

**MINISTRY OF SOCIAL SECURITY, NATIONAL  
SOLIDARITY, AND ENVIRONMENT AND SUSTAINABLE  
DEVELOPMENT**

**(ENVIRONMENT AND SUSTAINABLE DEVELOPMENT DIVISION)**

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**ANNUAL REPORT  
2018/2019**

## TABLE OF CONTENTS

Statement from Minister	5
Statement from Permanent Secretaries	6
<b>Part I – ABOUT THE MINISTRY</b>	
Vision and Mission	8
Roles and Functions of the Ministry	9
Ministry Officials	10-11
Gender Statement	12
About Our People	13-14
<b>Part II – MINISTRY/DEPARTMENTS ACHIEVEMENTS</b>	
Climate Change Division	16-20
Coordination and Project Implementation Division	21-23
Policy and Planning Division	24-26
Environmental Assessment Division	27-30
EIA/PER Monitoring Division	31-32
Environmental Law and Prosecution Division	33-36
Integrated Coastal Zone Management Division	37-40
Information and Education Division	41-42
Pollution Prevention and Control Division	43-47
Sustainable Development Division	48-50
National Environmental Laboratory	51-54
Living Environment Unit	55-56
Solid Waste Management Division	57-59
National Disaster Risk Reduction and Management Centre	60-69
Implementation of Schemes	70-71
Status on Implementation of Budget Measures	72
Status on Implementation of Key Actions	73-74
Risk Management, Citizen Oriented Initiatives and Good Governance	75
Implementation Plan – Director of Audit Comments	76-88
<b>Part III – FINANCIAL PERFORMANCE</b>	
Financial Highlights	90-91
Statements of Revenue and Expenditure	92-96
<b>Part IV – WAY FORWARD</b>	
Strategic Direction	98

## LIST OF TABLES

Table No.	Description	Page No.
1	Ministry Officials	10
2	Breakdown of the Workforce of the Ministry and Courses attended by Officers	13
3	EIA Applications (01 July 2018 to 30 June 2019)	27
4	PER Applications (01 July 2018 to 30 June 2019)	28
5	Summary of EIA / PER Monitoring (July 2018 to June 2019)	32
6	Summary of Cases Lodged	33
7	No. of Sensitisation and Awareness Campaigns Conducted	41
8	Status of Tickets (July 2018-June 2019)	43
9	Number of Notices issued for Period October 2018 to June 2019	45
10	Measurement of Parameters	52
11	No. of Solar Water Heaters installed Region-wise	70
12	Status of Budget Measures for Financial Year 2018/19	72
13	Status on the Implementation of Key Actions	73
14	Status on Actions taken following Performance Audit Report	76-88
15	Summary of Expenditures	91
16	Statement of Revenue and Expenditure	92
17	Statement of Expenditure- Environmental Protection and Conservation	93
18	Statement of Expenditure- Monitoring, Uplifting and the Embellishment of the Environment	93
19	Statement of Expenditure- Sustainable Development and Climate Change	94
20	Statement of Expenditure for the Solid Waste Management Division	94
21	Statement of Expenditure for the National Disaster Risk Reduction and Management Centre	95
22	Summary of Projects funded under the National Environment Fund	96

## LIST OF FIGURES

<b>Figure No.</b>	<b>Description</b>	<b>Page No.</b>
1	Coastal Protection Works carried out at Case Noyale	38
2	Coastal Protection Works carried out at Grand Bay Sunset Boulevard	38
3	Coastal Protection Works carried out at Residences La Chaux	39
4	Coastal Protection Works carried out at Baie du Tombeau	39
5	Categorisation of Tickets	44
6	Amaury- Who Cares? (L'Express 03.12.2018)	45
7	Bambous- Et sur le Bord de la Route (l'Express 01.03.2019)	46
8	Petite Riviere Noire- Matelas au Bord deL'eau (l'Express 21.12.2018)	46
9	Petit-Sable: Gênante Accumulation de Déchets! (L'Express 31.01.2019)	47
10	Health Track in Yard of John Kennedy School	56
11	Children Play Equipment	56
12	Expenditure Incurred 2018 – 2019	90

## STATEMENT FROM MINISTER



I am pleased to present the Annual Report of the Environment and Sustainable Development Division of my Ministry, which highlights the performance of the division during the fiscal year 2018/2019. In line with the Government's vision to pursue a transformative journey, my Ministry undertook significant measures, which are of critical importance for Small Island States like Mauritius. One of the most important of these initiatives relates to the inauguration of the Doppler Radar Weather Observation Station at Trou-aux-Cerfs in March 2019, a first of its kind in the region, by the Honourable Pravind Kumar Jugnauth, Prime Minister, who emphasised that the station is a matter of pride for the country. Our early warning system has also been reinforced through the acquisition and installation of Automatic Weather Stations across the island, as well as in Rodrigues, to obtain real time data on flash floods in regions which are vulnerable.

With climate change dramatically altering our environmental landscape and challenging our resilience, Government has, during the past 3 years, secured grant funding to the tune of around USD 62.5 million (Rs 2.2 billion) for environmental measures. During the financial year, Rs 70 Million have been injected into the coastal rehabilitation programme for coastal protection works as well as beach rehabilitation works at 9 priority eroded sites across the island. Another bold measure undertaken was the start of the rehabilitation of Mon Choisy public beach in December 2018 and the installation of an artificial reef, an innovative erosion control measure in Mauritius. Overall, national efforts in the environmental sector have enabled Mauritius to shift from the 13<sup>th</sup> to the 16<sup>th</sup> country with the highest disaster risk and from the 7<sup>th</sup> to the 10<sup>th</sup> most exposed country to natural hazards, out of 172 countries worldwide, according to the World Risk Report 2018.

In terms of legislative framework, my Ministry has been instrumental in the enactment of the Environment Protection (Display of Fuel Consumption and CO<sub>2</sub> Emission Label) Regulations in June 2019, which allows people to make informed choices with respect to cost savings on fuel and reduced vehicular emissions when they purchase eco-friendly and energy-efficient vehicles.

The management of solid wastes in our country is another issue of great importance. Apart from the saturation of our only landfill scheduled for May 2020, another major challenge is illegal dumping. My Ministry came up with two temporary storage sites for construction and demolition wastes, which can be used for backfilling or for recycling into aggregates. Focus has also been laid on the asbestos treatment programme in ex-CHA houses in order to dismantle and safely dispose of this environmental hazard.

I am thankful to all the staff of my Ministry for their commitment and look forward to their maintaining the same dedication in the achievement of the mission of the Ministry, in line with transformational and sustainable development.

  
**The Hon. Etienne Sinatambou**  
**Minister**

## STATEMENT FROM PERMANENT SECRETARIES

The Environment and Sustainable Development Division of the Ministry is issuing its third Annual Report, this time for the financial year 2018/2019. Highlighting the achievements of the Ministry is of utmost importance as it depicts good governance, transparency and accountability. The past financial year has been a progressive one for the Ministry with a new dynamism to protect and manage our environmental assets, mainstream sustainable development principles, manage our solid wastes, enhance our resilience to disasters as well as conserve and rehabilitate our beaches.

Ensuring environmental protection, planning, enforcement and awareness-raising remained the primary focus of the Ministry. In our fight against the use of plastic bags, enforcement of the Environment Protection (Banning of Plastics Bags) Regulations 2015 has enabled the seizure of 83,569 non-authorised bags since July 2018 to June 2019. Changing the mindsets of people is a major instrument to bring about long-lasting effect towards environmental stewardship. This is why awareness raising is ongoing by Officers of the Ministry. During this financial year, some 167 activities, including 19 activities to mark International events, have been organised to sensitise various target groups on environmental issues. It is estimated that some 150,000 have been reached out through these campaigns.


The handling of complaints relative to the environment has been another core activity of the Ministry. Indeed, during this period the Ministry has processed 1137 complaints through the Citizen Support Portal and 1109 complaints via other media. Another milestone in our strive for a clean environment is the development of an Action Plan on Eyesores and Barelands, which has been agreed during the National Environment Commission held on 17 September 2018 under the chair of the Honourable Prime Minister. A Monitoring Committee has been set up to oversee the implementation of the Action Plan. For the financial year 2018/2019, the Ministry also undertook the cleaning and embellishment of some 360 places of worship and other public sites across the island during events celebrated at national level as well as in various degraded sites.

With an increasing population and changing lifestyles, the generation of solid wastes in Mauritius is unfortunately increasing. This has decreased the lifetime of our only landfill, which is expected to be saturated by May 2020. Faced with such a situation, the Ministry had to secure the services of a Consultant in December 2018 for recommendations on vertical expansion works at Mare Chicose. This option is expected to provide disposal capacity for at least 10 years. With the operation of the Interim Hazardous Waste Storage Facility and the e-wastes collection campaign, over 155 tons of hazardous wastes and around 500 tons of e-wastes have been diverted from our landfill respectively, which will be exported/sent for recycling to licensed facilities.

The fight for a cleaner, greener and safer Mauritius is nonetheless still ongoing. However, for this past year, we wish to seize this opportunity to extend our appreciation to the Staff of the Ministry for their continuous dedication and unflinching support in the implementation of environmental policies and projects for a better Mauritius.

**Mr Roodradeo Bhugwant**  
Permanent Secretary

**Mr Nazir Soobratty**  
Permanent Secretary



PART I  
ABOUT THE MINISTRY

## VISION

To achieve a cleaner, greener and safer Mauritius in a sustainable manner, through protection and management of our environmental assets, mainstreaming sustainable development principles in different sectors of the economy, solid and hazardous waste management, enhanced resilience to disasters, and conservation and rehabilitation of beaches.

## MISSION

- Devise appropriate legal and policy framework regarding environment related issues such as climate change, solid and hazardous waste management, disaster risk reduction and beach management to effectively respond to emerging challenges;
- Incorporate climate change adaptation and mitigation measures to ensure sustainable development initiatives;
- Preserve our beaches through integrated coastal zone management;
- Devise effective waste management policy to minimise the negative impacts of solid and hazardous wastes; and
- Ensure effective disaster preparedness and response to enhance the safety and security of the citizens.



## ROLES AND FUNCTIONS OF THE MINISTRY

Our key primary responsibilities are as follows:

- Consolidate the enabling legal and institutional set up;
- Co-ordinate, develop and implement policies, strategies and action plans
- Process applications for environmental licences;
- Maintain and preserve a high quality environment;
- Enforce laws and standards through established protocols and in close collaboration with relevant enforcing agencies;
- Ensure sound environmental planning, education and guidance;
- Devise effective waste management measures to minimise the negative impacts of solid and hazardous wastes disposal;
- Coordinate activities for an integrated management of Coastal Zones;
- Ensure disaster risk reduction, preparedness and response to enhance the safety of the citizens of the Republic of Mauritius; and
- Implement provisions and decisions under relevant multilateral international and regional agreements.

## MINISTRY OFFICIALS

**Table 1: Ministry Officials**

Title/Directorate	Contact Details
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Officer in Charge National Disaster Risk Reduction and Management Centre	<b>Mr. Khemraj SERVANSING</b> Phone: (230) 207-3900 Fax: (230) 207-3927 Email: dcpkservansing@govmu.org
Director Solid Waste Management Division	<b>Mr. Prakash KOWLESSER (On Leave)</b> Phone: (230) 201-2741 Fax: (230) 213-0654 Email: pkowlessers@hotmail.com  <b>Mr. Bhaguthsing Beerachee (Ag. Director)</b> Phone: (230) 201-2741 Fax: (230) 213-0654 Email: bbeera@hotmail.com
Ag. Director Mauritius Meteorological Services	<b>Mr. Bhye Muslim HEETUN</b> Phone: (230) 686-1031 Fax: (230) 686-1033 Email: meteo@intnet.mu
General Manager Beach Authority	<b>Dr. Dhuneeroy BISSESSUR</b> Phone: (230) 212-0059 Fax: (230) 212-0060 Email: beachauthority@intnet.mu

## GENDER STATEMENT

Gender inequalities and different gender roles, needs and preferences influence the different ways in which young, adult and elderly males and females experience the impacts of environmental pollution and climate change. Gender equality is both a development goal and a condition for the achievement of sustainable development. Following the adoption of the National Gender Policy Framework by the Ministry of Gender Child Development and Family Welfare, a sectoral gender policy statement of the Ministry of Social Security, National Solidarity and Environment and Sustainable Development (Environment and Sustainable Development Division) was prepared. This Ministry has already taken initiatives to mainstreaming gender in environment sector.

The Ministry is mainstreaming gender in the climate change, disaster and environment sector. The approach being adopted to address these gender issues are through sensitisation, capacity building and training. Simulation exercises are also carried out to empower women in disaster preparedness. With the Rs 200,000 being allocated, a workshop on Women Empowerment in Disaster Risk Reduction and Enhancing Resilience against Extreme Weather was organised, jointly by the Mauritius Meteorological Services and the National Disaster Risk Reduction and Management Centre, to sensitise women and representatives of civil societies on early warning and extreme weather and to build capacity in disaster management. A total of 122 participants attended the workshop, including 55 women.

It is to be noted that gender is mainstreamed in climate change and sustainable consumption and production and international funding are used for such projects. For example, under the Switch Africa Green Project:

- (i) 40 fisherwomen were provided training and capacity building in the bio cultivation of Gombava plants and sustainable agricultural practices. They have also benefitted from capacity building exercises for the production of value added agro-products from the Gombava plant. They have been empowered to start up their own green business and therefore develop an alternative sustainable livelihood for themselves; and
- (ii) Training was provided to around 800 potential entrepreneurs to set up their own green businesses and create sustainable livelihoods.

## ABOUT OUR PEOPLE

The workforce of the Ministry comprises diverse administrative, technical and professional competencies and is committed to address the environmental and developmental challenges facing our country and to perform at set standards. The key competencies, abilities and expertise possessed by the employees are in various fields as submitted hereunder:

- Public Policy and Public/Business Administration and Management;
- Ecology, Environmental Planning, Microbiology, Biotechnology Agriculture
- Environmental and Coastal Management, Water Resource Management;
- Climate Change Economics, Environmental Science, Environmental Economics, Environmental Law;
- Geology, Marine Science, Urban Planning, Sustainable Development;
- Civil Engineers registered as Professional engineer with the Council of Registered Professional Engineers of Mauritius;
- Computer Science, computer engineering, Information Systems;
- Journalism, Public Relations and Communication, Resource Management, Project Management and
- Agriculture, Botany, Biochemistry, Biology, Chemistry, Engineering (Chemical/Civil/Environmental).

