Environment Statistics - 2019

1. Introduction

This issue of Economic and Social Indicators presents statistics on Environment for year 2019 based on data gathered from various institutions.

The main environment indicators for the years 2018 and 2019 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 38.6% (72,000 hectares) of the total land area of the Island of Mauritius, forest, scrubs and grazing lands, 25.3% (47,200 hectares) and built-up areas 24.9% (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 from 47,048 hectares in 2018 to 47,031 hectares in 2019, explained by a decrease of 17 hectares in "Pas Geometriques". Some 22,031 hectares (46.8%) of the total forest area in 2019 was state-owned and the remaining 25,000 hectares (53.2%) was privately-owned (Table 3).

Out of the 22,031 hectares of state-owned forest area, 11,799 hectares (53.6%) 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 589 hectares (2.7%), other nature parks, 908 hectares (4.1%), Ramsar sites, 46 hectares (0.2%) and other forest lands, 1,316 hectares (6.0%).

The 25,000 hectares of privately-owned forest lands consisted of 18,447 (73.8%) hectares of plantation, forest lands, scrub and grazing lands, and 6,553 (26.2%) hectares of mountain, rivers and nature reserves.

2.3 Agriculture

The production of sugar cane went up by 7.9% from 3,154,515 tonnes in 2018 to 3,405,250 tonnes in 2019. However, the area harvested decreased from 47,678 hectares in 2018 to 45,054 hectares in 2019. The average yield has thus increased by 14.2% from 66.16 tonnes per hectares in 2018 to 75.58 in 2019 (Table 4).

The production of sugar went up by 2.4% from 323,406 tonnes in 2018 to 331,105 tonnes in 2019. Compared to 10.26% in 2018, the average extraction rate was 9.73% in 2019.

The area under food crops harvested decreased by 4.1% from 7,646 hectares in 2018 to 7,334 hectares in 2019. Production of foodcrops decreased by 3.2% from 96,847 tonnes in 2018 to 93,736 tonnes in 2019 mainly explained by unfavourable climatic conditions.

The area under tea plantation in 2019 was 656 hectares, same as in 2018. The production of green tea leaves went up from 8,056 tonnes in 2018 to 8,329 tonnes in 2019.

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.

From 2018 to 2019, import of fertilisers decreased by 1.2% from 33,750 tonnes to 33,354 tonnes while import of pesticides increased by 0.1% from 2,587 tonnes to 2,590 tonnes (Table 5).

3. Greenhouse Gas (GHG) Emissions

GHG are gases occurring naturally and also resulting from human-induced activities (anthropogenic emissions from 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 2019 were 5777.0 Gg Carbon Dioxide equivalent (CO_2-eq) compared to 5,613.2 Gg CO_2-eq in 2018, representing an increase of 2.9 %. In 2019, there was a rise in emissions from "Energy", "Industrial Processes and Product Use" and "Waste" sectors, partly offset by a decrease in emission from "Agriculture"(Table 7). The contribution of GHG to total global GHG emission stood at 0.01% (Source:United Nations Environment Programe(UNEP), Emissions Gap Report 2019).

The Energy sector was the largest contributor accounting for 74.2% (4,288.8 Gg CO_2-eq) of the total emissions followed by the Waste sector with 23.0 % (1,323.1 Gg CO_2-eq), the Agriculture sector with 2.0 % (116.4 Gg CO_2-eq) and the Industrial Processes and Product Use sector, 0.8% (48.8 Gg CO_2-eq) - (Figure 1).

Figure 1 - Total Greenhouse Gas Emissions (GHG) emissions by sector, 2019
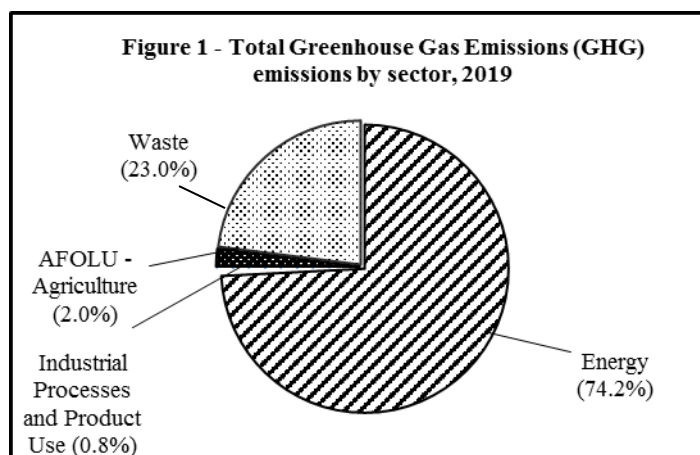
3.2 Total GHG emissions by gases

In 2019, Carbon Dioxide (CO_2) was the main GHG representing 73.9% (4,264.2 Gg) of total GHG emissions. Methane (CH_4) contributed 23.3% (1,341.0 Gg CO_2-eq), Nitrous Oxide (N_2O) 2.6% (159.8 Gg CO_2-eq), and hydrofluorocarbons (HFCs) 0.2% (12.1 Gg CO_2-eq)- (Figure 2).

Figure 2 - Total GHG emissions by gases, 2019
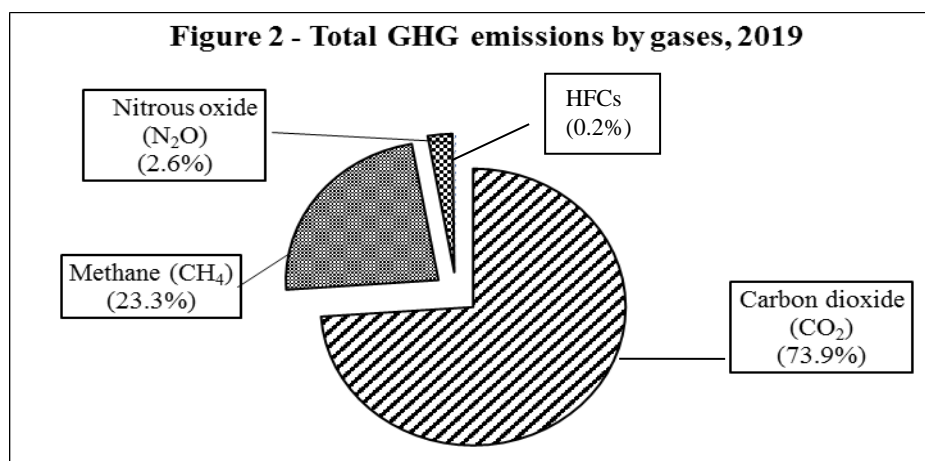
3.3 Net GHG emissions

In 2019, GHG emissions have increased due to a higher fuel consumption in the Household and Commercial and Distributive Trade sectors. A reduction in forest area resulted in a decrease in GHG removals. Consequently, the net emissions went up by 3.2% from 5,248.2 Gg CO_2-eq in 2018 to 5,416.1 Gg CO_2-eq in 2019. (Table 7).

