1	23.2
June	25.2	25.1	-0.1	17.6	18.4	0.8	21.7
July	24.3	24.1	-0.2	16.9	17.7	0.8	20.9
August	24.4	24.9	0.5	16.9	18.1	1.2	21.5
September	25.3	25.0	-0.3	17.2	17.4	0.2	21.2
October	26.2	27.4	1.2	18.3	19.1	0.8	23.3
November	28.1	28.6	0.5	19.6	20.3	0.7	24.5
December	29.3	29.3	-	21.2	21.2	0.0	25.3
Annual mean temperature	**27.3**	**27.7**	**0.4**	**19.6**	**20.4**	**0.8**	**24.1**

Source: Mauritius Meteorological Services

Table 14 - Mean rainfall, Island of Mauritius, 2015 - 2016

Millimetres

Month	Long Term Mean (1981-2010)	2015		2016	
		Monthly Mean	% of Long Term Mean	Monthly Mean	% of Long Term Mean
January	263	455	173	185	70
February	348	271	78	442	127
March	263	400	152	153	58
April	212	134	63	245	116
May	148	165	111	127	86
June	107	218	204	133	124
July	125	150	120	180	144
August	106	143	135	130	123
September	96	46	48	49	51
October	77	152	197	50	65
November	78	96	123	64	82
December	180	147	82	138	77
Total for the year	**2,003**	**2,377**	**119**	**1,896**	**95**

Source: Mauritius Meteorological Services

Table 15 - Water balance, Island of Mauritius, 2015 - 2016

Mm^3

	2015	2016
Rainfall	**4,433**	**3,536**
Surface runoff	*2,660*	*2,122*
Evapotranspiration	*1,330*	*1,061*
Net recharge to groundwater	*443*	*353*

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

Table 16 - Water Utilisation, Island of Mauritius, 2015 - 2016

Mm^3

Utilisation	2015				2016			
	Surface water		Ground water	Total	Surface water		Ground water	Total
	River-run offtakes	Reservoirs			River-run offtakes	Reservoirs		
Industrial and Tourism	35 [1]	87	133	255	36 [1]	88	133	257
Industrial	5	2 [2]	7	14	3	2 [2]	7	12
Agricultural	270	68 [3]	5	343	276	68 [3]	7	351 [6]
Hydropower	183 [4]	178 [5]	-	361	161 [4]	180 [5]	-	341
Overall utilisation	**493**	**335**	**145**	**973**	**476**	**338**	**147**	**961**
Total water mobilisation	**442**	**274**	**145**	**861**	**444**	**277**	**147**	**868**

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

[1] Used also for Reduit hydropower station

[2] Used by IPP (formerly accounted in agricultural purpose)

[3] Used also for Tamarind Falls, Magenta and La Ferme hydropower stations

[4] Used also twice for Le Val and Ferney hydropower stations

[5] Used also twice for Tamarind Falls and Magenta hydropower stations

[6] Excludes 6 Mm^3 re-use of treated waste water (Non conventional water)

Table 17 - Disposal of solid waste by type at Mare Chicose landfill site, 2015 - 2016

Tonnes

Waste material	2015	2016
Domestic	431,995	428,032
Construction	1,488	2,757
Other [1]	14,993	13,906
Total	**448,476**	**444,695**

Source: Solid Waste Management Division, Ministry of Social Security, National Solidarity and Environment and Sustainable Development

[1] Includes mainly industrial waste

Table 18 - Number of complaints received at the Pollution Prevention and Control Division by category, Island of Mauritius, 2015 - 2016

Category	2015	%	2016	%
Noise	114	18	98	14
Solid waste	39	6	49	7
Air pollution	115	18	91	13
Waste water	78	12	63	9
Odour	76	12	77	11
Other [1]	206	33	323	46
Total	**628**	**100**	**701**	**100**

Source: Ministry of Social Security, National Solidarity and Environment and Sustainable Development (Environment and Sustainable Development Division)

[1] includes backfilling, erosion, illegal construction, objections to projects, law and order, land conversions, land reclamation, landslides etc

Table 19 - Number of Environmental Impact Assessment (EIA) licences granted by type of project, 2015 - 2016, Island of Mauritius

Project	EIA	
	2015	2016
Land parcelling (morcellement)	2	9
Industrial development	4	-
Coastal hotels and related works	3	1
Housing	1	-
Stone crushing plants	2	1
Development in port area	2	-
Other	8	12
Total	**22**	**23**

Source: Ministry of Social Security, National Solidarity and Environment and Sustainable Development (Environment and Sustainable Development Division)

Table 20 - Number of Preliminary Environmental Report (PER) approvals granted by type of project, 2015 - 2016, Island of Mauritius

Project	PER	
	2015	2016
Land parcelling (morcellement)	-	2
Poultry rearing	4	7
Industrial development	3	3
Coastal hotels & related works	-	-
Livestock rearing	-	-
Housing	1	2
Other	5	6
Total	**13**	**20**

Source: Ministry of Social Security, National Solidarity and Environment and Sustainable Development (Environment and Sustainable Development Division)

ABBREVIATIONS AND SYMBOLS

Abbreviations

Rs	Rupees
Rs mn	Rupees million
%	Percentage
f.o.b	free on board
c.i.f	Cost, insurance, freight
000	Thousand
Mm^3	Million cubic metres
Gg	Gigagram (thousand tonnes)
toe	Tonne of oil equivalent
ktoe	Thousand tonnes of oil equivalent
GWh	Gigawatt hour
PER	Preliminary environmental report
EIA	Environmental impact assessment

Symbols

-	Nil or negligible
…	Not available

Conversion factor

1 square kilometre	= 100 hectares

ANNEX

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.

Land use, Agriculture and Forestry

Land use: Land use reflects both the activities undertaken and the institutional arrangements put in place for a given area for the purposes of economic production, or the maintenance and restoration of environmental functions. Consequently, there are areas of land that are "not in use" by human activities.

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.

Energy and Greenhouse gas

Greenhouse gases (GHG): These gases occur naturally and result from human activities (production and consumption) that contribute directly or indirectly to global warming. Some main GHG are Carbon Dioxide (CO_2), methane (CH_4) and Nitrous Oxide (N_2O). Other gases such as Carbon monoxide (CO), oxides of Nitrogen (NOx), non methane volatile organic compounds (NMVOC) and Sulphur dioxide (SO_2), contribute indirectly to global warming. GHG 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 equivalent (CO_2-eq): It is a measure used to compare the emissions from various greenhouse gases based upon their global warming potential (GWP). The carbon dioxide equivalent of a gas is derived by multiplying the weight of the gas by its associated Global Warming Potential (GWP).

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.

Renewable energy: Renewable energy is captured from sources that replenish themselves. It includes solar (photovoltaic and thermal), hydroelectric, geothermal, tidal action, wave action,

marine (non-tidal currents, temperature differences and salinity gradients), wind and biomass energy, all of which are naturally replenished, even though their flow may be limited.

Final energy consumption: Energy consumption by final user, i.e energy which is not being used for transformation into other forms of energy.

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: 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): 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.

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)