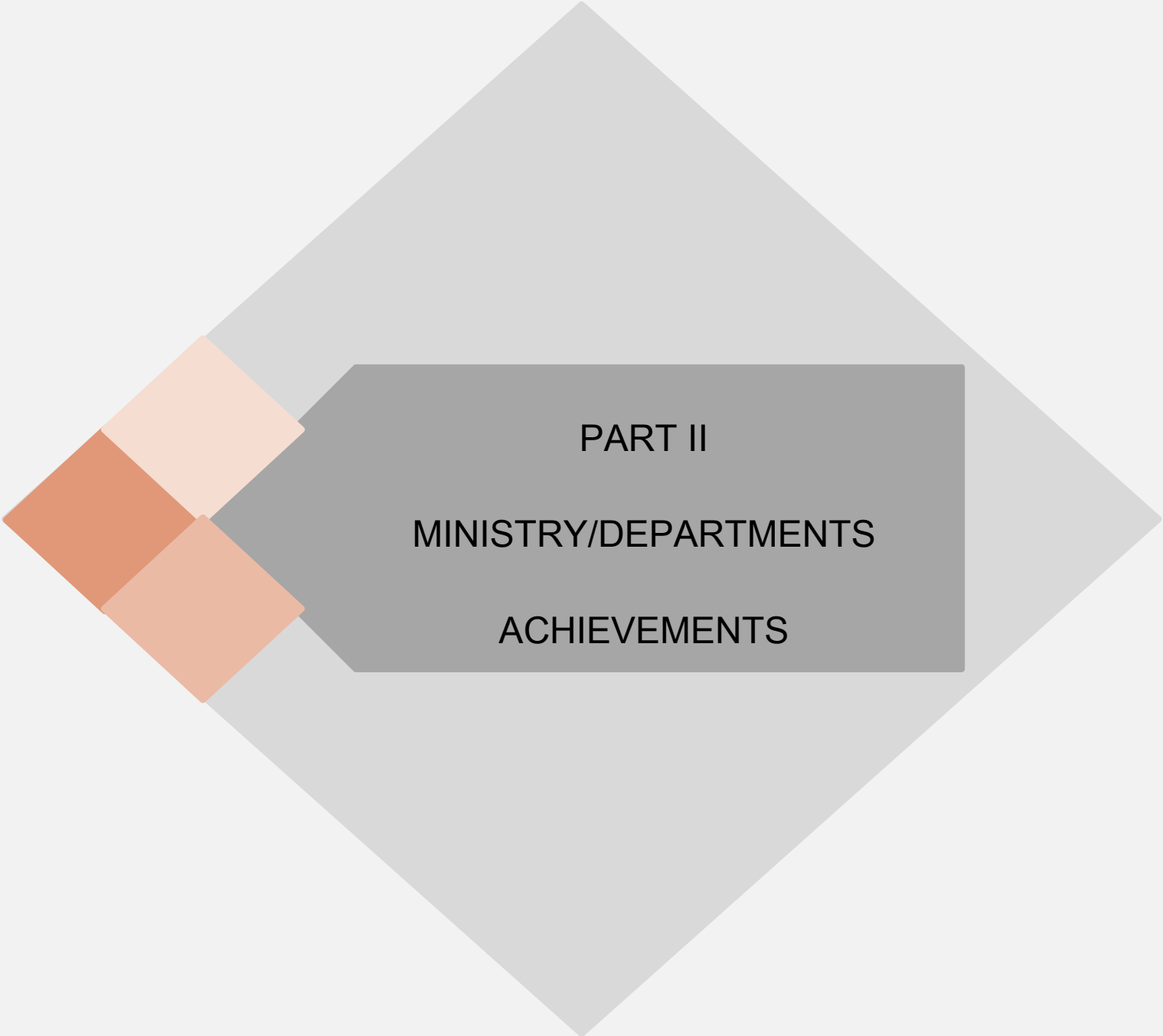
Appropriate training is imparted to the staff with a view to increasing employee abilities and skills, positive attitude and commitment towards work.

Thus, a more highly skilled and flexible work force is a major factor for high productivity and quality performance.

**Table 2: Breakdown of the Workforce of the Ministry and Courses attended by Officers**

SN	Particulars –July 2018 to June 2019	Number
	<b><u>Officers in Post</u></b>	
1.	a. Inspectorate Cadre (Living Environment Unit – LEU)	14
	b. Workmen’s Class	602
	c. Department of Environment	81
	d. General	142
	e. NDRRMC	

SN	Particulars –July 2018 to June 2019	Number
	f. Others (STM)	6
	g. Solid Waste Management Division: -	8
	i) Administrative Cadre : 2	
	ii) Technical Cadre: : 20 ((1 on leave without pay and on unauthorised absence)	
	iii) General : 25	
	iv) Others (STM) : 2	
	<b>Total : <u>49</u></b>	
	<b>Total number of officers in post</b>	<b><u>902</u></b>
2.	Officers on Contract Solid Waste Management Division <b>Total</b>	4 19 <b><u>23</u></b>
3.	Officers attended Overseas Training / Mission / Seminars / Workshops / Conferences	72
4.	Officers attended Training Courses run by the Civil Service College Solid Waste Management Division <b>Total</b>	44 22 <b><u>66</u></b>



PART II

MINISTRY/DEPARTMENTS

ACHIEVEMENTS

## CLIMATE CHANGE DIVISION

### 1.0 Roles and Functions of the Division

The roles and functions of the Division are to:

- Develop a climate change mitigation and adaptation framework;
- Coordinate national, regional and international projects in relation to climate change and sea level rise;
- Conduct and report GHG emission inventories;
- Devise and coordinate the implementation of an inter-sectoral climate change monitoring programme and its reporting;
- Identify and coordinate Research and Development priorities associated with climate change and sea level rise;
- Follow up on matters pertaining to climate change in national, regional and international fora; and
- Conduct Public Outreach Programme.

### 2.0 Main Achievements for Year June 2018 – July 2019

#### (a) Capacity Building / Training Sessions

- (i) Under the Third National Communication project, different target groups namely, youths; women community; private sector and businesses; Non-Governmental Organisations and public officials were sensitised and trained on vulnerability assessment and adaptation from 12 to 19 July 2018. A total of 250 participants attended the 5 training workshops;
- (ii) Capacity building workshop on the use of Geographical Information System (GIS) technology, specifically on “Geospatial Technique for Assessing Land Use, Land Use Change and Forestry” were also undertaken for some 20 stakeholders from 12 to 16 November 2018 under the Biennial Update Report project; and
- (iii) Capacity building of some 20 relevant stakeholders for the preparation of Bankable Projects to Access Climate Finance was undertaken from 23 to 24 August 2018.



## **(b) Resource Mobilisation / Technical Assistance**

The Ministry secured grant funding for the implementation of the following climate change related projects:

- (i) Technical support to the tune of USD 325,000 was secured in September 2018 from the Green Climate Fund through Climate Technology Centre Network (CTCN) to assess the Port's vulnerability with a view to enhance the port's resilience to the adverse impacts of climate change; and
- (ii) The preparation of the Fourth National Communication (FNC), assistance to the tune of USD 500,000 was secured from the Global Environment Facility (GEF) through UN Environment.

## **(c) Signature of Agreement**

The Ministry signed an agreement with the European Union (EU) in December 2018, which is an important partnership in addressing climate change adaptation and mitigation in the Republic of Mauritius. The signed agreement also defines a Joint Monitoring Framework (JMF) on Climate Change, reflecting the indicative areas of collaboration and partnership with the EU. The JMF aims to progress on 6 targets by 2030 namely:

- reduce greenhouse gas emissions;
- improve resilience of the coastal zone;
- implement an effective national disaster risk reduction strategy;
- enhance resilience against high intensity rainfall events in flood prone areas; and
- enhance native forest cover and tree plantation for an enhanced sink capacity and to increase use of renewable energy sources by 2030.

## **(d) Implementation of Projects**

### **(i) Under the Third National Communication project, the following were developed:**

- (a) User friendly tools (Software) for undertaking climate change 'Vulnerability Assessment and Adaptation (VAA)' in 7 key sectors (agriculture, water, coastal zone, fisheries, biodiversity, infrastructure and health) (January 2019); and
- (b) Sensitisation Toolkits (Manual) for different target groups (Youths; Women Community; Private Sectors and Businesses; and Non-Governmental Organisations) to combat climate change (June 2019).

(ii) **Adapt'Action Programme**

- (a) Adapt'Action programme is a technical assistance secured following the Paris Climate Summit in 2017. Technical support worth EUR 2 Million was received from the Government of France to implement the Mauritius Nationally Determined Contributions and Action Plan. Funding line is supporting various vulnerability assessment studies in 3 main sectors namely coastal zones, land drainage and disaster risk reduction;
- (b) Following the recruitment of International Consortium by AFD, the implementation of the Adapt'Action programme started on 25 September 2018. Six half day consultation meetings and working sessions were conducted with various stakeholders including Local Authorities, Force Vives, Hotels and other economic and social actors of the region were held by Consultants from 19 to 28 March 2019 at Flic en Flac, Belle Mare, Grand Baie, Nouvelle France, Bel Ombre and Port Louis, respectively;
- (c) A first draft version of the report on the Climate Change Vulnerability and Risk Assessment (CCVRA) of the 6 priority sites including draft action plan and summary paper were submitted by Consultants (DAI) in May 2019.

(iii) **Biennial Update Report**

- (a) Recruitment of team of experts was finalised in August 2018 and works started in February 2019; and
- (b) To date, the International Consultants have fielded 3 missions in Mauritius to impart capacity building workshops on the 2006 IPCC guidelines, mitigation assessment and MRV for the following sectors, namely energy industries, energy (other sector) and industrial processes and product use; transport; agriculture, forestry and other land use (AFOLU); and waste.

**(iv) Nationally Appropriate Mitigation Actions (NAMAs)**

A Technical Expert from UNEP DTU Partnership on the Nationally Appropriate Mitigation Actions (NAMA) conducted a capacity building on Enhanced Transparency Framework for 15 relevant stakeholders in April 2019.

**(e) Mission of Experts for the Formulation of Project Proposals**

(i) Formulation of a Project Identification Form (PIF) for the Capacity Building Initiative from Transparency (CBIT) Project in Mauritius by UNDP Expert, Mr Robert Kelly was held from 18 to 22 February 2019; and

(ii) Review of the project proposal for the National Adaptation Plan by GCF consultant Brian Harding, from 25 February to 1 March 2019.

**(f) Climate Change Education, Training and Public Awareness**

In line with Article 6 of the UN Framework Convention on Climate Change (UNFCCC), climate change, Education, Training and Public Awareness (ETPA) a series of sensitisation activities have been carried out as follows:

(i) 5 talks and film projections on climate change were delivered to disabled people, beach users, secondary school students and in community centres in the context of World Environment Day 2018;

(ii) In the context of Ozone Day 2018, exhibition on climate change was mounted at the City Council of Port Louis from 17-21 September 2018; and

(iii) In the context of Earth Day 2019, 2 talks were delivered to senior citizens on Climate Change.

**(g) Challenges**

Climate Change remains one of the major challenges for Mauritius. Climate change and its adverse impacts are among the most serious hurdles in the achievement of Sustainable Development Goals. Climate sensitive sectors on which the socio economy depends are likely to

be severely impacted. As a result, mainstreaming climate change in key sectors and mobilisation of resources to enhance resilience will also be a serious challenge.

**(h) Strategic Direction**

- To enhance climate change adaptation and mitigation policies through formulation and implementation of the National Adaptation Plan (NAP) and the Nationally Appropriate Mitigation Actions (NAMA). Key sectors identified under the NAP include tourism and coastal zone, infrastructure, disaster risk reduction, agriculture and fisheries.
- Review of Nationally Determined Contribution (NDC) which need to be submitted to the UNFCCC Secretariat prior to the 26<sup>th</sup> Conference of Parties in 2020; and vulnerability assessment and identification of adaptation options in key sectors.

## COORDINATION AND PROJECT IMPLEMENTATION DIVISION

### 1.0 Role and Functions of the Division

The main duties of the Division are as follows: -

- Ensure the effective implementation of environmental projects;
- Implement/coordinate national, regional and international environmental projects such as those funded by development partners / donors such as UNDP/GEF, UNE and regional organisations; and
- Coordinate the inputs of the technical Divisions within the Department of Environment for budget measures.

### 2.0 Major Achievements for Period July 2018 to June 2019

#### (a) The National Environment Commission (NEC)

The 22<sup>nd</sup> meeting of the National Environment Commission (NEC) was held on 17 September 2018, under the chairmanship of the Honourable Prime Minister Pravind Kumar Jugnauth. The National Environment Commission, set up under Section 5 of the Environment Protection Act is the highest level of coordination between public departments, local authorities, and other government organisations to discuss and decide on national environmental policies and strategies. The division was tasked to coordinate the identification of pertinent environmental issues in consultation with key stakeholders, prepare the relevant documents for tabling to the NEC, follow and monitor the implementation of decisions taken at the NEC. Pertinent issues discussed during the meetings were mainly focused on:

#### (i) Disaster Risk Reduction Measures

Some 17 disaster risk reduction measures were elaborated to address the problems of flooding, landslide, coastal inundation and high waves.

#### (iii) National Solid Waste Management Programme

A series of measures to address the increasing amount of solid wastes being generated and to extend the lifetime of the landfill which is nearing saturation was elaborated.

#### (iv) Multilateral Environmental Agreements Coordinating Committee

The crucial mandate of the MEAs Coordinating Committee was discussed and the active engagement of focal ministries and institutions to deliver as per the mandate of the Committee was advocated.

(v) Coastal Protection, Landscaping and Infrastructural Works

The progress of the various coastal protection works across the island was discussed.

(vi) Implementation of the Climate Change Adaptation Policy Framework and Nationally Determined Contributions (NDC)

Resource mobilisation for the implementation of the Mauritius NDC was discussed.

(vii) Implementation of Projects after the Granting of EIA Licences

The Economic Development Board was requested to inquire the reasons of slow implementation of the projects after the granting of the EIA licences.

(viii) Eyesores and Barelands

An action plan to address the long-standing issue of barelands was discussed.

(ix) Maintenance of Rivers

Constraints and challenges as regards the cleaning and desilting of rivers and a proposed way forward to address the constraints and challenges were discussed.

(x) Asbestos and its Safe Disposal

The dismantling of houses containing asbestos and their safe disposal was discussed.

**(b) Audit of Rivers and Watercourses that cause Recurrent Flooding**

The Terms of Reference (TOR) were prepared and finalised, in consultation with all key stakeholders, to hire consultancy services for an audit of rivers and watercourses to assess their carrying capacity, using a catchment-based approach. This project is one of a series of measures taken by Government to address the problem of flooding. The approval of the National Environment Fund (NEF) Board was

secured on 25 January 2019. Tender was launched on 24 April 2019 and was closed on 31 May 2019. 4 bids were received. The project cost amount to Rs 12 Million and is expected to last over 8 months.

**(c) Implementation of the Global Fuel Economy Initiative (GFEI) - Promulgation of the Environment Protection (Display of Fuel Consumption and CO<sub>2</sub> Emission Label) Regulations 2019**

The Environment Protection (Display of Fuel Consumption and CO<sub>2</sub> Emission Label) Regulations 2019 were promulgated on 25 May 2019 and came into force on 1<sup>st</sup> June 2019. They provide for a motor car label to be affixed on all new cars on sale, so as to provide information to car buyers on the fuel consumption and CO<sub>2</sub> emission of the motor car, amongst others. This allows people to make informed choices on the purchase of more eco-friendly and energy-efficient vehicles, which will allow car owners to make cost savings on fuel, reduce vehicular emissions and contribute to mitigating climate change and global warming. The car dealers have been given 3 months moratorium to display the label. A GFEI Communication Campaign was also organised during the month of January 2019, whereby one clip focusing on vehicular emissions was aired (at peak time) on three MBC channels.

**(d) UNDP / GEF project “Mainstreaming Biodiversity into the Management of the Coastal Zone in the Republic of Mauritius”**

A team of consultants, FCG ANZDEC Ltd from New Zealand has been hired to, amongst others, carry out a survey of coastal and marine Environmentally Sensitive Areas. Mapping exercise is underway.

**(e) Follow-up to the NEF Roundtable**

Coordination on status of formulation/implementation of the projects post NEF roundtable is being carried out.