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 (total primary energy requirement = local production + imports of primary energy − re-exports of primary energy − international bunkers − stock changes) was 1,626.7 thousand tonnes of oil equivalent (ktoe) in 2019, some 2.5% higher than in 2018 (1,586.3 ktoe) - (Table 6).

Some 12.6% (204 ktoe) was met from locally renewable energy sources (hydro, wind, landfill gas, bagasse, fuelwood and photovoltaic), while 87.4% (1,422 ktoe) were from imported fossil fuels (petroleum products and coal).

In 2019, energy supply from local renewable sources remained at the same level as in 2018 (204.4 ktoe). Energy sources from bagasse decreased by 1.7% from 180 ktoe in 2018 to 177 ktoe in 2019, hydro decreased by 20.6% from 10.7 ktoe to 8.5 ktoe, landfill gas decreased by 10.5% from 1.9 ktoe to 1.7 ktoe while photovoltaic increased by 161.9% from 4.2 to 11.0 ktoe. Wind remained same at 1.3 ktoe.

From 2018 to 2019, energy supply from imported fossil fuels increased by 2.9% from 1,382 to 1,422 ktoe. Energy supply from petroleum products increased by 8.2% from 934 ktoe in 2018 to 1011 ktoe in 2019. On the other hand, supply of coal decreased by 8.0% from 448 ktoe to 412 ktoe (Table 6).

3.4.3 Electricity generation

Total electricity generated increased by 3.4% from 3,132 GWh in 2018 to 3,237 GWh in 2019. In 2019, around 36.3% of electricity was generated from coal, 41.7% from diesel and fuel oil, and 21.7% from renewable sources. Electricity generated from coal decreased by 6.8% from 1,260 GWh in 2018 to 1,174 GWh in 2019; that from diesel and fuel oil together increased by 10.4% from 1,222 GWh in 2018 to 1,349 GWh in 2019 (Table 9).

Electricity generated from renewable sources increased from 649 GWh to 702 GWh, up by 8.2%. Landfill gas decreased by 13.0% from 23 GWh to 20 GWh, hydro decreased by 20.8% from 125 GWh to 99 GWh and photovoltaic increased by 163.3% from 49 GWh to 129 GWh. Electricity generated from bagasse increased by 0.7% from 437 GWh to 440 GWh and wind remained almost same at around 15 GWh (Table 9).

3.4.4 Fuel input for electricity generation

Fuel input for electricity generation from petroleum products, coal and bagasse as shown in Table 10 indicates that:

- In 2019, coal (47.9%) was the major fuel used to produce electricity followed by fuel oil (32.0%) and bagasse (19.5%);

- Between 2018 and 2019, fuel input decreased by 1.0% from 828 ktoe to 820 ktoe;

- Input of fuel oil increased by 10.5%, from 237 ktoe in 2018 to 262 ktoe in 2019 and that of coal decreased by 8.1%, from 428 ktoe in 2018 to 393 ktoe in 2019;

- Some 160 ktoe of bagasse was used to produce electricity in 2019 compared to 161 ktoe in 2018, down by 0.6%.

3.4.5 Energy sector emissions

In 2019, GHG emission from the energy sector stood at 4,289 Gg CO_2-eq, up by 1.8% from 4,215 Gg CO_2-eq in 2018. Within the energy sector, the sub-sector that contributed most of the GHG emission was the energy industries (electricity generation) which accounted for 57.1 % (2,450 Gg CO_2-eq) of the total emissions. Next came the transport sector which made up 26.4% (1,132 Gg CO_2-eq) of the total emissions, the manufacturing industries and construction making up another 8.3% (356 Gg CO_2-eq) and the other sectors accounting for the remaining 8.2% (351 Gg CO_2-eq) - (Table 8).

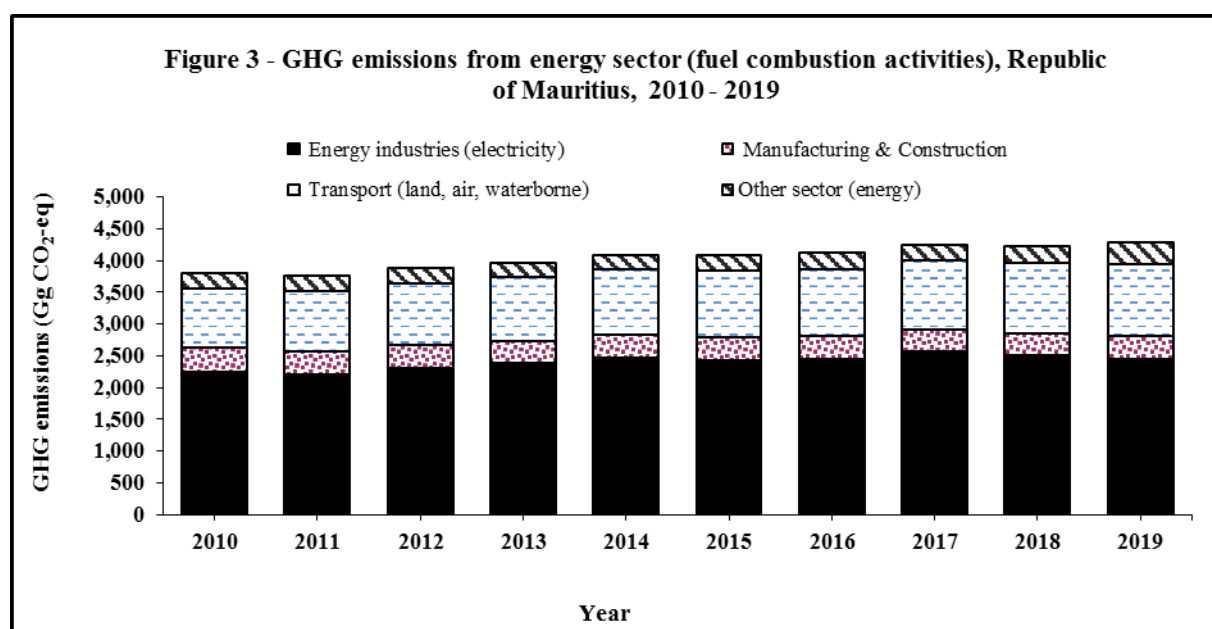*3.4.5.1   Energy industries (electricity generation)*