## POLICY AND PLANNING DIVISION

### 1.0 Role and Functions of the Division

The main duties of the Division are to:

- formulate and review policies on key environmental issues;
- coordinate and follow up on the implementation of the conventions and protocols under the Multilateral Environmental Agreements which the Republic of Mauritius has signed;
- finalise and publish guidelines related to environmental impact assessment for environmental planning;
- implement the Environment Protection (Banning of Plastic Bags) Regulations 2015; and
- provide inputs on bilateral cooperation.

### 2.0 Major Achievements for Period July 2018 to June 2019

#### (a) The Multilateral Environmental Agreements Coordinating Committee (MEACC)

The Multilateral Environmental Agreements Coordinating Committee (MEACC), under the chairmanship of the Honourable Minister, has been set up under Section 12A of the Environment Protection Act. The MEACC is responsible to coordinate the implementation of MEAs by the relevant Ministries, departments, public bodies and organisations.

One of the main functions of the MEACC is to take cognisance of the outcome of meetings on MEAs at regional and international level as well as determine the measures and actions to be taken at national level. It is to be highlighted that though the MEACC was set up since 2008, it is only under this Government that the meetings were held. 7 MEACC meetings have been held during the period July 2018 – June 2019. The following have been achieved through the regular holding of the MEACC:

- 4 MEACC Sub-Committees established on Marine, Climate Change, Chemical and Biodiversity clusters;
- 11 Sub-Committee meetings held for period July 2018 to June 2019;
- 18 firm MEA Liaison Officers and 19 alternate liaison Officers designated;
- 39 briefs on implementation of MEAs compiled;
- 50 decisions of COPs / MOPs / International Meetings compiled;



- 43 grant-funded projects related to MEAs compiled; and
- 16 Calendar of events received for 2018 and 82 Calendar of events received for 2019.

### **(b) Environmental Policies**

The Division was responsible for the preparation of policies on:

- Stone Crushing Plants- Proposal made to reduce buffer zone around Stone Crushing Plants from 1 km to 0.5 km. A Technical Paper prepared on “Stone Crushing Plants and Sensitive Land Use” and submitted to the Ministry of Housing and Lands.
- Vehicle labelling to promote energy efficient cars and to reduce emissions from the road transport sector through the Environment Protection (Display of Fuel Consumption and CO2 Emission Label) Regulations 2019
- The replacement of casuarina trees within the dynamic beach zone
- Urgent beach rehabilitation works to be carried out without the requirement of an Environment Impact Assessment following adverse weather conditions
- Recommendation for the safe handling of manure from livestock wastes implemented through the formulation of voluntary standard MS196: Specifications for treated farm animal manure

### **(c) Implementation of the Environment Protection (Banning of Plastic Bags) Regulations 2015**

During the period July 2016 to June 2019,

- 76 importers of exempted plastic bags were registered;
- 4 clearances were granted for the import of biodegradable and compostable plastic; and
- 5, 167,300 biodegradable / compostable plastic bags were imported;
- 26,781,504 biodegradable / compostable plastic bags were manufactured (figures for Jul-Dec 2018).
- 148,407,522 exempted plastic bags manufactured by registered manufacturers (excluding biodegradable/compostable plastic bags) (figures for Jul-Dec 2018); and
- 31,633,523 exempted plastic bags imported by registered importers (excluding biodegradable/compostable plastic bags) ((figures or Jul-Dec 2018).

**(d) Development of a Shared Environment Information System (SEIS) Project for an Indicator Reporting Information System (IRIS)**

A Small Scale Funding Project was financed by the European Commission, through the United Nations Environment (UNE), to the tune of USD 16,000 (Rs 534,000). The duration of the project was from November 2016 to June 2019. The aim was to build the capacity of countries, including Mauritius, for data and knowledge sharing by Ministries and other relevant agencies at national level to support State of Environment (SoE) reporting and other reporting processes, as well as develop and implement a Shared Environmental Information System (SEIS) for decision-making. The following have been achieved under the project:

- 50 participants from various Ministries were trained on Indicator Reporting Information System (IRIS) on 11-12 July 2018 and 34 participants were trained to use IRIS features during an in-depth training workshop held on 31 January and 4 February 2019;
- Focal points and alternate members were nominated from 41 Institutions;
- Indicator Reporting Information System (IRIS) was successfully deployed on the Government Online Centre (GOC) in Mauritius;
- 26 datasets from Digest of Statistics was uploaded on the open data portal; and
- A SEIS Coordinating Committee has been set up to collect, analyse and publish quality assured information in a timely manner using IRIS platform.

## ENVIRONMENTAL ASSESSMENT DIVISION

### 1.0 Role and Functions of the Division

The role and functions of the Division are to:

- Ensure timely processing of EIA and PER applications in line with the provisions under Part IV of the Environment Protection Act; and
- Ensure that potential environmental impacts foreseen at the project inception stage are adequately addressed and mitigated at the project design and implementation stage.

**The duties of the Division are as follows:**

- Processing of EIA and PER applications;
- Follow-up on appeal cases at the Environment and Land Use Appeal Tribunal and Supreme Court cases;
- Processing of Morcellement Board applications;
- Processing of Land Conversion Permit applications;
- Processing of requests for views from the Economic Development Board (EDB) (PDS and Smart Cities), Local Authorities and other Authorities; and
- Processing of Requests from proponents.

### 2.0 Major Achievements for Period July 2018 to June

For the period 1 July 2018 to 30 June 2019, the Environmental Assessment (EA) Division has processed EIA and PER applications as follows:

**Table 3: EIA Applications (01 July 2018 to 30 June 2019)**

<b>EIA APPLICATIONS</b>	
<b>No. of new applications received</b>	37
<b>No. of EIA licences issued,</b>	41
<b>Out of which, No. of exempt undertaking received</b>	3
<b>No. of applications rejected</b>	4
<b>No. of applications set aside</b>	0

**Table 4: PER Applications (01 July 2018 to 30 June 2019)**

<b>PER APPLICATIONS</b>	
<b>No. of new applications received</b>	39
<b>No. of PER approval granted</b>	48
<b>No. of applications rejected</b>	5
<b>No. of applications set aside</b>	0

Major development projects for which EIA licences were issued included hotel construction and renovation, morcellements, distilleries, clinics and shipyard. Moreover, following Government's decision to implement the Property Development Scheme and Smart City Projects as well as develop offshore aquaculture as a new economic pillar, EIA licences have been issued for the following major projects:

- a) Proposed Project for the creating of a Distillery of essential oil for tourism purposes by Vetilang Ltd;
- b) Proposed Mauritius and Rodrigues Submarine Cable (MARS) project by Mauritius Telecom Ltd;
- c) Proposed Coastal Protection, Landscaping and infrastructural works at St Martin site by Ministry of Environment;
- d) Proposed Extension works at Tropical Attitude Hotel Trou d'Eau Douce by Attitude Property Ltd;
- e) Proposed Royal green luxury elderly apartment and frail care centre at Reduit Triangle, Moka;
- f) Proposed Dredging at Grand Courant Channel Ile aux Cerfs by Loisirs des Iles Ltee; and
- g) Proposed hotel Project under the Invest Hotel Scheme at Belle Mare by B59 Ltd, amongst others.

The Ministry also assessed EIA applications for government projects especially for coastal protection, landscaping and infrastructural works, desalination plants in Rodrigues as well as for road infrastructure projects being implemented by the Road Development Authority. The increasing

demand for EIA licences can be attributed to the promotion of a conducive business environment and a positive investment climate by Government, confirming the country's position as a well-established business destination for investors. It goes without saying that the EIA mechanism has been instrumental not only by boosting economic development by attracting Foreign Direct Investment, but also in creating employment, while concurrently ensuring the promotion of sustainable development.

**(a) Appeal Cases at Environment and Land Use Appeal Tribunal and Supreme Court**

Officers of the EA Division followed up cases that have been lodged at the level of the Tribunal, Supreme Court and the Privy Council. Their main duties were to, amongst others:

- Liaise with SLO for legal assistance;
- Prepare comments on grounds of appeal /statement of case / answers to particulars, prepare briefs, arrange for copies of document;
- Swear affidavits;
- Attend working sessions with the State Law Office;
- Attend proforma / hearing / ruling; and
- depone as witness.

**(b) Projects considered at Fast Track Committee**

It is to be noted that several large investment projects warranting an EIA licence or PER approval are being facilitated at the level of the Fast Track Committee set up under the Economic Development Board (EDB), which is chaired by the Prime Minister. 4 Fast Track Committees were held for the period 1 July 2018 to 30 June 2019.

**(c) Other Applications and Clearances**

The Division has also processed 550 Morcellement Board applications, 500 applications for Land Conversion Permits, 170 environmental clearances, including applications for PDS Certificates and Smart Cities (Letter of Comfort).

**(d) EIA E-Licensing Project**

Announced as a budgetary measure, the e-licensing system for EIA and PER will soon come into operation. The e-licensing system will not only enhance a positive business environment but will also contribute to maintain a high standard of environmental protection in our quest for sustainable development. Currently, the timeframe for processing an EIA Application is around 99 days, while that for a PER is around 40 days. Through the e-Licensing Project, the aim is to reduce processing time for both EIA and PER. This modern system will enable a more efficient and rapid permitting procedure and curtail delays in the implementation of development projects by eliminating administrative barriers.

Henceforward, EIA and PER procedures will be paperless as all requests will be submitted, processed and approved online. A built-in audit trail and associated electronic payment mechanism will also be included so as to create a conducive business climate. Applicants will be able to request for an EIA Licences or PER Approval at anytime and anywhere in the world. In so doing, the system will facilitate business and investment. The e-licensing platform will also substantially improve interaction between public sector agencies for the sharing of EIA and PER-related information. In addition to allowing the seamless flow of information across public sector bodies, the platform will also enhance the transparency of the licensing system, in line with good governance principles.

## EIA/PER MONITORING DIVISION

### 1.0 Roles and Functions of the Division

With a view to reinforce monitoring of undertakings at the level of the Ministry, the Department of Environment was re-engineered and an EIA / PER Monitoring Division was set up in March 2013. As such, the main objective of the Division is to ensure compliance to the conditions imposed in Environment Impact Assessment (EIA) Licences and Preliminary Environment Report (PER) Approvals so as to avoid any potential adverse impacts during the whole life-cycle of a particular project. The Division is also responsible for the implementation of two conventions namely:

- (i) The Stockholm Convention on Persistent Organic Pollutants (POPs); and
- (ii) The Minamata Convention on Mercury.

The main duties of the Division with regards to EIA/PER monitoring are listed hereunder:

- To conduct EIA/PER monitoring exercises so as to determine compliance with consent conditions;
- To process Environmental Monitoring Plan after an EIA Licence has been issued;
- To recommend appropriate remedial and enforcement measures to the EIA/PER Monitoring Committee in case of non-compliance to consent conditions;
- To prepare and update a database on projects for which an EIA Licence / PER Approval has been issued;
- To prepare and submit bi-annual monitoring reports to the Minister; and
- To service the EIA/PER Monitoring Committee (Section 28A under the Environmental Protection Act).

### 3.0 Major Achievements for Period July 2018 to June 2019

#### (a) EIA / PER monitoring

Pursuant to per Section 28A(2)(e) of the Environmental Protection Act, the EIA / PER Monitoring Committee has prepared two bi-annual reports, which summarises monitoring of EIA and PER projects for the period July 2018 and June 2019. The main findings of the reports are listed in Table 5 below:

**Table 5: Summary of EIA / PER Monitoring (July 2018 to June 2019)**

EIA Projects		PER Projects	
Item	Total	Item	Total
No. of EIA undertakings monitored	204	No. of PER undertakings monitored	56
No. of site monitoring	88	No. of site monitoring	26
No. of EMPs approved	38		
No. of non-compliances observed	70	No. of non-compliances observed	9
No. of non-compliances rectified	31	No. of non-compliances rectified	2
No. of eyesore abatement notices issued in collaboration with other authorities	376	No. of notices issued	0
No. of projects at prosecution level	2	No. of projects at prosecution level	0

**(b) Capacity Building / Training Sessions**

Capacity building was conducted with relevant stakeholders on auditing in the energy sector. Technical assistance was obtained from the Climate Technology Centre Network (CTCN), and the Council for Scientific and Industrial Research (CSIR) from South Africa. Under this assistance, energy audit of Omnicane St Aubin Power Plant was undertaken from 19 to 20 November 2018. Training of 10 participants on Energy Performance of Power Plants was carried out from 21 to 23 November 2018. Training of 25 participants on best practices for reducing Greenhouse Gas (GHG) emitting potential of the energy sector project was also undertaken by the CSIR on 11 to 12 July and 15 to 16 July 2019.

**(c) Stockholm Convention on Persistent Organic Pollutants (POPs)**

- National report under Article 15 - National Report for Mauritius was submitted on 05 March 2019 to the Secretariat of the Convention; and
- Assist in the preparation of Project Framework Document and Child Project on Implementing Sustainable Low and Non-Chemical Development in SIDS (ISLANDS) - Project was approved for funding by GEF to the tune of Rs 157.5 Million (USD 4.5 million).



## ENVIRONMENTAL LAW AND PROSECUTION DIVISION

### 1.0 Roles and Functions of the Division

The roles and functions of the Division are to:

- Ensure protection of the environment by reviewing/amending the Environmental Protection Act 2002 and formulating new environmental standards /updating existing environmental standards;
- Ensure compliance with the Environment Protection Act 2002 through prosecution of environmental offences;
- Encourage collection of PET bottles for recycling through the PET bottles Permitting System and working in collaboration with stakeholders to increase collection of used PET bottles;
- Provide inputs to the different Trade Agreements at the level of the Ministry of Foreign Affairs and International Trade namely for the TISA (Trade in Services Agreement Negotiations), COMESA-EAC-SADC Tripartite, TOAM (Trade Obstacle Alert Mechanism) and the Environmental Goods Agreement (EGA);
- Provide inputs to the Mauritius Standards Bureau aiming at developing Mauritian standards in line with the ISO standards;
- Seek legal assistance from State Law Office and provide comments on affidavits in matters which are at Supreme Court; and
- Liaise with concerned Division and provide assistance for preparing statement of case in connection with appeal cases before the Environment Land Use and Appeal Tribunal.

### 2.0 Major Achievements for Period July 2018 to June 2019

**Table 6: Summary of Cases Lodged**

	<b>Number of Cases Lodged</b>	<b>Fines (Rs.)</b>
Illegal supply of banned plastic bags	57 cases	Rs 26 200
Noise	1	Nil (Case dismissed)
Eyesore Abatement Notice	1	Nil (Case dismissed)
<b>Total</b>	<b>59</b>	<b>Rs 26 200</b>

## 2.1 Amendments to Part B of the Fifth Schedule of the EPA 2002

- a. Proclamation of the Environment Protection (Amendment of Schedule) Regulations 2018 to amend item 42 of the fifth schedule of the EPA 2002 (Temporary Stone crushing plant);
- b. Proclamation of the Environment Protection (Amendment of Schedule) Regulations 2019 to amend items 6, 7, 12 and 20 of the fifth schedule of the EPA 2002 (Projects to be undertaken in the island of Agalega); and
- c. Proclamation of the Environment Protection (Amendment of Schedule) (No. 2) Regulations 2019 to amend item 31 of the fifth schedule of the EPA 2002 (Urgent beach re-profiling works).

## 2.2 Control of Banned Plastic Bags at Port and Airport

In order to enforce the Environment Protection (Banning of Plastic Bags) Regulations 2015, importation of bags are controlled at the port and airport. As per bill entry of imported and upon verification by customs, any consignment found to contain plastic bag(s) as per the regulation, the attention of the Department of Environment is drawn for a verification and clearance.

The broker of the importer is informed and the latter ensures that the importer make a formal request from the Department of Environment. Upon verification, if the bags are found to be legally in order, they are released. In case the bag(s) are not in order, same are secured and sealed in presence of custom, broker and importer.

The importer gives a statement of undertaking for recycling at approved recyclers of his or her choice and in case the latter fails to do so when requested, the latter will be liable for prosecution. Since July 2018 to June 2019, **83 569** non- authorised bags were secured and **6,397,000** biodegradable bags were imported in Mauritius.

## 5.0 Appeal Cases at Environment and Land Use Appeal Tribunal (ELUAT).

Statement of cases/Statement of reply were prepared in the following cases:

- i. District Council of Pamplemousses v/s Tempo Real Ltd regarding illegal construction of wastewater treatment plant;
- ii. Roland Haus v/s Ministry of Environment;
- iii. Mr Shakti Sobrun & Ors v/s Municipal Council of Quatre Bornes;

- iv. George An Yan & Ors v/s Minister of Environment [I.P.O KI Grand Bay Residences by Yellow Future Ltd];
- v. David Sauvage & 2 ors v/s (1) The Minister of Social Security, National Solidarity and Environment, and Sustainable Development (2) The Ministry of Social Security, National Solidarity and Environment, and Sustainable Development (Environment and Sustainable Development Division);
- vi. David Sauvage & 2 ors v/s (1) The Minister of Social Security, National Solidarity and Environment, and Sustainable Development (2) The Ministry of Social Security, National Solidarity and Environment, and Sustainable Development (Environment and Sustainable Development Division);
- vii. Eco-Sud v/s (1) The Minister of Social Security, National Solidarity and Environment, and Sustainable Development (2) The Ministry of Social Security, National Solidarity and Environment, and Sustainable Development (Environment and Sustainable Development Division);
- viii. Rawoo Mexxy farm Ltd v/s Ministry of Social Security, National Solidarity and Environment, and Sustainable Development (Environment and Sustainable Development Division);
- ix. M. Assim & Sons Ltd v/s District Council of Grand Port , (Environment and Sustainable Development Division as Co- respondent);
- x. Ruling delivered on 31 January 2019 for the appeal of Aret Kokin Nu Laplaz (AKNL) and Ors v/s Ministry of SS, NS and Environment & SD at the Environment and Land Use Appeal Tribunal. Appeal is ongoing at ELUAT;
- xi. Arguments for the Appeal case of Dilip Kumar Lallbeeharry & 19 Ors v/s Ministry of SS, NS and Environment & SD was heard at the Environment and Land Use Appeal Tribunal on 21 March 2019. Appeal withdrawn;
- xii. Statement of Reply prepared for the appeal of Association des Pecheurs de Grande Riviere Noire & Ors v/s (1) Ministry of Environment Sustainable Development Disaster and Beach Management (2) Stella Di Mare (Mauritius) Ltd i.c.w EIA Licence issued to Stella Di Mare (Mauritius) Ltd before Environment and Land Use Appeal Tribunal (ELUAT). Appeal withdrawn;
- xiii. Statement of Reply prepared for the appeal of Force Vice de Grande Riviere Noire v/s Ministry of Environment Sustainable Development i.c.w EIA Licence issued to Stella Di Mare (Mauritius) Ltd before Environment and Land Use Appeal Tribunal (ELUAT). Appeal withdrawn; and
- xiv. Statement of Reply prepared for the appeal of Movement et Bien Être des Pêcheurs de Tamarin v/s (1) The Minister of the Social Security, National Security, and Environment and

Sustainable Development (Environment and Sustainable Development Division) and (2) The Ministry of Social Security, National Security, and Environment and Sustainable Development (Environment and Sustainable Development Division) i.c.w EIA Licence issued to Stella Di Mare (Mauritius) Ltd before Environment and Land Use Appeal Tribunal (ELUAT). Appeal withdrawn.

### 2.3 Supreme Court Cases

Comments were submitted on the Affidavits in the matters listed below:

1. Mrs Peeroo and Ors v/s Desbro Ltd;
2. Mrs Betchnee Deal v/s Maritime Realty Co. Ltd & Or;
3. Dharamraj Deepoo & 5 Ors v/s Chatun Khemraj & 2 Ors;
4. Mrs. Roshni Chaytun v/s Zilwa Attitude Calodyne regarding environmental nuisances (Ministry of Environment as Co-defendant);
5. Mrs Nelly Bianca Mylène Germain & anor v/s (1) One Luxury Ltd (2) One Luxe Ltd (3) Rehm Grinaker Construction Co Ltd;
6. Clear Ocean Ltd v/s Ministry of Social Security, National Solidarity and Environment, and Sustainable Development (Environment and Sustainable Development Division);
7. Notice from Mr. Sanjat Kumar Chooromoney regarding issues of odour and flies associated with rearing of goats at Beau Songe, Riviere Noire;
8. AKNL v/s Ministry of Social Security, National Solidarity and Environment, and Sustainable Development (Environment and Sustainable Development Division)
9. Globe Prism v/s ELUAT;
10. Mr. Rishi Taukoor and Mr Leckraj Seewoololl v/s The District Council of Pamplemousses **ipof**: Ministry of Environment, Sustainable Development and Disaster and Beach Management.

### Other Courts

- Permanent Court of arbitration in matter of Patel Engineering Ltd v/s Republic of Mauritius

## INTEGRATED COASTAL ZONE MANAGEMENT DIVISION

### 1.0 Role and Functions of the Division

The roles and functions of the Division are to:

- Implement the Integrated Coastal Zone Management (ICZM) Framework;
- Conduct and recommend studies on beach erosion and propose appropriate measures for its control;
- Propose oil spill contingency planning and sensitivity mapping;
- Coordinate monitoring of coastal water quality and coastal resources including wetlands;
- Provide views and comments with regard to development in the coastal zone;
- Coordinate regional and international projects and MEAs in the coastal zone;
- Act as secretariat to the ICZM Committee; and
- Address other cognate ICZM issues.

### 2.0 Major Achievements for Period July 2017 to June 2018

#### 2.1 Coastal Erosion

Addressing beach erosion and coastal degradation is of a very high priority for the Ministry. The Ministry has implemented a series of coastal protection rehabilitation works comprising ‘hard’, ‘semi-hard’ and ‘soft’ measures such as rock revetment, gravel nourishment, use of geobags, and sand nourishment at several critical sites. These works are meant to increase the resilience of the beaches, and to protect against damages to coastal infrastructure. For the year 2018/2019,

- (i) coastal protection works over 1.1 km at the following 5 sites have been completed: Rivière des Galets ( 430 m), Baie du Tombeau ( 312m) , Case Noyale ( 120m), Grand Baie Sunset Boulevard (100m) and Residence La Chaux ( 100m);
- (ii) beach rehabilitation works at 5 sites have been completed namely, Bambous Virieux (500m), Flic en Flac (500m), Grand Sable La Grotte (100m), Grand Port Open area ( 30m) , and Bois Des Amourettes ( 40m); and
- (iii) actions have been initiated to carry out beach rehabilitation works at GRSE Roches Noires and Mon Choisy . Works are expected to be completed in August, October and December 2019 respectively.



**Before**



**After**

**Figure 1: Coastal Protection Works carried out at Case Noyale**



**Before**

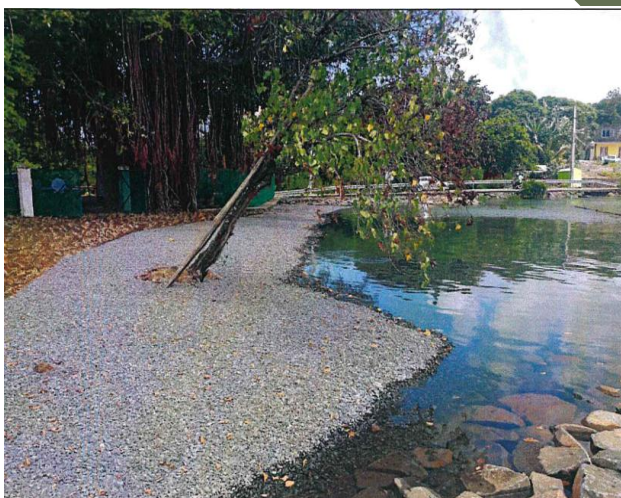


**After**

**Figure 2: Coastal Protection Works carried out at Grand Bay Sunset Boulevard**



Before



After

**Figure 3: Coastal Protection works carried out at Residences La Chaux**



Before



After

**Figure 4: Coastal Protection works carried out at Baie du Tombeau**

### 2.1.1 Study on Coastal Erosion at Flic en Flac

The western coast, especially the coastline from Flic en Flac to Tamarin, which also includes the Wolmar area has undergone considerable human modification over the years. Historical sand dune and lagoonal sand exploitation, filling of wetlands and housing developments have had their impacts on the coastal ecosystem. These bad practices coupled with impacts of climate change have resulted in the retreat of the coastline in the region. As per a study on coastal erosion 2003, commonly referred to as the Baird's report, it is reported that in the Flic en Flac region and Wolmar area, the vegetation has retreated by 15 m (1967-1997), which represents a loss of 30 000 m<sup>3</sup> of sand from the beach. The shoreline has retreated by approximately 10 m in front of Sands resort/hotel at an average of 0.2 m per year (from 1967-2012) and, in front of Manisa hotel going

towards Pearle Beach Hotel, the public beach has suffered from chronic erosion over years as per the JICA report on ‘Capacity Development on Coastal Protection and Rehabilitation in the Republic of Mauritius’ (2012-2015).

Conscious of the ongoing erosion issues in the region of Flic en Flac and taking into consideration the popularity of the region to beach users and also as an important touristic area, the Ministry has awarded a contract for a study to come up with effective and integrated recommendations to address beach erosion at Flic en Flac. The study, which is being undertaken by Mega Design Ltd started in June 2019 and is expected to be completed by November 2019.

### **2.1.2 Replacement of Casuarinas within the Dynamic Beach Zone**

In line with the policy of the ICZM Committee on Replacement of Casuarinas trees within the dynamic beach zone, the Ministry has initiated actions in collaboration with stakeholders and prepared tender documents for the replacement of casuarina trees over 200 m at Flic en Flac and 200m at Le Morne.

## **3.0 Trends and Challenges**

Sea level rise and storm surge frequency will increase as a result of climate change, thereby accentuating the rate of beach erosion and coastal degradation. This will lead to increasing vulnerability and a sense of insecurity in coastal areas throughout the country that will result in fear and anxiety during storms, loss of community cohesiveness, and a general decay in the social fabric of coastal communities. Therefore, much effort in terms of acquisition of appropriate technologies, capacity and investment are required to adapt, in as much that the beaches are vital assets for the tourism industry.



## INFORMATION AND EDUCATION DIVISION

### 1.0 Role and Functions of the Division

The roles and functions of the Division are to:

- Conduct sensitisation campaigns to disseminate information through talks, radio/TV programmes, exhibitions, film shows, and competitions for various target groups;
- Develop resource materials, such as posters, pamphlets, booklets, leaflets, and flyers to disseminate environmental information; and
- Organise the celebration of major international environment events annually, namely Earth Day on 22 April, World Environment Day on 05 June, and Clean up the World during the third weekend of September.

### 2.0 Major Achievements for Period July 2018 to June 2019

#### i) Sensitisation and Awareness Campaign

167 campaigns have been held targeting some 150, 000 people.

**Table 7: No. of Sensitisation and Awareness Campaigns Conducted**

<u>Activities</u>		No.
1.	<b>Activities organised to mark major International Environmental Events</b> <ul style="list-style-type: none"> <li>- Clean up the World 2018</li> <li>- Earth Day 2018</li> <li>- World Environment Day 2018</li> </ul>	<b>19</b>  4  3  12
2.	<b>Awareness Raising Activities</b> <ul style="list-style-type: none"> <li>- General awareness raising activities with different target groups</li> <li>- Radio Talks</li> <li>- TV Programme</li> <li>- Message on Electronic Display Board at municipalities over 12 months</li> <li>- Message on promotional magazines/catalogues of supermarkets</li> </ul>	<b>136</b>  97  14  1  12  12

<u>Activities</u>		No.
3.	Exhibitions	10
4.	Competitions organised for secondary schools <ul style="list-style-type: none"> <li>• Flower Mauritius Competition (schools of all 4 Education zones participated and 3 prizes were awarded to each zone)</li> <li>• Environmental and Sustainable Development Competition (competition was opened to schools of all Education zones and comprised 3 stages, namely Essay competition followed by Power point presentation competition and followed by Debate competition)</li> </ul>	2
<b>TOTAL</b>		<b>167</b>

For the purpose of those campaigns, 17 resource materials have been produced as follows:

- (i) 10 roller banners;
- (ii) 6 posters; and
- (iii) 1 pamphlet.

## POLLUTION PREVENTION AND CONTROL DIVISION

### 1.0 Role and Functions of the Division

The roles and functions of the Division are to:

- Address environmental complaints and enforcement of environmental laws;
- Manage and address environmental complaints on Citizen Support Portal;
- Implement the Industrial Waste Audit (IWA) Regulations 2008; and
- Coordinate for enforcement regarding eyesores on barelands.

### 2.0 Major Achievements for Period July 2018 to June 2019

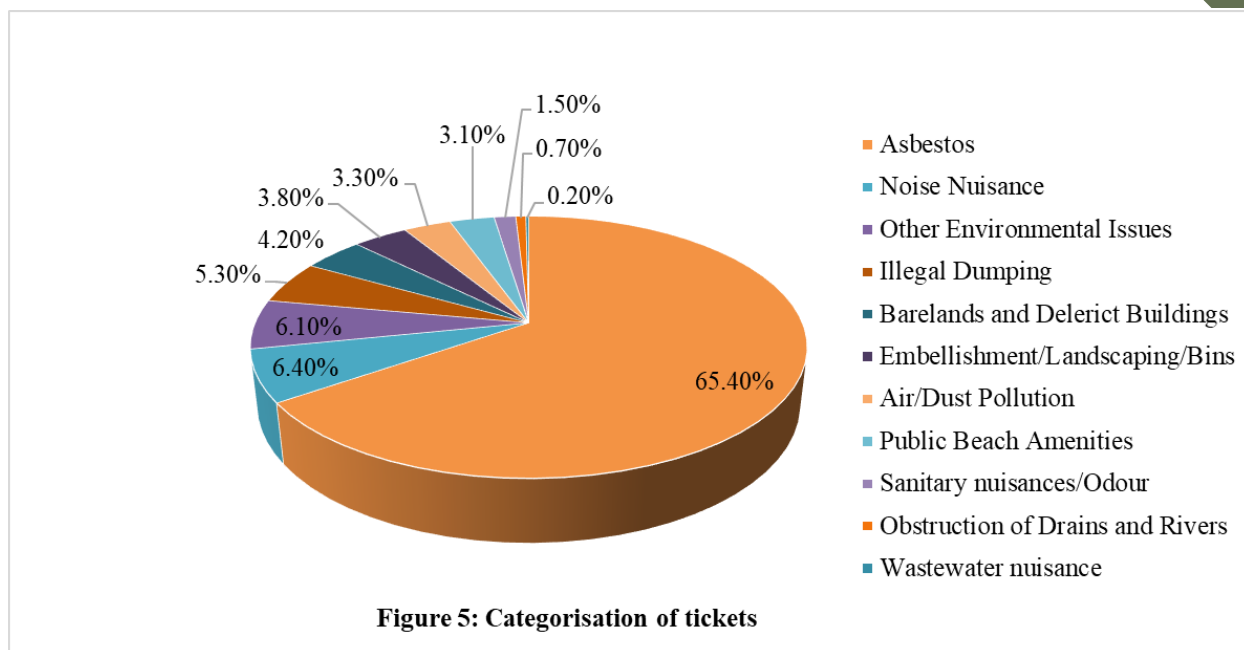
#### (a) Citizen Support Portal (CSP)

The Citizen Support Portal (CSP), which is a useful tool used to address complaints, was launched by the Honourable Prime Minister in April 2017. The Citizen Support Portal has proved to be effective in providing a harmonised and transparent complaints management system which connects all Ministries, Departments, Local Authorities, Parastatal Bodies and our fellow citizens. The status of tickets received on the portal at the Ministry of Environment from July 2018 up to June 2019 is as follows:

**Table 8: Status of Tickets (July 2018-June 2019)**

Total number of tickets	1137
Total number of tickets resolved / transferred / closed	593 (52%)
Total number of tickets under process	544

The categorisation of tickets at the level of the Ministry for the period July 2018 to June 2019 is illustrated in Figure 5 below.