GHG emission from the generation of electricity (energy industries) stood at 2,450 Gg CO_2-eq in 2019 compared to 2,498 Gg CO_2-eq in 2018, representing a decrease of 1.9% (Table 8). This is mainly attributed to a 8.1% decrease (from 428 ktoe to 393 ktoe) in the quantity of coal partly offset by a 10.5% increase (from 237 ktoe to 262 ktoe) in the amount of fuel oil used to produce electricity (Table 10).

3.4.5.2 Transport industries

In 2019, GHG emission from the transport sector was estimated at 1,132 Gg CO_2-eq compared to 1,109 in 2018, up by 2.1% due to higher fuel consumption. It is to be noted that the number of registered motor vehicles went up by 4.4% from 556,001 in 2018 to 580,629 in 2019 (Table 12). The energy consumed by transport increased by 2.2% from 540 ktoe to 552 ktoe - (Table11).

3.4.5.3 Manufacturing industries and construction

The manufacturing industries and construction sector registered an increase of 2.0% in GHG emissions in 2019 (from 349 to 356 Gg CO_2-eq). The amount of coal consumed by the sector decreased from 19.8 ktoe to 18.4 ktoe and consumption of fuel oil, diesel and LPG increased from 78.5 ktoe to 82.6 ktoe (Table11).

Figure 3 - GHG emissions from energy sector (fuel combustion activities), Republic of Mauritius, 2010 - 2019

4. Ambient Air Quality

Air quality is an indicator which gives an account of the presence of substances or compounds in the air which can present a potential risk to the environment and to the health of the population exposed to them. It can be expressed by concentration of pollutants such as particulate matter (PM), Carbon Monoxide, Sulphur Dioxide.

Figure 4 presents the monthly (24-hour) average of fine particulate matter with a diameter of size less or equal to 10 micrometers (PM_{10}) recorded at the urban background ambient air quality monitoring stations at Port Louis and Vacoas, and at the roadside ambient air quality monitoring station at Rose Hill. The figures indicate that the level of PM_{10} was below 100 µg/m^3, the Ambient Air Quality Standard, Environmental Protection (Standard for Air) Regulations 1998, for all the months of the year.

Figure 4 - Monthly (24-hour average) ambient air quality monitoring (PM_{10}) at fixed stations, 2019
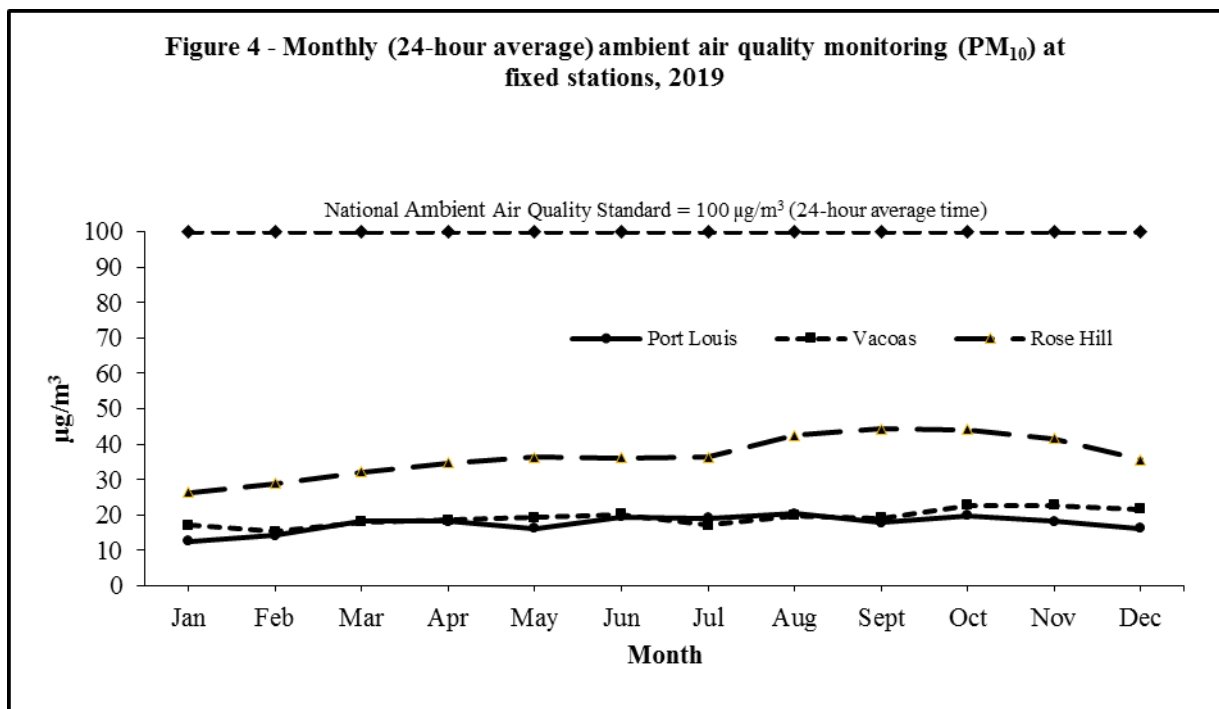
Source: National Environmental Laboratory, Ministry of Environment, Solid Waste Management and Climate Change

5. Temperature

Table 13 indicates that, in 2019, both the mean maximum temperature and the mean minimum temperature were above the long term (1981-2010) mean for all months of the year 2019. January was the warmest month of the year with a mean of 27.1 ˚C and July the coolest month with a mean of 21.8 ˚C.