### (b) Handling of Complaints

The Pollution Prevention and Control Division attends to environmental complaints and emergencies by taking appropriate actions as set out in the Environment Protection Act, through established protocols for addressing environmental complaints. Complaints are received via letters, email, press articles and call in person. For the period of July 2018 to June 2019, 1109 complaints have been processed and 13 court cases have been attended at the level of the Division.

### (c) Action Plan On Eyesores / Barelands

The Ministry of Social Security, National Solidarity, Environment and Sustainable Development together with the local authorities, has actively been engaged in tackling the nuisances associated with barelands and eyesores. The main negative impacts associated with barelands are, amongst others: eyesore; health risk through proliferation of vector-borne diseases as well as breeding ground of pests; risk of fire hazards; odour nuisances; social problems and danger to drivers due to visual obstruction. There are presently several challenges and constraints being encountered in dealing with barelands and eyesores. These include fast and recurrent regrowth of the vegetation, high costs associated with cleaning, insufficient personnel and logistics, and difficulty in identifying the land owners. An Action Plan on eyesores and barelands was discussed and agreed at the level of the 22nd National Environment Commission (NEC) held on 17 September 2018 under the chair of the Honourable Prime Minister. To follow up on the recommendations of the NEC, a Monitoring Committee has been set up at the level of the Ministry. The Monitoring Committee has met 4 times from October 2018 to June 2019.

**Table 9: Number of Notices issued for Period October 2018 to June 2019**

Total number of notices issued by Department of Environment, Local Authorities and Police de L'Environnement	6912
Number of barelands (unknown owners and state lands) cleaned by local authorities	4038
Number of green spaces cleaned by local authorities	990
Number of Eyesore Abatement Notices served by the Ministry to owners of barelands after confirmation of ownership	10
Number of press articles relating to dumping / eyesores received and attended to by the Ministry	115
Number of Eyesore Abatement Notices served by the Department of Environment with respect to eyesores identified in morcellements having EIA Licences	323

Some photographs of actions taken relative to press articles on dumping and eyesores for the period of July 2018 to June 2019 are shown below.

**Figure 6: Amaury- Who Cares? (L'Express 03.12.2018)**

**Before**



**After**



**Figure 7: Bambous-Et Sur Le Bord De La Route (L'Express 01.03.19)**

**Before**



**After**



**Figure 8: Petite Riviere Noire - Matelas Au Bord De L'Eau (l'Express 21.12.18)**

**Before****After**

**Figure 9: Petit-Sable: Gênante Accumulation de Déchets! (L'Express 31.01.2019)**

**(d) Industrial Waste Audit (IWA)**

In 2008, industrial waste auditing was introduced through the Environment Protection (Industrial Waste Audit) Regulations 2008 to ensure that industries play an active role in monitoring and mitigating their environmental impacts as well as developing a culture of industrial environmental compliance. For the period of July 2018 to June 2019, 143 industries were monitored under the IWA Regulations 2008.

## SUSTAINABLE DEVELOPMENT DIVISION

### 1.0 Role and Functions of the Division

The role and functions of the Division are to formulate policies and coordinate measures to mainstream sustainable consumption and production patterns and greening of the economy in key sectors of the economy.

### 2.0 Major Achievements for Period July 2018 to June 2019

#### (a) Advocacy for Sustainable Development

- 5 meetings of the National Network for Sustainable Development (NNSD) have been organised to debate on sustainable development issues as per Section 10 of the Environment Protection Act 2002 (as amended in 2008); and
- 4 technical sub-committees have been set up to work on recommendations on:
  - (i) a framework for the sound management of plastic;
  - (ii) development of an Extended Producer Responsibility framework for waste;
  - (iii) enhancement of enforcement measures for black smoke emissions from vehicles; and
  - (iv) development of an integrated approach with respect to Liquid Effluent Management.

#### (b) Reporting on Sustainable Development (National, Regional and International)

- (i) Formulation of 2 chapters (SDGs 12 and 13) and the respective SDG Progress Tracker for the Voluntary National Review (VNR) report 2019 and, list of potential Questions and Answers to be anticipated in the context of the presentation of the VNR;
- (ii) Reporting on the environment dimension of the ‘Domestication of the African Union Agenda 2063’;
- (iii) Reporting on the ‘Review of SAMOA Pathway’ in the context Mid-term review of the implementation of SAMOA Pathway;
- (iv) Reporting on ‘Progress made at the national level on concerned activities in the implementation of the SADC Industrialization Strategy and Roadmap for 2017/18’;
- (v) Reporting to UNEP on the implementation of Sustainable Consumption and Production (SCP) programme in the context of an evaluation exercise “Fiche d’enquête-évaluation sur la mise en œuvre des pan/mcpd”;
- (vi) Reporting on modality of implementation of Sustainable Consumption and Production to UNEP;



- (vii) Reporting on the progress achieved for SDG 12 ‘Ensure Sustainable Consumption and Production Patterns’ to UNEP;
- (viii) Reporting on new initiatives, policies and instruments being used to advance sustainable consumption and production at regional and national level through an on-line ‘Quick Updates’ exercise for the 10-Year Framework of Programmes on SCP;
- (ix) Quarterly reporting effected on the implementation of the environmental dimension of the Sustainable Development Goals for the SDG Database hosted by Statistics Mauritius;
- (x) Reporting on the ‘Linkages between Chemicals and Waste and 2030 Agenda on SDGs’ to UNEP; and
- (xi) Reporting on « Questionnaire pour l’étude sur le diagnostic de l’évaluation environnementale et sociale dans la francophonie » to the Institut de la Francophonie pour le développement durable (IFDD) Organisation internationale de la Francophonie.

**(c) Outreach on Sustainable Development**

- (i) Press articles on 12 thematic issues prepared for awareness raising on sustainable development to encourage sustainable lifestyles; and
- (ii) 3 sensitisation carried out to empower women on sustainable consumption and production practices namely at Bambous, Petite Riviere social centre and Phoenix national women empowerment centre.

**(d) Implementation of Policy Recommendations of the SWITCH Africa Green Project**

**(i) Formulation of Standards (MS196) “Specifications for Treated Farm Animal Manure”**

The standard aims at setting out the specifications to treat raw manure for safe handling in order to protect the environment and human health from contamination risks. The standard was gazetted in November 2018. Validation of the specifications of the standard is underway by FAREI, Ministry of Agro-Industry and Food Security, and MSB to identify best technology to be used for the treatment of the farm animal manure.

**(ii) Development of a Greenhouse Gas (GHG) Emission Model for Livestock Waste**

The project seeks to develop an enhanced GHG emission model, which can be used to develop policy scenarios to mitigate the impacts of livestock waste. TOR for the project has been

finalised after consultation with relevant stakeholders and UNEP will initiate procurement procedures for recruitment of consultant.

**(iii) Setting up of a Pilot Biogas Production Plant using Livestock Wastes**

The project seeks to carry out a demonstration project on the setting up of a biogas plant in an existing livestock farm for production of liquid fertiliser and biogas as a source of renewable energy. The Terms of Reference (TOR) for the project has been finalised after consultation with relevant stakeholders and UNEP will initiate procurement procedures for recruitment of consultant.

**(e) Networking, Capacity Building and Awareness Raising on Green Economy**

- (i) 2 capacity building/ sensitisation sessions with the Cooperatives sector and Women Associations to share information and experience on best practices to green their business sectors. Some 140 persons trained and sensitised on green skills development in the Agricultural, Manufacturing and Tourism sectors; and
- (ii) 4 Monitoring and Evaluation missions to evaluate the uptake of green practices in the grant projects under the SWITCH Africa Green initiative carried out in Rodrigues.

**(f) Resource Mobilisation**

Signature of a Small Scale Funding Agreement (SSFA) with the UNEP for SWITCH Africa Green project “Development of a standard for manure from animal wastes” to the tune of USD 40,600 financed by the European Union. First instalment of USD 30,000 disbursed to the Ministry in February 2019.

## NATIONAL ENVIRONMENTAL LABORATORY

### 1 Role and Functions of the Division

As the scientific arm of the Ministry, the role of the National Environmental Laboratory (NEL) is to monitor environmental quality to ensure compliance with prescribed environmental standards. The functions of the NEL consist of:

- Performing regular environmental monitoring to ensure compliance with the National Environmental Guidelines and Standards;
- Assessing the quality of air, water and other environmental media to track the impact of pollution and evaluate pollution trends;
- Carrying out regular ambient air quality monitoring exercises around the island so as to ensure that the quality of air people is breathing is good;
- Developing analytical methods and recommendations for new test parameters;
- Liaising with other laboratories for environmental monitoring, analysis and reporting; and
- Complying with the Environment Protection Act in maintaining the accreditation of the laboratory to the MS ISO/IEC 17025 international standards so as to submit valid analytical results in a court of law.

### 2.0 Major Achievements for Period July 2018 to June 2019

Ambient air quality was continuously monitored with our network comprising three Fixed Ambient Air Monitoring Stations.

- Two of the Fixed Stations, acquired in August 2015, are used for Urban Background monitoring of dust, notably, fine Particulate Matter of size less than 10 microns (PM-10) at Vacoas and Port-Louis. Annual average results (January to December 2018) indicated that, at both stations, Vacoas and Port Louis PM-10 level ( $14.11 \text{ ug/m}^3$  and  $13.56 \text{ ug/m}^3$  respectively) was well within the WHO Guideline ( $20 \text{ ug/ m}^3$ ).
- The third fixed station at Rose Hill, acquired in September 2017, was used for Roadside monitoring of both dust and gaseous parameters, namely: PM-10, oxides of nitrogen, sulphur dioxide and carbon monoxide.

All parameters measured during the year 2018 up to June 2019 were within their respective norms prescribed in the Mauritian Ambient Air Quality standard, as tabulated below.

**Table 10: Measurement of Parameters**

Parameters	Results range (Yearly)	Mauritian Ambient Air Quality Standard
Nitrogen Dioxide (24-hour average)	0.0 ppb to 15.90 ppb	105 ppb
Sulphur Dioxide (24-hour average)	0.03 ppb to 6.09 ppb	75 ppb
Sulphur Dioxide (1-hour average)	0.0 ppb to 28.18 ppb	132 ppb
Carbon Monoxide (1-hour average)	0.00 ppm to 3.85 ppm	21 ppm
Particulate Matter (24-hour average)	17.25 $\mu\text{g}/\text{m}^3$ to 47.87 $\mu\text{g}/\text{m}^3$	100 $\mu\text{g}/\text{m}^3$

**Note:**

ppb: parts per billion

ppm: parts per million

$\mu\text{g}/\text{m}^3$ : Micrograms per metre cube

- The NEL has acquired a light scattering particulate matter analyser during the year 2019. This equipment allows monitoring of both PM-10 and PM-2.5 simultaneously at hotspots. The equipment has been used for the monitoring of ambient air quality at Forest Side.
- Two ozone analysers have also been acquired during 2019 for the fixed stations at Vacoas and Port Louis. The equipment is on testing phase, however, the ozone results being obtained are below the limits prescribed in standards.
- Ambient Air Quality monitoring was completed at 12 hotspots and reports were submitted to the Pollution Prevention and Control (PPC) and EIA/PER Monitoring Divisions for appropriate actions.
- The NEL acquired a Flame Atomic Absorption Spectrometer in replacement of the old and faulty one, which was beyond economical repair. This equipment is used to measure levels of trace metals in the environment.

- The water quality of twenty-seven rivers was monitored around Mauritius under the Independent Environment Audit (IEA) on Wastewater Projects. Monitoring for year 2018 was completed in November 2018.
- Water Quality monitoring of other water bodies (such as surface and underground water at Mare Chicose among others) was on target; test reports were submitted to the Solid Waste Management Division for appropriate actions.
- The following upgrading works were carried out, at the National Laboratories Complex (NLC), to meet safety and health requirements:
  - Installation of a Centralised Fire Alarm System; and
  - Water reticulation system in respect with odour complaint near the Trace Metal Section.
- The Quality Management System's (QMS) documentations at the NEL, which are currently in line with the ISO/IEC 17025:2005 standard for laboratory accreditation, were reviewed and aligned with the requirements of the new ISO/IEC 17025:2017.
- Global Monitoring Plan on Persistent Organic Pollutants: -
  - Mauritius along with other fifteen African Countries was selected in a Global Environment Facility (GEF) funded project entitled 'Continuing Regional Support for the Persistent Organic Pollutants (POPs) Global monitoring Plan (GMP) under Stockholm Convention in the African Region, Phase II'. Mauritius had participated successfully in the phase I of the project in the year 2009-2012 and Mauritius was able to contribute background data on 12 POPs in ambient air and human milk to the GMP.
  - The second phase of the project was started in 2016. This phase consists of monitoring of 12 existing POPs and the additional eleven new POPs listed in the Stockholm Convention. The activities which have successfully been carried out in this project during the period July 2018 to June 2019 are as follows:
    - Passive ambient air sampling for a period of two years;
    - Human milk sampling by the Ministry of Health and Quality of Life was completed;

- Shipment of passive air filters and human milk sample to expert laboratories for mirror analysis;
- Collection and shipment of samples of other matrices of national interest to expert laboratories;
- Extraction and analysis of PT samples organised by UNEP;
- Acquisition of Active Air Sampler from UNEP; and
- Identification of site for active sampling of POPs in ambient air.

## LIVING ENVIRONMENT UNIT

### 1.0 Role and Functions of the Division

The Living Environment Unit is responsible for the upgrading, landscaping and embellishment of the country to improve the immediate environment as well as to enhance the quality of life of the citizen.

### 2.0 Major Achievements for Period July 2018 to June 2019

During the financial year of 2018/19, the LEU has carried out the following projects around the island as described hereunder.

#### (a) National and International Events

In the context of national religious festivals, a Task Force has been set up under the chair of the Honorable Prime Minister, to coordinate works being carried out and ensure that the festivals are celebrated in the best conditions. General maintenance, upgrading works, de-silting of rivers and other works recommended by task force usually set up in the context of the following National festivals:

##### (i) *Cavadee Festival*

69 sites were upgraded and cleaned by in-house labour

##### (ii) *Mahashivaratree Festival*

27 sites were upgraded by in-house labour for a total cost of Rs 2,708,910.00.

Moreover, cleaning services were contracted-out for a Contract amount of Rs 7,671,075 and comprise the cleaning of Grand Bassin Compound, Lake Belt, Temples' Vicinities, Parking Areas, Toilet Blocks and Roads leading to Grand Bassin on a 24-hour basis by private contractors during the festival from 28 February 2019 to 05 March 2019 (6 days); and the cleaning of toilets also on 23 and 24 February 2019 (2 additional days).

##### (iii) *Shaabe Baraat Festival*

Cleaning and upgrading works were carried out by in-house labour at 4 sites.

##### (iv) *Ganesh Chathurthi Festival*

75 sites were upgraded, which includes cleaning and desilting of 33 rivers.

### **(b) Cleaning and Embellishment of Places of Worship and Other Public Sites**

The LEU has also upgraded and embellished various degraded sites at Public places and places of worship and includes the constructions of health tracks, endemic gardens and children gardens such that the environment is conducive for social, tourism, religious, cultural and recreational activities. In this context, 186 sites were upgraded and rehabilitated for the financial year 2018/19.



**Figure 10: Health Track in Yard of John Kennedy School**



**Figure 11: Children Play Equipment**

### **(c) Cleaning of Motorway**

General maintenance of both side verges of M1 and M2 motorway from Grand Baie to Plaine Magnien is an ongoing process.



## SOLID WASTE MANAGEMENT DIVISION

### 1.0 Role and Functions of the Division

The role and functions of the Division are to:

- Assist in the formulation of policies, strategies and develop programmes and projects for the environmentally sound management of solid and hazardous wastes;
- Ensure that waste transfer and disposal sites namely transfer stations, the landfill and the interim hazardous waste storage facility are effectively and efficiently operated;
- Enforce legislations with regards to solid and hazardous wastes management, including Environment Protection (Standards for hazardous wastes) Regulations 2001, Environment Protection (Collection, storage, treatment, use and disposal of waste oil) Regulations 2006;
- Register Scavenging Contractors under the Local Government (Registration of Scavenging Contractors) Regulations 2004; and
- Register Recyclers and Exporters under the Local Government (Registration of Recycler and Exporter) Regulations 2013.

### 2.0 Major Achievements for Period July 2018 to June 2019

#### (a) Vertical Expansion of the Mare Chicose Landfill

The bulk of the wastes generated in Mauritius are currently disposed at the Mare Chicose landfill. Due to the continued increase in solid wastes generation (average of 3.1% per annum over the past 10 years), the lifetime of the Mare Chicose landfill has decreased significantly and will reach saturation by May 2020, as per the current design. In view of the impending saturation of the Mare Chicose sanitary landfill and with no other short-term measures available, Government has already embarked on the vertical expansion of the existing landfill site. A Consultancy team was appointed in December 2018 for carrying out a feasibility study on the vertical expansion works. The Consultant submitted report of the Feasibility Study on 08 July 2019, with recommendations regarding the option to be adopted. It is expected that the vertical expansion works will start by May 2020 and will provide for disposal capacity for at least 10 years.

#### (b) Interim Hazardous Waste Storage Facility

The Interim Hazardous Waste Storage Facility came into operation in April 2017. For financial year 2018/2019, nearly 70 inspections have been carried out at state and private secondary schools, laboratories in the public and private sector and major industries while over 155 tons of hazardous wastes have been collected for export to licensed recovery/treatment/disposal facilities. Operation of

the interim hazardous wastes storage facility ensures that these hazardous wastes are properly managed, thereby minimising the risks to the environment and public health.

**(c) E-Wastes Collection Campaign**

Following the increasing requests on E-wastes disposal, Government decided to carry out a new E-waste collection campaign at household level and Ministries with the collaboration of Local Authorities. The collection campaign started in March 2019 and was completed in August 2019. For the period of March to June 2019, a total of 27,000 E-wastes units equivalent to around 500 tons of E-wastes has been collected by Local Authorities. These E-wastes will be sent for recycling to licensed facilities.

**(d) Asbestos Treatment Programme**

Government has decided to phase out ex-CHA houses, which contain cemented asbestos materials. 3113 houses known as ex-CHA/EDC houses were constructed island wide in the 1960s and to date, more than 1000 have already been dismantled by the owners. In 2018 to June 2019, about 38 houses were dismantled and the asbestos disposed safely at the landfill. Fresh surveys have been conducted and completed in the 59 Housing Estates across the island, in view of having an overview of the situation.

The Building Control Act has been amended to enable Local Authorities to serve notices upon unoccupied houses and subsequently, same can be dismantled. A tender has been launched for the dismantling and carting away of asbestos sheets from 216 houses island wide. It is expected to award the Contract by October 2019.

**(d) Setting-up of Infrastructures for the Management of Construction and Demolition Wastes**

Over the past years, illegal dumping has been a major challenge for the solid waste management division. Several complaints have been reported with regards to illegal dumping of construction and demolition (C&D) wastes at different locations on the island including river banks, barelands, roadsides and public places. This situation of illegal dumping has arisen due to inadequate infrastructures for the disposal of these C&D wastes. As a solution to this issue, the SWMD has initiated the procedures for the setting-up and operation of 2 temporary storage sites for C&D wastes at La Chaumiere and La Laura transfer stations. C&D wastes collected at these storage sites can then be used by individuals for backfilling purposes and by stone crushing plants for recycling into aggregates or by recyclers.

### 3.0 Challenges

#### (a) Solid Waste Disposal Capacity

The setting up of any waste treatment/disposal facility generally takes 3-5 years to materialise. Whatever future waste treatment or disposal facility is implemented, there will always be some residual wastes and rejects emanating from these plants during the operation as well as maintenance of these facilities. These need to be ultimately disposed in a landfill. Attempts to find land for a new landfill with a view to creating disposal capacity for the coming years have not yielded expected results.

The only option available is the vertical expansion of the Mare Chicose landfill. The Consultant's feasibility study and design will determine the extended life span of the landfill. However, indicatively, the additional lifespan is expected to be at least 10 years. Once the Mare Chicose landfill site is fully saturated after the Vertical Expansion, there will still be a need for a landfill. New land of extent of some 30 to 40 Ha will have to be sought for development of a new landfill. Lateral expansion of the landfill will need to be envisaged but this will entail surveys with relevant Ministries and negotiations land owners.

#### (b) Setting-Up of A Scrapyard Facility For End-Of-Life Vehicles

Abandoned vehicles are becoming a major issue in Mauritius and are currently dumped on barelands, roadsides and public places. Besides, a significant number of seriously damaged vehicles, commonly known as "total loss" vehicles, find their way back on the road after they have been modified. This is also considered to be a threat to public safety on roads. With no official disposal site or management system for scrap vehicles in Mauritius and considering that dumping of scrap vehicles represents an eyesore and harbour mosquitoes which can be the vector for diseases like malaria, chikungunya, dengue that can seriously affect public health, a sustainable solution to this issue is thus fundamental. It was therefore, proposed to carry out a feasibility study for the setting-up of a scrapyard facility in Mauritius for the de-pollution, dismantling and recycling of end-of-life vehicles and provide suitable storage areas for the recyclable materials. A bidding exercise was carried out at national level and no offer was received. Another bidding exercise was carried out at international level but the only substantially responsive bid received was much on the high side and could not be accepted. Further discussions will be held at the level of this Ministry and with the Ministry of Public Infrastructure and Land Transport to brainstorm on the way forward.

## NATIONAL DISASTER RISK REDUCTION AND MANAGEMENT CENTRE

### 1.0 Role and Functions of the Division

The roles and functions of the Centre are regulated by the NDRRM Act 2016 which shall:

- (a) act as the main institution in Mauritius for coordinating and monitoring the implementation of DRRM activities as per the National Strategic Framework and National Plan;
- (b) ensure the implementation of the National Strategic Framework and National Plan;
- (c) coordinate and monitor all DRRM activities;
- (d) coordinate and monitor the implementation of the DRRM programmes through community participation and public awareness campaigns;
- (e) work in close collaboration with the MMS, which shall develop and improve warnings and advisories systems for all natural hazards affecting Mauritius;
- (f) implement a national multi-hazard emergency alert system to provide accurate and timely advice to the public and key stakeholders;
- (g) support Ministries, Government departments, local authorities and communities in building capacity for DRRM;
- (h) facilitate and coordinate the conduct of regular trainings, drills and simulation exercises to test the adequacy of disaster response plans;
- (i) undertake and participate in post-disaster reviews, including lessons drawn from previous disasters in disaster preparedness and response plans;
- (j) assist relevant stakeholders to develop an appropriate risk transfer mechanism for post-disaster recovery and rehabilitation purposes;
- (k) collaborate with all relevant stakeholders so that DRRM becomes an integral objective of environment-related policies and plans, sound land use planning, natural resources management, education and social development plans, economic and sectoral policies, as well as infrastructure through enforcement of building codes;
- (l) foster regional and international cooperation in DRRM issues, including best practices and sharing of expertise;
- (m) promote research and development and commission studies on DRRM matters;
- (n) publish and disseminate information concerning DRRM; and
- (o) carry out such other activities as may be necessary or expedient for the administration of this Act.

## **1.1 Disaster Risk Reduction Measures**

In line with Government's vision to enhance the safety of citizens, the NDRRM Council and NDRRMC represent the institutional measures to mainstream and integrate disaster risk reduction measures within and across all sectors. The NDRRMC is committed to promote a comprehensive and integrated multi-hazard approach to disaster risk reduction and disaster risk management, including prevention, preparedness, response and recovery and reconstruction to achieve sustainable development objectives and a disaster resilient nation.

## **1.2 Disaster Response Operations**

### **1.2.1 National Crisis Committee**

The National Crisis Committee, chaired by the Minister responsible for disaster management, is responsible to take decisive and timely actions through the NEOC to: –

- (a) ensure that general preparedness plans are activated at all levels;
- (b) safeguard the life of persons in danger, including evacuation of persons at risk;
- (c) supervise the organisation of disaster response operations;
- (d) provide relief assistance;
- (e) take appropriate measures during the initial recovery phase; and
- (f) take such other measures as may be appropriate in the circumstances.

### **1.2.2 National Emergency Operations Command (NEOC)**

The National Emergency Operations Command (NEOC) is a multi-agency structure within the NDRRMC and comprises of designated senior officials from the public bodies, private sector and NGO which is activated as and when required or in when a disaster is imminent to coordinate and monitor all disaster response and recovery activities. It is headed by the Commissioner of Police who may delegate his powers to any other appropriate person, depending on the nature of the disaster. In order to ensure public safety, the NEOC has the power to:

- (a) cause to be closed or diverted any public road which represents a potential risk to road users;
- (b) cause the evacuation, either voluntarily or by using such force as may be necessary, of persons who are at risk;
- (c) cause public facilities such as emergency shelters, educational institutions, stadiums, gymnasiums, parking spaces or any other public place to be used for the purpose of sheltering displaced persons or storage of emergency supplies;

- (d) direct the closure of any underground facilities, subways, underpasses or such other places or facilities as may be necessary; and
- (e) cause to be deployed such resources that may be required in the circumstances.

In the event a disaster in any part of the State of Mauritius is of such a nature and extent that exceptional measures are necessary to assist and protect the public in that area or where circumstances are likely to arise making such measure necessary, then our Prime Minister is empowered, on his own motion, or after consultation with the chairperson of the National Crisis Committee to declare a state of disaster in any area in Mauritius.

## **2.0 Major Achievements for the Period July 2018 to June 2019**

- The *National DRRM Council* met under the chairmanship of the Honorable Minister or
  - Permanent Secretary on 13 occasion to look into policy matters.
- The *National Crisis Committee* met on 5 occasions due to extreme weather conditions coupled with NEOC activation on 21 occasions for a total duration of 36 days from July 2018 to June 2019 to deal with disasters and crisis situations, namely Heavy Swells/ High Wave, Strong Wind, Heavy/ Torrential Rain, Fire Outbreak, Tropical Storms (CILIDA, ALICIDE, FUNANI and GELENA) and Gas Leakage
- *Contingency Plans:* for vulnerable regions of Baie du Tombeau, Camp Manna and Bambous have been completed and handed over to respective Municipal/ District Councils by the NDRRMC. Draft Contingency Plans for Cottage, L'amitie/Gokhoola have been prepared and will be finalized before the forthcoming summer season.
- *Emergency Action Plan for Bagatelle Dam* (Phase 1) has been prepared in consultation with Water Resources Unit. Wet Testing of the hydro mechanical equipment was carried out successfully.
- *Protocol on Heavy Rainfall for the Public Sector* has been implemented.
- *40 Simulation Exercises/Drills* have been carried out in Mauritius and Rodrigues.
- *Awareness Campaign on Safety and DRR* have been carried out for Public/ Private Primary Schools in Mauritius as well as for primary /secondary schools in Rodrigues.

- ***Sensitisation Programmes for women on DRR*** carried out in different Women Empowerment Centres, in collaboration with the Ministry of Gender Equality, Child Development and Family Welfare and a one-day workshop was held at Diamond Hall, SMF. So far about 1000 women have been sensitized on DRR issues.
- ***Workshops:***
  - Induction programme for Local Disaster Management Coordinators was carried out from 26 Sept to 02 Oct 2018.
  - Post Disaster Needs Assessment training was conducted in collaboration with UNDP from 08-12 Oct 2018.
  - Training Seminar on Operational Management of LEOCs by PIROI from 18-22 March 2019.
  - Training/ Workshop on Incident Command System for NDRRMC Staff was conducted by Lt. Col. R. S. Aswal from the Indian National Disaster Response Force on 16 May 2019.
  - Workshop on Women Empowerment in Disaster Risk Reduction and Enhancing resilience against extreme weather, under the Gender Caucus Project, was held jointly with MMS on the 30 May 2019.

### **3.0 Trend and Challenges**

#### ***3.1 Mainstreaming of DRR***

The Sendai Framework for Disaster Risk Reduction 2015-2030 is considered as a key instrument in facilitating the mainstreaming of disaster risk reduction and management activities across all sectors in the Republic of Mauritius. There is need to develop National Disaster Risk Reduction and Management Policies, Strategic Framework and Action Plan for the Republic of Mauritius, which will take into consideration the guiding principles of the Sendai Framework.

#### **(i) National Disaster Risk Reduction and Management Policies, Strategic Framework and Action Plan for the Republic of Mauritius**

Following the advice of the Ministry of Finance, the NDRRMC has requested for funding from the Agence Française de Développement (AFD)) to prepare the 'National Disaster Risk Reduction and Management Policies, Strategic Framework and Action Plan for the Republic of Mauritius'. The AFD is funding the above-referred project of the NDRRMC through the Adapt'Action project to the tune of 100,000 Euros. Contract has been awarded to DAI Consultant. The Gap Analysis has been finalized

and the Policy, Strategic Framework and Action Plan are expected to be completed by end of November 2019.

#### **(ii) Capacity for Disaster Reduction Initiative (CADRI)**

It is a Project under UNDP through Adaptation Fund Board. The project value is 65,000 USD. Two experts from UN conducted a scoping mission to Mauritius from 26 to 28 February 2019 in order to define the scope, thematic focus, modality and timeline of CADRI engagement and mobilize national stakeholders to lead the CADRI process. As a follow up action, a CADRI mission for an in-depth capacity assessment in priority sectors for a period of two weeks from 19 to 30 August 2019 was undertaken by 11 international experts in different sectors with selected stakeholders in priority sectors.

The objectives of the mission were to:

- facilitate a comprehensive multi-sectoral analysis of existing capacities, needs and gaps of the DRM system based on interviews at central and local levels
- undertake a mapping of risk information available across government and partners,
- identify recommendations for reinforcement of capacities across sectors

The final report is expected by end of November 2019.