The highest maximum temperature recorded was 35.5 ˚C, recorded on 13 December 2019 at Mon Desert Mon Tresor. The lowest minimum temperature was 10.0 ˚C, which was recorded on 13 July 2019 at Mon Desert Alma.

6. Water

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

6.1 Rainfall

During the year 2019, the mean amount of rainfall recorded around the Island of Mauritius was 2,130 millimetres (mm), representing a decrease of 24 % compared to 2,816 mm in 2018 and an increase of 6% from the long term (1981-2010) mean of 2,003 mm.

The wettest month in 2019 was December with a mean of 295 mm, which represented a surplus of 64% relative to the long term (1981-2010) mean of 180 mm. September was the driest month with a mean of 81 mm of rainfall, registering a deficit of 16% compared to the long term (1981-2010) mean of 96 mm (Table 14).

6.2 Water Balance

In 2019, the Island of Mauritius received 3,972 million cubic metres (Mm^3) of water from precipitation (rainfall), 24.4% lower when compared to 5,252 Mm^3 in 2018. Only 10 % (397 Mm^3) of the water went as ground water recharge, while evapotranspiration and surface runoff accounted for 30% (1,192 Mm^3) and 60% (2,383 Mm^3) respectively (Table 15).

6.3 Water utilisation

Total water utilisation was estimated at 928 Mm^3 in 2019. Around 83% (772 Mm^3) of the total water utilisation was met from surface water and the remaining 17% (153 Mm^3) from ground water.

The agricultural sector accounted for 32% (301 Mm^3) of the water utilised, domestic, industrial and tourism sector 32% (297 Mm^3), and hydropower, the remaining 36% (330 Mm^3) - (Table 16).

Compared to 2018, water utilisation decreased by 5.4%, from 981 to 928 Mm^3 with changes as follows:

- agriculture (+3.4%);
- domestic, industrial and tourism (+1.7%); and
- hydropower (-17.1%).

Figure 5 - Water utilisation, 2019
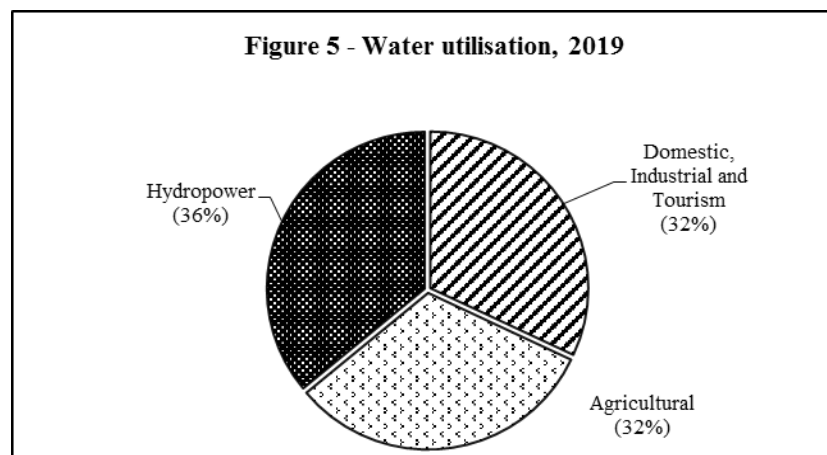
7. Waste

7.1 Waste disposal at Mare Chicose Landfill

The total amount of solid waste landfilled at Mare Chicose decreased by 1.1% from 543,197 tonnes in 2018 to 537,147 tonnes in 2019 (Table 17). The trend of the total amount of solid waste landfilled and the per capita solid waste landfilled are as shown in Figure 6. The per capita total solid waste landfilled increased by 23.7% from 0.97 kg/day in 2010 to 1.20 kg/day in 2019.
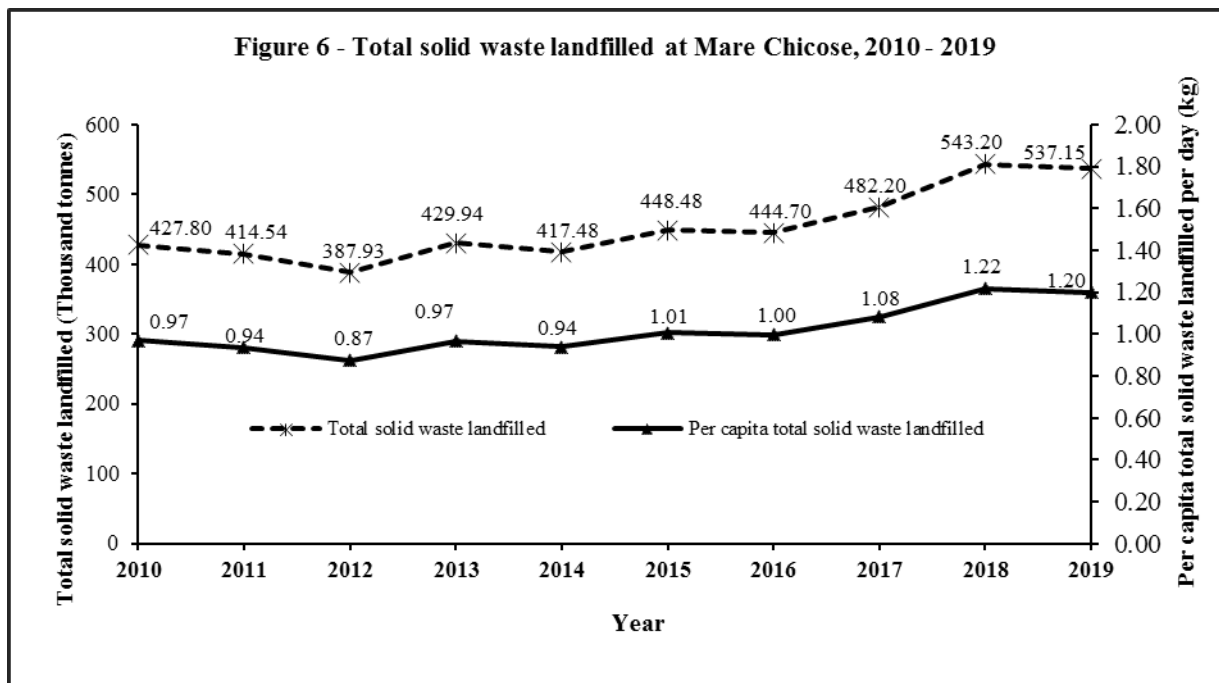

Figure 6 - Total solid waste landfilled at Mare Chicose, 2010 - 2019

8. Complaints

Effective environmental management needs appropriate coordination and monitoring of environmental problems. The Ministry of Environment, Solid Waste Management and Climate Change addresses complaints received from the general public according to a complaints handling protocol.