### ***3.2 Development of Flood Danger Zone Maps/Plans***

To promote land-use planning and propose measures to reduce flood risk, it is necessary to have flood danger maps of high resolution i.e a scale of 1:5,000 as recommended by the Action H2 of the DRR Report 2013. Out of the 37 identified vulnerable sites, topographic mapping for 28 sites have been completed and the remaining 9 sites are in progress at the level of the Ministry of Housing and Lands. A project for Danger zone mapping for 15 priority areas, out of the 37 identified vulnerable sites has been submitted for consideration under the National Adaptation Plan for funding from the Green Climate Fund.

### ***3.3 Rivers, Canals and Water Courses Flow Monitoring***

There is currently no real time monitoring of flows in the rivers, canals and other water courses in Mauritius. Lack of such real-time river flow monitoring system could impede flood forecasting and for providing timely alert to the public for eventual evacuation. It is therefore important to develop a modern, national-level Flood Forecasting and Early Warning System. To this effect a proposal for



implementation of a National flood forecasting system has been submitted to the AFD through proper channel to seek funding from Green Climate Fund

### ***3.4 The National Multi-Hazard Emergency Alert System (NMH EAS)***

This Project financed on a pilot basis under the National Environment Fund, should provide a reliable high performance system to disseminate warnings and alerts messages to a maximum number of people and stakeholders in the Republic of Mauritius within an acceptable timeframe by broadcasting warning and alerting messages through a number of channels, for example telecom networks (mobile/landline), television and radio, Internet (including social media), display signs and public broadcasting systems (e.g. sirens). The system will cover Mauritius, Rodrigues, Agalega and St Brandon. Letter of acceptance already issued to successful bidder in September 2019.

### ***3.5 Cyclone Proof and Disaster Resilient Sheltering Facilities***

The residents and stakeholders operating at St Brandon and Agalega have been found to be vulnerable to severe weather-related events such as super cyclones, storm surge, heavy swells and as well as tsunamis. Therefore, adequate multi-hazard sheltering facilities need to be provided to these outer islands. Currently there is no cyclone safe shelter on both Agalega (South Island) and St Brandon. In view of the threat faced by the inhabitants of Agalega (South Island) and St Brandon during the passage of cyclones, there is an urgent need to construct cyclone proof bunkers on each of these islands. This project proposal is in line with the Intended Nationally Determined Contribution (INDC) component 'Enhancing protection of critical public infrastructure' and its funding is being sought through the INDC.

### ***3.6 The Geographic Information System (GIS)***

The Geographic Information System (GIS) is an effective tool in the management of disasters. Currently GIS is being used on an ad-hoc basis at the level of the NDRRMC. There is a need to set up a GIS Unit at the NDRRMC with a view of taking advantage of its inherent capabilities and integrating this tool into the disaster risk reduction and management process. The NDRRMC has recently acquired an advanced set of GPS equipment and the Centre has recommended the recruitment of a GIS officer and technicians at the earliest.

### ***3.7 Community Empowerment***

During periods of crisis, community involvement through the Ministry of Youth and Sports, Senior Citizen Associations and the National Women Council amongst others is crucial. In this context, Community Disaster Response Programme (CDRP) has been set up which aims at training volunteers by initiating them on basic safety and rescue techniques and providing them with personal protective equipment. Three CDRPs were conducted at Old Grand Port, Bambous and Cottage respectively.

### ***3.8 Strategic Review of Warning Systems: Enhancing Meteorological Observation, Forecasting and Warning Capabilities***

The Mauritius Meteorological Services has acquired a Doppler Weather radar. The possibility of introducing an automated flood monitoring system in flood prone areas, rivers, canals integrated with the Doppler Weather Radar will be developed. This set up would provide timely warning and alert to first responders and the general public against hydro meteorological events. The introduction of a 'Phase de Sauvegarde' within the present cyclone warning system is also envisaged and a policy decision at the level of the NDRRM Council on this matter is awaited. The Mauritius Meteorological Services is also proposing to introduce a cyclone warning system for Agalega and St Brandon.

### ***3.9 Public Awareness and Education***

Disaster Risk Reduction is not currently part of the Mauritian culture, especially among young generation that have not experienced the severe natural disaster their parents and grandparents have known. There is a strong need for tailored and gender differentiated education program that will reach target audience on a very strong and efficient level, through innovative designs, delivery ways and materials.

### ***3.10 Assessment of the Capacity Building Needs of First Response Disaster Management Agencies***

This project aims at identifying the capacity building needs of all first responder agencies, linkages and overlaps, with the goal of clarifying roles and responsibilities in order to be better trained and equipped to face existing and emerging challenges. An Implementation Matrix as proposed by Mr. Paul Hayden, the international consultant, has been tabled at the National Council for consideration.

### ***3.11 Emergency Alert Mobile App***

The Mobile App acts as a channel of communication between the National Emergency Operations Command (NEOC) and/or the National Disaster Risk Reduction Management Center (NDRRMC) and members of the general public and provides alert notifications as and when required by the NEOC/NDRRMC.

### ***3.12 MyT Weather App***

This Mobile App is a common platform for the issue of emergency alerts by the NDRRMC and the MMS for the public.

### ***3.13 Development of a Protocol for Heavy Rainfall for the Private Sector***

In line with the Protocol for Heavy Rainfall for the Public Sector, a similar protocol for the private sector has been devised. The draft protocol for the private sector, which includes comments from all stakeholders, have been sent to SLO for vetting. Same has been submitted to the Business Mauritius for finalization and implementation after approval of the council. A protocol is being finalised for the Private Sector and is expected to be completed before the next rainy season. During the 28th NDRRM Council, a sub-committee had been set up under the chair of the Mr Dabidin, Permanent Secretary, PMO to review the draft protocol pending further consideration by the Council.

### ***3.14 School Safety Plans***

As per the DRR Report 2013 and observations on ground, 45 schools (26 primary and 19 Secondary Schools) have been found to be prone to flooding and coastal inundation. The NDRRMC, Mauritius Fire and Rescue Service (MFRS) and the Ministry of Education have together developed a standard template which is being customized based on the specificities of each of the 45 vulnerable schools on a priority basis.

The Cabinet took note of the School Emergency Response Plan for pre-primary, primary and secondary schools on the 11 April 2019. Schools are presently implementing the plan and they are setting up their School Disaster Management Committees (SDMC) as per the Section 2.2.1 of the School Emergency Response Plan (SERP). The MFRS teams and the Health and Safety Officers of the Ministry of Education are assisting schools in finalising the evacuation and the layout plans as mentioned in Section 7.0 of the SERP.

### ***3.15 HAZMAT Regulations***

A first draft HAZMAT Regulations was prepared by the NDRRMC and it was later decided that MFRS is the most appropriate agency to take the lead. The new draft Hazmat regulation was jointly prepared by the MFRS and the NDRRMC. The draft regulation was submitted by the MFRS through the MoLG to the Attorney General's Office for vetting. It was advised that the proposed amendments

empower the Chief Fire Officer to take the lead by amending the MFRS Act instead of by way of Regulation.

### ***3.16 Budget Provision of 2% as per NDRRM Act***

To encourage Ministries/ Departments to allocate 2% of their budget provision to DRR activities.

### ***3.17 Flood Emergency Plan for Hospitals, Hotels, Consulates and Embassies, Outer Islands, Residential care homes.***

(i) Development of Emergency Plans for Jeetoo Hospital has been prepared by the NDRRMC and other stakeholders. The final draft document together with a draft cabinet information paper has been sent to the MSSNSESD for onwards transmission to the Ministry of Health & Quality of Life.

(ii) Development of Emergency plans for Hotels, Residential care homes and Outer Islands have already been initiated.

(iii) However development of contingency plans for Consulates and Embassies is under consideration.

### ***3.18 DESINVENTAR***

As part of the Sendai Framework's Priority 1 'Understanding Disaster Risk', the country has to set up a Disaster Loss Database in view to systematically record disaster loss and damage due to both small-scale and large-scale disasters. There is a need to train relevant stakeholders on Disaster Loss Database. Presently a UNDP consultant is working on the Disaster Information Management System (DIMS). The Data collected will enable the government to measure progress towards the achievement of the global targets of the Sendai Framework for DRR and to integrate these indicators in the monitoring framework for the Sustainable Development Goals

### ***3.19 Vulnerability of Mauritius to Tsunami and Earthquake***

On the 27 February 2018 at 23hr25, an earthquake of magnitude 4.1 occurred at about 114 km to the South West of Tamarin, Mauritius. People across the island felt the shaking for a few seconds. Due to the presence of La Fournaise Volcano at Reunion and the Mid-Indian Ridge close to the East of Rodrigues, the Republic of Mauritius is prone to earthquakes occurring in the vicinity of the Islands. In this context, the assistance of the UNDP has been sought to undertake a vulnerability study for Earthquake and Tsunami for the Republic of Mauritius.

A Contract was awarded to Bureau de Recherches Géologiques et Minières (BRGM) by UNDP on 08 July 2019 to carry a desktop study on the vulnerability of the Republic of Mauritius to Seismic Hazards and Tsunami to identify potential seismic hazards and tsunamic activities in the SWIO region and their impacts on the Republic of Mauritius and recommend measures to strengthen the resilience of the population.

Two BRGM experts made a first visit of one-week from 22 July 2019 to 26 July 2019 to Mauritius whereby the project team met organisations to collect existing data and receive information regarding local institutions and capabilities.

A draft report was sent on Friday 13th September 2019 and a technical validation workshop was held on Thursday 19 September 2019 with NDRRM Council members and the technical stakeholders involved.

#### **4.0 Strategic Direction**

To implement effective disaster risk reduction and management to enhance public safety. This may be achieved by:

- (i) Addressing existing challenges and prepare for future ones by focusing on assessing, understanding and monitoring disaster risk and as well as sharing such information to concerned stakeholders;
- (ii) Strengthening coordination on Disaster Risk Reduction across relevant institutions and sectors; and
- (iii) Enhancing multi hazard early warning systems, preparedness, response, recovery, rehabilitation and reconstruction capabilities.

## IMPLEMENTATION OF SCHEMES

### 1.1 Implementation of Solar Water Heater Scheme

On 01 June 2018, Cabinet agreed to the proposal made by the Ministry to provide a complete set of Solar Water Heater (SWH) systems, including one-bathroom shower set and associated plumbing works, to 1143 families who have become owners of NHDC housing units since 2015 till 30 May 2018, and who are drawing a monthly income of less than Rs 20,000. Given that an estimated 20-30% of electricity consumption is used to heat water in households and by replacing grid-dependent electric units with Solar Water Heaters, it has been estimated that this category of beneficiaries was saving an average of Rs 9,000 per year. The objectives of the Solar Water Heater (SWH) Scheme are to:

- (i) encourage the use of renewable energy instead of fossil fuels;
- (ii) reduce greenhouse gas emissions;
- (iii) reduce home energy bills; and
- (iv) provide to selected target groups access to hot water.

Subsequently, tender was launched for the supply, installation and commissioning of 1000 Solar Water Heaters of capacity 200 Litres, including one-bathroom shower set and associated plumbing works. The breakdown of the number of units installed region-wise is as per Table 11 below.

**Table 11: Number of Solar Water Heaters Installed Region-wise**

SN	Site	No. of SWH Systems Installed
1.	Chebel	88
2.	Beau Bois	44
3.	Camp de Masque	52
4.	Pointe aux Piments	42
5.	Quatre Cocos	117
6.	Camp Ithier	134
7.	Mont Gout	65
8.	Glen Park	47
9.	Lallmatie	5
10.	Henrietta	78
11.	Mare D'Albert	55
12.	D'Epinay	19
13.	Cottage	25
14.	New Grove	3
15.	Rose Belle	1
16.	Mare Tabac	6
17.	Tyack	5

SN	Site	No. of SWH Systems Installed
18.	Souillac	16
19.	Plaine Magnien	20
20.	Dagotiere	2
21.	Camp Diabie	16
22.	Pointe aux Sables	23
23.	Melrose	20
24.	Petit Bel Air	58
25.	Grand Bel Air	4
26.	Camp Manna	70
27.	Piton Azuri	60
28.	Madam Azor (Goodlands)	68
<b>TOTAL</b>		<b>1143</b>

## 1.2 Implementation of Rainwater Harvesting Scheme

During the financial year 2018/2019, the Ministry implemented the rainwater harvesting scheme. The objectives of Scheme: are to:

- (a) encourage Local Authorities, schools and other government agencies to use rainwater for non-potable water needs like washing yards, toilet and watering;
- (b) reduce water costs for Local Authorities which currently have a high level of water usage on their market and fairs; and
- (c) improve public awareness of rainwater harvesting in Mauritius.

The Scheme was targeted for Municipal and District Councils, Non-Governmental Organisations, private and public schools and any other Government body. During the financial year, the Scheme was implemented for a total of Rs 6,236,777 for beneficiaries as follows:

- (a) 41 schools;
- (b) 5 Local Authorities;
- (c) 5 Social Welfare Centres;
- (d) 3 Community Centres; and
- (e) 3 NGOs.

## STATUS ON IMPLEMENTATION OF BUDGET MEASURES

**Table 12: Status of Budget Measures for Financial Year 2018/19**

Para in Budget Speech	Budget Measure	Status
144	Clean Up Mauritius and Embellishment Campaign – “Moris Nu Zoli Pei”	<ul style="list-style-type: none"> <li>• 186 sites were upgraded / rehabilitated for financial year 2018 / 2019.</li> <li>• 27 sites were upgraded in the context of Maha Shivaratree and cleaning services were provided at Grand Bassin during the festival.</li> <li>• Cleaning and desilting works for Ganesh Chaturthi Festival amounting to Rs 2.3 Million.</li> <li>• 69 sites were cleaned and upgraded in the context of Cavadee Festival.</li> <li>• General maintenance of both sides of M1 and M2 motorway ongoing.</li> </ul>
-	Rainwater harvesting system	<ul style="list-style-type: none"> <li>• An amount of Rs 7 million was provided in the budget 2018 / 2019 for the implementation of the Rainwater Harvesting Project.</li> <li>• 41 schools, 5 local authorities, 5 social welfare centres, 3 community centres and 3 non-governmental organisations benefitted from the project.</li> </ul>



## STATUS ON IMPLEMENTATION OF KEY ACTIONS

**Table 13: Status on the Implementation of Key Actions**

SN	Key Action	Key Performance Indicator	Target (as per Budget Estimates)	Status
1.	Address beach erosion issues at critical coastal sites	Number of critical coastal sites rehabilitated and protected	5	7 Coastal sites rehabilitated at: <ul style="list-style-type: none"> <li>○ Grand Baie Sunset Boulevard;</li> <li>○ Case Noyale;</li> <li>○ Residence La Chaux (Mahebourg);</li> <li>○ Grand Sable;</li> <li>○ Grand Port;</li> <li>○ Bois des Amourettes; and</li> <li>○ Bambous Virieux.</li> </ul>
2.	Revamping of popular public beaches as per Beach Management Plans	Number of beaches where works initiated	1	<ul style="list-style-type: none"> <li>• Funds of Rs 50 M allocated by NEF for implementation on 4 public beaches, namely at:               <ul style="list-style-type: none"> <li>○ Mont Choisy;</li> <li>○ Flic en Flac;</li> <li>○ Belle Mare; and</li> <li>○ La Prairie</li> </ul> </li> <li>• Financial clearance obtained from MOFED.</li> <li>• Cabinet approval awaited.</li> </ul>
3.	Cleaning of natural water courses to improve the free flow of rain water	Number of sites cleaned	30	36 Sites cleaned.
4.	Optimisation of Mare Chicose landfill through 'Wedge Works' in-between closed cells.	Additional disposal capacity for Solid Waste created (m3)	300,000	385,000 m3 completed.