Complaints attended by the Pollution Prevention and Control Division of the Ministry of Environment, Solid Waste Management and Climate Change (including those received from the Citizen Support Portal) are categorised at Table 18. The number of complaints attended decreased by 21.7% from 626 in 2018 to 490 in 2019. The main categories of complaints were as follows: solid waste (15.7%), bareland (15.1%), odour (14.9%), air pollution (13.9%) and, noise (11.6%).

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

9.1 EIA Licences and PER Approvals

In 2019, some 34 EIA licences were granted, which comprised 12 for coastal hotels and related works, 8 were for land parcelling (morcellement), 7 for "housing/integrated resort scheme/property development scheme/smart city" and 4 for "other projects such as desalination plants and clinics amongst others" (Table 19).

During the same period, 36 PER approvals were issued, which comprised 13 for poultry, rearing, 13 for industrial development, 3 for livestock rearing, 3 for "housing/integrated resort scheme/property development scheme/smart city", and 3 for "other projects such as bus depot, heliport and batching plant amongst others" (Table 20).

Statistics Mauritius

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Table 1 - Main environment indicators, 2018 and 2019

Indicator	Unit	2018	2019 [2]
Republic of Mauritius			
1. Terrestrial protected areas	hectares	14,915	14,915
2. Marine protected areas	hectares	13,953	13,953
3. Total Greenhouse gas (GHG) emission	Gg CO_2-eq	5,613.2	5,777.0
4. Total carbon dioxide emission	000 tons	4,190.5	4,264.2
5. Per capita carbon dioxide emission	tons	3.31	3.37
6. Total electricity generated	GWh	3,131.6	3,236.6
7. Electricity generated from renewable sources	%	20.7	21.7
8. Total primary energy requirement	ktoe	1,586.3	1,626.7
9. Primary energy requirement from renewable sources	%	12.9	12.6
10. Per capita primary energy requirement	toe	1.25	1.29
11. Per capita final energy consumption	toe	0.78	0.82
12. Energy intensity	toe per Rs.100,000 GDP at 2006 prices	0.44	0.44
Island of Mauritius			
13. Forest area	ha	47,048	47,031
14. Total forest area as a % of total land area	%	25.2	25.2
15. Total fish production (fresh-weight equivalent)	tons	29,116 [1]	31,663
16. Irrigated land	ha	17,357 [1]	15,640
17. Mean annual rainfall	millimetres	2,816	2,130
18. Mean of maximum annual temperature	degrees Celcius	28.2	28.2
19. Mean of minimum annual temperature	degrees Celcius	20.7	20.8
20. Mean annual temperature	degrees Celcius	24.4	24.5
21. Annual fresh water abstraction	Mm^3	578	595
22. Daily per capita domestic water consumption	litres	180	181
23. Daily per capita total solid waste disposed at landfill	Kg	1.22	1.20

[1] Revised   [2] Provisional

Table 2 - Land use by category, Island of Mauritius, 1995 and 2005

Land use	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
Other agricultural activities	6,000	3.2	8,000	4.3	2,000	33.3
Forests, shrubs and grazing lands	57,000	30.6	47,200	25.3	-9,800	-17.2
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	NA	NA	4,726	2.5	NA	NA
Total	**186,500**	**100.0**	**186,500**	**100.0**	**0**	**0**

Source: (i) Sugar Insurance Fund Board - Sugar cane plantation, (ii) Tea Board - Tea Plantation, (iii) Climate Change Activities Report, May 2006 - Other

[1] Estimate

Table 3 - Forest area by category, Island of Mauritius, 2018 - 2019

Hectares

Category of Forest	2018		2019	
	Hectares	**%**	**Hectares**	**%**
State - owned lands	**22,048**	**46.9**	**22,031**	**46.8**
Plantations	11,799	25.1	11,799	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 [1]	497	1.1	497	1.1
Special Reserves [2]	136 [3]	0.3	136	0.3
Vallee d'Osterlog Endemic Garden	275	0.6	275	0.6
Ramsar sites	46	0.1	46	0.1
Rivulet Terre Rouge Estuary Bird Sanctuary	*26*	*0.1*	*26*	*0.1*
Pointe D'Esny Wetland	*20*	*0.0*	*20*	*0.0*
Other Forest Lands	1,316 [3]	2.8	1,316	2.8
Pas Geometriques	606	1.3	589	1.3
Plantations	*214*	*0.5*	*214*	*0.5*
Leased for grazing and tree planting	*230*	*0.5*	*230*	*0.5*
Others (mostly rocky)	*162*	*0.3*	*162*	*0.3*
Private - owned lands [4]	**25,000**	**53.1**	**25,000**	**53.2**
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 [5]	18,447	39.2	18,447	39.2
Total	**47,048**	**100.0**	**47,031**	**100.0**

[1] Bras D'Eau National Park was proclaimed in 2011. From 2002 to 2010, it was known as Bras D'Eau & Poste La Fayette Reserves

[2] "Islet National Parks" renamed as "Special Reserves" as per Native Terrestrial Biodiversity & National Parks Act of 2015

[3] Revised

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

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

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

Table 4 - Agricultural crops - Area harvested and production, Island of Mauritius, 2018 - 2019

Crops	2018		2019 [2]	
	Area harvested (hectares)	Production (tonnes)	Area harvested (hectares)	Production (tonnes)
Sugar cane	47,678	3,154,515 [1]	45,054	3,405,250
Tea (green leaves)	656 [3]	8,056	656 [3]	8,329
Food crops	7,646	96,847	7,334	93,736
Sugar	Napp	323,406	Napp	331,105

[1] Revised   [2] Provisional   [3] Area under cultivation

Table 5 - Imports and value (c.i.f)[1] of fertilisers and pesticides, 2018 - 2019

Year	Fertilisers		Pesticides	
	Quantity (tonnes)	Value c.i.f (Rs mn)	Quantity (tonnes)	Value c.i.f (Rs mn)
2018	33,750	418.0	2,587	505.0
2019	33,354	438.2	2,590	582.2

[1] Cost, Insurance, Freight

Table 6 - Total primary energy requirement, Republic of Mauritius, 2018 - 2019

ktoe (000 Tonne of oil equivalent)

Energy source	2018 [1]		2019 [2]	
	ktoe	%	ktoe	%
Imported (Fossil Fuels)	**1,381.9**	**87.1**	**1,422.3**	**87.4**
Coal	*447.7*	*28.2*	*411.6*	*25.3*
Petroleum products	*934.2*	*58.9*	*1,010.7*	*62.1*
Gasolene	191.5	12.1	208.9	12.8
Diesel Oil	216.6	13.6	223.7	13.8
Dual Purpose Kerosene	163.3	10.3	156.6	9.6
Kerosene	*0.7*	*0.0*	*3.9*	*0.2*
Aviation Fuel	*162.5*	*10.2*	*152.7*	*9.4*
Fuel Oil	278.7	17.6	303.8	18.7
LPG	84.2	5.3	117.6	7.2
Local (Renewables)	**204.4**	**12.9**	**204.4**	**12.6**
Hydro	10.7	0.7	8.5	0.5
Wind	1.3	0.1	1.3	0.1
Landfill Gas	1.9	0.1	1.7	0.1
Photovoltaic	4.2	0.3	11.0	0.7
Bagasse [3]	180.1	11.3	177.0	10.9
Fuelwood [3]	6.1	0.4	4.9	0.3
Total	**1,586.3**	**100.0**	**1,626.7**	**100.0**

[1] Revised   [2] Provisional   [3] Estimates

Source: Central Electricity Board and Annual Sugar Industry Energy Survey

Table 7 - National inventory of greenhouse gas emissions [1] by sector, Republic of Mauritius, 2018[2] - 2019[2]

| Sector | Gg or Thousand Tonnes | | | | | | Gg CO_2 - eq | | Greenhouse gas emissions (GHG) [3] (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) | | | | | |
	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019
1. Energy [4]	4,153.74	4,227.48	0.86	0.86	0.14	0.14	..	..	4,215.20	4,288.79	75.1	74.2
2. Industrial Processes and Product Use (IPPU)	36.72	36.72	..	..	..	..	11.19	12.05	47.91	48.77	0.8	0.8
3. Agriculture Forestry and Other Land Use (AFOLU) - Agriculture	..	..	1.50	1.07	0.31	0.30	..	..	127.60	116.37	2.3	2.0
4. Waste	..	..	57.18	61.92	0.07	0.07	..	..	1,222.48	1,323.12	21.8	23.0
Total	**4,190.46**	**4,264.20**	**59.54**	**63.86**	**0.52**	**0.52**	**11.19**	**12.05**	**5,613.19**	**5,777.04**	**100.0**	**100.0**

| Emissions | Gg CO_2-eq | |
	2018 [2]	2019 [2]
1. GHG emissions excluding Forestry and Other Land Use (FOLU)	5,613.19	5,777.04
2. GHG removals [5] - (FOLU)	365.00	360.90
3. GHG emissions including FOLU (= 1 - 2)	5,248.19	5,416.14

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

[2] Provisional (To be revised in First Biennial Update Report)

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

[4] Transport under Energy sector is based on linear extrapolation of National Inventory Report (NIR) series 2006 - 2013

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

.. : Not occuring, not applicable, not estimated

Table 8 - Greenhouse gas emissions from energy sector (fuel combustion activities), Republic of Mauritius, 2018 - 2019

Gg CO_2- eq

Energy Sector	2018 [1]		2019 [1]	
	Quantity	%	Quantity	%
Energy industries (electricity generation)	2,498.27	59.3	2,449.90	57.1
Manufacturing industries and construction	348.57	8.3	355.78	8.3
Transport [2]	1,109.46	26.3	1,131.99	26.4
Other Sectors [3]	258.90	6.1	351.12	8.2
Total	**4,215.20**	**100.0**	**4,288.79**	**100.0**

[1] Provisional (To be revised in First Biennial Update Report)

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

[3] Includes Residential, Commercial, Institutional and Agriculture

Table 9 - Electricity generation by source of energy, Republic of Mauritius, 2018 - 2019

Source of energy	2018		2019	
	GWh	%	GWh	%
Primary energy	**211.6**	**6.8**	**262.2**	**8.1**
Hydro (renewable energy)	124.5	4.0	98.6	3.0
Wind (renewable energy)	15.1	0.5	15.2	0.5
Landfill gas (renewable energy)	22.6	0.7	19.9	0.6
Photovoltaic (renewable energy)	49.4	1.6	128.5	4.0
Secondary energy	**2,920.0**	**93.2**	**2,974.4**	**91.9**
Gas turbine (kerosene)	1.8	0.1	11.7	0.3
Diesel and Fuel oil	1,221.6	39.0	1,349.0	41.7
Coal	1,259.5	40.2	1,174.1	36.3
Bagasse (renewable energy)	437.1	14.0	439.6	13.6
Total	**3,131.6**	**100.0**	**3,236.6**	**100.0**
of which **:** renewable energy	**648.7**	**20.7**	**701.9**	**21.7**

Table 10 - Fuel input for electricity production, Republic of Mauritius, 2018 - 2019

ktoe (000 Tonne of oil equivalent)

Fuel	2018		2019	
	Quantity (ktoe)	%	Quantity (ktoe)	%
Petroleum products	**239.0**	**28.8**	**266.7**	**32.6**
Fuel oil	*237.4*	*28.6*	*262.2*	*32.0*
Diesel oil	*0.9*	*0.1*	*0.7*	*0.1*
Kerosene	*0.7*	*0.1*	*3.8*	*0.5*
Coal	**427.9**	**51.7**	**393.2**	**47.9**
Total petroleum products and coal	***666.9***	***80.5***	***659.9***	***80.5***
Local renewables	**161.4**	**19.5**	**160.3**	**19.5**
Bagasse	*161.4*	*19.5*	*160.3*	*19.5*
Total	**828.3**	**100.0**	**820.2**	**100.0**

Source: Central Electricity Board and Annual Sugar Industry Energy Survey

Table 11 - Final energy consumption by sector and type of fuel, 2018 - 2019

Sector	2018			2019 [1]		
	Tonne (except Electricity in GWh)	ktoe	%	Tonne (except Electricity in GWh)	ktoe	%
1. Manufacturing		**203.5**	**20.6**		**203.3**	**19.5**
1.1 excluding bagasse		**184.8**	**18.7**		**186.6**	**17.9**
Fuel oil	38,762	37.2	3.8	38,926	37.4	3.6
Diesel oil	34,804	35.2	3.6	37,810	38.2	3.7
LPG	5,669	6.1	0.6	6,518	7.0	0.7
Coal	31,886	19.8	2.0	29,668	18.4	1.7
Fuel wood [2]	1,200	0.5	0.0	1,100	0.4	0.0
Electricity (*GWh*)	1,002	86.1	8.7	991	85.2	8.2
1.2 bagasse	**116,582**	**18.7**	**1.9**	**104,285**	**16.7**	**1.6**
2. Transport [3]		**540.1**	**54.6**		**552.1**	**53.0**
Land		*367.6*	*37.2*		*388.4*	*37.3*
Gasolene	*173,021*	*186.9*	*18.9*	*188,824*	*203.9*	*19.6*
LPG	*3,290*	*3.6*	*0.4*	*3,052*	*3.3*	*0.3*
Diesel oil	*175,405*	*177.2*	*17.9*	*179,356*	*181.2*	*17.4*
Air						
Aviation Fuel	*156,291*	*162.5*	*16.4*	*146,851*	*152.7*	*14.7*
Sea		*10.0*	*1.0*		*11.0*	*1.1*
Gasolene	*4,255*	*4.6*	*0.5*	*4,645*	*5.0*	*0.5*
Diesel oil	*1,291*	*1.3*	*0.1*	*1,655*	*1.7*	*0.2*
Fuel oil	*4,225*	*4.1*	*0.4*	*4,459*	*4.3*	*0.4*
3. Commercial and Distributive Trade		**101.3**	**10.2**		**111.3**	**10.6**
LPG	*17,214*	18.6	1.9	*22,668*	24.5	2.3
Charcoal [2]	*380*	0.3	0.0	*350*	0.3	0.0
Electricity (*GWh*)	959	82.4	8.3	*1,006*	86.5	8.3
4. Household		**138.1**	**14.0**		**167.6**	**16.1**
Kerosene	46	0.0	0.0	-	-	-
LPG	51,457	55.6	5.6	76,290	82.4	7.9
Fuelwood [2]	13,089	5.0	0.5	10,120	3.8	0.4
Charcoal [2]	87	0.1	0.0	64	0.0	0.0
Electricity (*GWh*)	901	77.5	7.8	947	81.4	7.8
5. Agriculture		**3.7**	**0.4**		**3.7**	**0.4**
Diesel oil [2]	2,110	2.1	0.2	2,040	2.1	0.2
Electricity (*GWh*)	19	1.6	0.2	19	1.6	0.2
6. Other (n.e.s)		**2.5**	**0.3**		**4.4**	**0.4**
TOTAL		**989.2**	**100.0**		**1,042.4**	**100.0**

[1] Provisional   [2] Estimates   [3] Includes transport for all sectors

Table 12 - Stock of registered motor vehicles, Island of Mauritius, 2018 - 2019

Type of vehicle	2018	2019
Cars, Dual Purpose Vehicle, Double cab pick up	289,676	307,081
Auto / Motocycles	211,125	216,863
Heavy Motor Car and Bus	4,453	4,457
Van, lorry and truck	44,011	45,211
Other vehicles[1]	6,736	7,017
Total	**556,001**	**580,629**
of which hybrid vehicles	*9,992*	*13,762*
electric vehicles	*85*	*195*

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

Table 13 - Mean maximum, mean minimum and mean temperature, Island of Mauritius, 2019

Degree Celcius

Temperature	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Annual mean temperature
Maximum temperature													
Long Term Mean (1981-2010)	29.8	29.8	29.4	28.6	27.0	25.2	24.3	24.4	25.3	26.2	28.1	29.3	**27.3**
Monthly Maximum Mean Temperature	30.8	30.6	31.2	29.7	27.4	25.5	25.2	25.5	26.1	27.5	29.1	30.4	**28.2**
Difference from Long Term Mean	1.0	0.8	1.8	1.1	0.4	0.3	0.9	1.1	0.8	1.3	1.0	1.1	**0.9**
Minimum temperature													
Long Term Mean (1981-2010)	22.3	22.6	22.1	21.2	19.4	17.6	16.9	16.9	17.2	18.3	19.6	21.2	**19.6**
Monthly Minimum Mean Temperature	23.5	23.0	22.9	22.6	20.1	19.0	18.3	18.2	18.1	19.5	21.0	22.9	**20.8**
Difference from Long Term Mean	1.2	0.4	0.8	1.4	0.7	1.4	1.4	1.3	0.9	1.2	1.4	1.7	**1.2**
Mean temperature													
Long Term Mean (1981-2010)	26.1	26.2	25.8	24.9	23.2	21.4	20.6	20.7	21.3	22.3	23.9	25.3	**23.5**
Monthly Mean temperature	27.1	26.8	27.0	26.2	23.7	22.3	21.8	21.9	22.1	23.5	25.1	26.6	**24.5**
Difference from Long Term Mean	1.0	0.6	1.2	1.3	0.5	0.9	1.2	1.2	0.8	1.2	1.2	1.3	**1.0**

Source: Mauritius Meteorological Services

Table 14 - Mean rainfall, Island of Mauritius, 2018 - 2019

Millimetres

Month	Long Term Mean (1981-2010)	2018		2019	
		Monthly Mean	% of Long Term Mean	Monthly Mean	% of Long Term Mean
January	263	794	302	263	100
February	348	337	97	232	67
March	263	319	121	144	55
April	212	394	186	339	160
May	148	78	53	126	85
June	107	103	96	185	173
July	125	154	123	171	137
August	106	36	34	119	112
September	96	87	91	81	84
October	77	55	71	89	116
November	78	195	250	86	110
December	180	264	147	295	164
Total for the year	**2,003**	**2,816**	**141**	**2,130**	**106**

Source: Mauritius Meteorological Services

Table 15 - Water balance, Island of Mauritius, 2017 - 2018

Mm^3

	2018	2019
Rainfall	**5,252**	**3,972**
Surface runoff	*3,151*	*2,383*
Evapotranspiration	*1,576*	*1,192*
Net recharge to groundwater	*525*	*397*

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

Table 16 - Water Utilisation, Island of Mauritius, 2018 - 2019

Mm³

Utilisation	2018				2019			
	Surface water		Ground water	Total	Surface water		Ground water	Total
	River-run offtakes	Storage (Reservoirs)			River-run offtakes	Storage (Reservoirs)		
Domestic, Industrial and Tourism (CWA network)	51 [1]	92	138	**281**	52 [1]	94	141	**287**
Agricultural	234	60 [2]	5	**299** [*1]	237	56 [2]	5	**301** [*1]
Hydropower	166 [3]	232 [4]	0	**398**	163 [4]	167 [3]	0	**330**
Industrial	2	2 [5]	7	**11**	2	1	7	**10**
Overall utilisation	**453**	**386**	**150**	**994** [*1]	**454**	**318**	**153**	**928** [*1]
Total water mobilisation	**396**	**325**	**150**	**871**	**420**	**266**	**153**	**839**

[1] 33 Mm³ used also for Reduit hydropower station

[2] 26 Mm³ used also for Tamarind Falls and Magenta hydropower stations and 5 Mm³ for La Ferme hydropower station;   [*1] Includes 5 Mm³ re-use of treated waste water

[3] 24 Mm³ used also twice for Le Val and Ferney hydropower stations;

[4] 30 Mm³ used also twice at Midlands and La Nicoliere;

[5] Mm³ Used by IPP (formerly accounted in agricultural purpose)

[1] 18 Mm³ used also for Reduit hydropower station

[2] 21 Mm³ used for Tamarind Falls and Magenta hydropower stations and 5 Mm³ for La Ferme hydropower station;

[3] 26 Mm³ used at Midlands and La Nicoliere;

[4] 16 Mm³ used at Le Val and Ferney hydropower stations;

[*1] Includes 3 Mm³ re-use of treated waste water

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

Table 17 - Disposal of solid waste by type at Mare Chicose landfill site, 2018 - 2019

Tonnes

Waste material	2018	2019
Domestic and Commercial	522,292	512,908
Construction	4,872	9,578
Other [1]	16,033	14,661
Total	**543,197**	**537,147**

Source: Ministry of Environment, Solid Waste Management and Climate Change

[1] Includes mainly industrial waste

Table 18 - Number of complaints [1] attended at the Pollution Prevention and Control (PPC) Division by category, Island of Mauritius, 2018 - 2019

Category	2018	%	2019	%
Noise	91	14.5	57	11.6
Solid waste	59	9.4	77	15.7
Air pollution	113	18.1	68	13.9
Waste water	71	11.3	32	6.5
Odour	66	10.5	73	14.9
Bareland	58	9.3	74	15.1
Flooding/Obstruction of rivers and drains [2]	16	2.6	23	4.7
Other [3]	152	24.3	86	17.6
Total	**626**	**100.0**	**490**	**100.0**

[1] Include number of complaints attended at PPC Division through the Citizen Support Portal.

[2] Complaints regarding "Flooding/obstruction of rivers and drains" were recorded in "Other" prior to 2018.

[3] Includes backfilling, erosion, illegal construction, objections to projects, law and order, land conversion, land reclamations, landslides etc.

Source: Ministry of Environment, Solid Waste Management and Climate Change

Table 19 - Number of Environmental Impact Assessment (EIA) licences granted by type of project, 2018 - 2019, Island of Mauritius

Project	EIA	
	2018	**2019**
Land parcelling (morcellement)	10	8
Industrial development	-	2
Coastal hotels and related works	17	12
Housing/Integrated Resort Scheme/Property Development Scheme/Smart City	8	7
Photovoltaic Farms	2	-
Stone crushing plants	-	1
Development in port area	2	-
Construction of road and highway	2	-
Other projects	8	4
Total	**49**	**34**

Source: Ministry of Environment, Solid Waste Management and Climate Change

Table 20 - Number of Preliminary Environmental Report (PER) approvals granted by type of project, 2018 - 2019, Island of Mauritius

Project	PER	
	2018	**2019**
Land parcelling (morcellement)	1	1
Poultry rearing	11	13
Industrial development	10	13
Livestock rearing	2	3
Housing/Integrated Resort Scheme/Property Development Scheme/Smart City	2	3
Other projects	6	3
Total	**32**	**36**

Source: Ministry of Environment, Solid Waste Management and Climate Change

Technical notes

Concepts and definitions

Environment

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

Environment Statistics: Environment statistics are environmental data that have been structured, synthesized and aggregated according to statistical methods, standards and procedures. The scope of environment statistics covers biophysical aspects of the environment and those aspects of the socioeconomic system that directly influence and interact with the environment.

Environmental indicator: Environmental indicators are environment statistics that have been selected for their ability to depict important phenomena or dynamics. Environmental indicators are used to synthesize and present complex environment and other statistics in a simple, direct, clear and relevant way.

Land use, Agriculture and Forestry

Pas Geometriques: Pas Géométriques are a narrow belt, theoretically 81.21 metres (250 French feet) in width, round the coast and are State-owned. There are several cases where the width is less than 81.21 metres or does not exist at all.

Ramsar Sites: The Convention on Wetlands also known as the Ramsar Convention defines wetlands as "Areas of marsh, fen, peat land or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres". Mauritius became a contracting party to the Ramsar Convention on 30 September 2001.

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 also result from human-induced activities (anthropogenic 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).

Global Warming Potential (GWP)

The Global Warming Potential (GWP) was adopted from the Intergovernmental Panel on Climate Change (IPCC) Second Assessment Report (SAR – 100 years" time horizon) as in the table below.

GHG	GWP
Carbon Dioxide CO$_2$	1
Methane CH$_4$	21
Nitrous Oxide N$_2$O	310
Hydrofluorocarbon 134a	1300

Primary energy requirement: It is the sum of locally available energy plus imports primary energy less re-exports of primary energy and international bunkers, 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)

Abbreviations

Rs	Rupees
Rs mn	Rupees million
%	Percentage
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
$\mu g/m^3$	Micrograms per cubic metre

Symbols

0	Nil
NA	Not available
Napp	Not applicable

Conversion factor

1 square kilometre   = 100 hectares