SN	Key Action	Key Performance Indicator	Target (as per Budget Estimates)	Status
5.	Implementation of National Multi-Hazard Emergency Alert System	Common Alerting Protocol System operational on pilot basis	June 2019	Re-evaluation by BEC completed on 04 September 2019. As per the procurement department, there was no challenge after notifications sent to the Bidders. Letter of Award would be issued shortly.
6.	Coastal protection and Rehabilitation to address Beach Erosion	Number of coastal sites protected and rehabilitated	3	<p>Major Works have been completed at Case Noyale (December 2018), Grand Baie Sunset Boulevard (March 2019), Residence La Chaux (March 2019) and Baie du Tombeau (July 2019).</p> <p>Beach rehabilitation works have been completed at Flic en Flac (November 2018), Grand Sable La Grotte (December 2018), Grand Port Open Area (December 2018), Boie des Amourettes (December 2018) and Bambous Virieux (April 2019)</p>

## RISK MANAGEMENT, CITIZEN ORIENTED INITIATIVES AND GOOD GOVERNANCE

The Ministry views risk management as an integral part of its objectives of effective management of assets among others, and has thus put a number of measures in place to ensure that assets are safeguarded and for compliance with the principles of good corporate governance.

### 1.0 Service Delivery

The Ministry has a resource centre where the public in general including students, researchers and consultants can have access to documents, magazines and periodicals on environmental issues. Copies of Environmental Impact Assessment (EIA) reports are also available at the resource centre for public consultation.

The Ministry also accommodates an NGO desk that provides support and technical assistance to registered NGOs. Moreover, the NGO desk at the Resource Centre serves as a focal point for NGO meetings.

Complaints related to any environmental issues are recorded at the Pollution Prevention and Control Division and at the Police de l'Environnement. Subsequently, officers effect site visits, individually or in the company of the relevant enforcing agencies. Contravenants of the environmental law and regulations are, in the first place, directed to take appropriate mitigative measures to abate the pollution problems. In the event of persisting problems, Notices are served in accordance with the provisions of the Environment Protection Act 2002.

### 2.0 Safeguard of Assets and Data

A fixed asset register and an inventory system are in place for the safeguarding of Assets. Data stored in all electronic equipment are also protected as the latter can only be accessed by passwords.

### 3.0 Risk Assessment

An anti-corruption policy has been devised for the Ministry following which risk assessment was carried out to identify potential risk areas. Internal audits are also carried out at the Ministry so as to ensure that all procedures, including procurement procedures, are being strictly followed.

## IMPLEMENTATION PLAN – DIRECTOR OF AUDIT COMMENTS

### Audit Committee

An Audit Committee has been set up at the level of the Ministry to advise management on areas of concern and to ensure that corrective action is taken. The Audit Committee, inter-alia, evaluates the overall effectiveness of the internal control and risk management frameworks and considers whether recommendations made by the internal and external auditors have been implemented by Management.

**Table 14: Status on Actions taken following Performance Audit Report**

Issues (Report Ref)	DOA Comments	Proposed Measures	Unit/Agencies Responsible	Status of Actions taken/ Implementat ion Date
4.2.1	<p><b>Implementations and Monitoring of Activities:</b> The implementation of the measures will require constant monitoring of all infrastructural and non-infrastructural works undertaken by the stakeholders involved in risk-reduction. In line with its functions, this task should be carried out by NDRRMC and any corrective actions deemed necessary brought to the attention of the National Council. Monitoring of activities in relation to drains by the LDA and those related to flood hazard by any other stakeholders should also be brought to the attention of the National Council for better coordination.</p>	<p>It is to be noted that the NDRRMC has some specific mandate under the National Disaster Risk Reduction and Management Act 2016 to perform this task. The NDRRMC can provide all necessary supports to the LDA for enabling it to meet this objective. Additionally, there is one representative of the NDRRMC on the board of LDA where we provide our views and suggestions on drainage issues.</p>	<p>National Disaster Risk Reduction And Management Centre (NDRRMC)</p>	

Issues (Report Ref)	DOA Comments	Proposed Measures	Unit/Agencies Responsible	Status of Actions taken/ Implementat ion Date
4.2.2	<p><b>Monitoring Mechanism:</b> For a smooth implementation of activities, such as infrastructural works (construction of drains) and non-infrastructural work (DIA, review of National Development Strategy, finalisation of Wetland Bill, development of Land Drainage Master Plan, Disaster Risk Reduction in Development Process), there is a need to have an appropriate monitoring mechanism. All stakeholders should be required to submit a plan of work with proper actions and targets to the NDRRMC. It should be broken down into manageable short term plan with appropriate timelines and deliverables, and any difficulties faced by the different stakeholders should be discussed in meetings of the National Council.</p>	<p>It is to be noted that the NDRRMC has some specific mandate under the National Disaster Risk Reduction and Management Act 2016 to perform this task. However, now the LDA has under the Sections 5 and 6 of the Land Drainage Act 2017 the legal mandate for the monitoring of infrastructural works, it would be more appropriate for the LDA to do the constant monitoring of all infrastructural and non-infrastructural works undertaken by the stakeholders. The NDRRMC can provide all necessary supports to the LDA for enabling it to meet this objective. Additionally, there is one representative of the NDRRMC on the board of LDA where we provide our views and suggestions on drainage issues. A guideline for Drain Impact Assessment (DIA) has been prepared by the LDA, in collaboration with the Ministry of Social Security, National Solidarity and Environment and other concerned stakeholders with a view to mitigate flooding in new development projects. The Guideline has been finalised at the level of the EIA Committee and will be made public. The possibility of extending the DIA to major land development projects exempted from EIA (for e.g, NHDC, Property Development Scheme, Voluntary Retirement Scheme, Smart Cities and Morcellement Projects</p>	National Disaster Risk Reduction And Management Centre (NDRRMC)	

Issues (Report Ref)	DOA Comments	Proposed Measures	Unit/Agencies Responsible	Status of Actions taken/ Implementat ion Date
		<p>smaller than 5 hectares), is under consideration.</p> <p>The issue of Wetland Bill is being looked into under the UNDP supported GEF funded project entitled “Mainstreaming biodiversity into the management of the coastal zone in the Republic of Mauritius”. Consultant has already been recruited to work on the Wetland Bill. This component of the project started on 15 November 2018 and is expected to be completed by 14 October 2019.</p>		
4.2.3	<p><b>Studies and Surveys:</b></p> <p>The problems of flooding call for action, and the recommendations of studies and surveys to look into the issue of flooding should be considered for implementation.</p> <p>The difficulties faced in the implementations of the DRR Report 2013 should be used as a lesson in developing future plan by relevant authorities, such as the LDA and the NDRRMC.</p> <p>The LDA and the NDRRMC must ensure that the recommendations of their policies and plans are practicable before requiring implementation by the different players involved. This can be</p>	<p>Concerning practical policies and plans, the plans namely, the Land Drainage Master Plan and the National Disaster Risk Reduction and Management Action Plan are broken down into manageable short-term ones with appropriate timelines and deliverables.</p>	<p>National Disaster Risk Reduction And Management Centre (NDRRMC)</p>	

Issues (Report Ref)	DOA Comments	Proposed Measures	Unit/Agencies Responsible	Status of Actions taken/ Implementat ion Date
	<p>done by having consultations with various players, including the Consultants, before allocation of tasks and ensure responsibilities as per mandate, relevant expertise and availability of fund.</p> <p>As stated above, the plan should be broken down into manageable short term plan with appropriate timelines and deliverables, and it is important that it is endorsed by the different players. Once endorsed, the execution of the plan of work should be subject to supervision and monitoring by the NDRRMC.</p>			
4.2.4	<p>Develop a Risk-Based and Proactive Approach Once the scientific list of flood prone areas is completed, a risk-based approach should be adopted to achieve the best results possible using efficiently the resources available. An assessment of flood risk must be undertaken to understand which places are most at risk and in what circumstances, so that areas can be delineated as high, medium and low risk. This risk-based</p>	<p>In addition to the Land Drainage Master Plan, the Land Drainage Authority is in the process of creating and updating a Geographical Information Database for flood prone areas including extent of flooded areas, causes of flooding and possible mitigation measures, which will be used in determining priority drainage work.</p> <p>As to date 83 flood prone areas have already been mapped as per information gathered from site visits, NDRRMC and local authorities. The mapping of the remaining flood prone areas is ongoing.</p>	National Disaster Risk Reduction And Management Centre (NDRRMC)	<p>The services of a consultant has been hired for the audit of rivers. The Consultants are currently effecting their field surveys together with NDRRMC and concerned local authorities. The duration of the study will be within 6 month.</p>

Issues (Report Ref)	DOA Comments	Proposed Measures	Unit/Agencies Responsible	Status of Actions taken/ Implementat ion Date
	<p>approach will help in determining the area where infrastructural and non-infrastructural measures should be prioritised in a proactive manner.</p>	<p>The MSSNSESD has also launched a tender for the recruitment of a consultancy firm to carry out an audit of rivers and watercourses to assess their carrying capacity and identify flood-prone areas. Works are expected to start in June 2019 and will be over a duration of 6 months.</p> <p>Additional non-structural preparedness measures initiated by the NDRRMC:</p> <p>(i) Community Disaster Response Programme which aims to train and equip a team of volunteers from vulnerable areas to respond in a crisis situation or imminent disaster, give critical support to first responders and provide immediate assistance to victims. The programme empowers the group of volunteers through training on the basic techniques of fire safety, rope handling, first aids, water rescue activities, basic camp management, team building, sand bagging and other basic techniques. Vulnerable areas which have benefitted from the CDRP are Grand Sable, Bel Ombre, Canal Dayot, Fond du Sac, Poste de Flacq, Riviere du Poste, L'Amitié/Gokhoolah, Residence La Cure, Riviere des Galets, Agalega and Rodrigues. The NDRRMC also plans to extend the programme to other vulnerable regions in Mauritius and Outer Islands.</p> <p>For the FY 2019-2020, provision has been made to carry out</p>		<p>3 CDRPs were carried out at Bambous, vieux Grand Port and Cottage respectively during FY 2018-2019</p> <p>For the 40 high risk flood prone areas: Procurement of equipment is in progress for the conduction of the training. The list of the volunteers for the programme is in the process of finalisation by the Local Disaster coordinators.</p> <p>Contingency Plan for (i) :L'Amitié/Gokhoolah still in progress (ii)Cottage nearly finalised</p>



Issues (Report Ref)	DOA Comments	Proposed Measures	Unit/Agencies Responsible	Status of Actions taken/ Implementat ion Date
		<p>CDRP in 40 high risk flood prone areas. The NDRRMC together with the Local Authorities are aiming to complete the programme before the start of the forthcoming rainy season</p> <p>(ii) Development of Contingency Plans for vulnerable areas and essential facilities against flooding namely at Poste de Flacq, Canal Dayot, Sable Noir, Residence La Cure, Fond du Sac, Riviere des Galets, Poste de Flacq, Residence Argy, Cite Debarcadere, Camp Poorun, Cite Hibuscus, Cottage, Amitie/Gokoola, Bambous, Camp Manna/Bangladesh, Dr Jeetoo Hospital, Signal Mountain, Bagatelle Dam, etc</p> <p>(iii) Flood simulation exercises are regularly conducted both at national and local levels to prepare all first responders and vulnerable local communities and the population at large to better respond to disasters.</p> <p>(iv) A National Multi Hazard Emergency Alert System (NMHEAS) is being implemented for alerting the public prior and during a disaster. In the same vein, 2 mobile applications have been developed to send alert messages to subscribers before, during and after disasters. The NDRRMC has worked together with relevant organizations to produce emergency alert applications. These applications are meant to</p>		<p>Letter of acceptance issued to the successful bidder 'One2many' on 30 Sep. 2019</p>

Issues (Report Ref)	DOA Comments	Proposed Measures	Unit/Agencies Responsible	Status of Actions taken/ Implementat ion Date
		<p>provide real time information to the public at large on weather conditions as well as alerts on impending dangers and calamities in Mauritius:</p> <ul style="list-style-type: none"> <li>• With the Ministry of Technology, Communication and Innovation to produce the 'Emergency Alert App'.</li> <li>• With the Mauritius Telecom to produce the 'my.t weather' app.</li> </ul> <p>(v) Sensitisation and Awareness Campaigns on precautions to be taken during heavy rainfall/flooding are regularly performed at vulnerable areas such as Bel Ombre, Residence La Cure, Tranquebar/Camp-Manna, Pointe aux Sables, and Roches Bois.</p> <p>(vi) Recruitment of 3 Coordinators for Community Mobilisation and Local Community Support, Preparedness Team and 1 Information and Communication Manager since 2018 to promote the dissemination of information about hazard and risk to local communities as well as to the population at large.</p> <p>(vii) A protocol for heavy rainfall for the public sector has been implemented and a similar protocol for the private sector is almost finalised.</p> <p>(viii) A new protocol applicable during natural disasters (cyclones, floods, etc) is in place since December 2018. 15</p>		

Issues (Report Ref)	DOA Comments	Proposed Measures	Unit/Agencies Responsible	Status of Actions taken/ Implementat ion Date
		<p>measures have been recommended to improve the management of emergency shelters.</p> <p>(ix) Consultation held with WRU as from May 2014 for the dam safety component of the DRR Report 2013. Dam break analysis started with effect from 2016 by WRU. WRU already prepared Contingency Plan for La Ferme Reservoir and Bagatelle Dam (Phase I) for the Bagatelle in collaboration with the NDRRMC. WRU has already launched tender for the recruitment of experts to undertake the dam break analysis for all the dams in Mauritius. The contract is already allocated to Sp Piedrangeli of Italy and the project is ongoing.</p> <p>(x) The Ministry of Education is in the process of producing the School Safety Plans for schools. Additionally, MIE has introduced disaster risk reduction topics in school curriculum for the primary schools.</p> <p>(xi) Landslide Areas: The regions have been identified by the JICA as landslide prone areas namely Chittrakoot, Vallee Pitot and Quatre-Soeurs. At Chittrakoot countermeasure works have been carried out and an alarm system has been installed. For Vallee Pitot, alarm system has been put in place to alert the residents and evacuation plans have been developed and tested. At Quatre-</p>		

Issues (Report Ref)	DOA Comments	Proposed Measures	Unit/Agencies Responsible	Status of Actions taken/ Implementat ion Date
		<p>Soeurs, all the 11 concerned families have already been relocated in this current year.</p> <p>(xii) The NDRRMC held consultation with the Ministry of Housing and Lands in August 2014 to implement the recommendation regarding Sound spatial data infrastructure. The Ministry of Housing and Lands informed that it has already initiated action for the implementation of the National Spatial Data Infrastructure (NSDI), with the assistance of the Regional Centre for Mapping of Resources for Development (RCMRD). Two workshops were held by the Ministry of Housing and Lands.</p> <p>(xiii) The NDRRMC has collected geographically referenced disaster loss data including for flood from year 1960 up to 2018. The data for 1960 up to 2014 has been integrated in an online database known as DesInventar. The UNDP is funding a project known as DIMS (Disaster Information Management System) to enable the implementation of a customized online database for the Republic of Mauritius to store its disaster loss data. This project is ongoing.</p> <p>(xiv) The preparation of the topographic maps is the first stage for the development of danger zoning plans. The Ministry of Housing and Lands is</p>		<p>According to the 28th NDRRM Council, a subcommittee had to be set up under the chair of the MCSAR to work on the alignment of both documents (private and public protocol). A 1st subcommittee was held 27 August 2019 whereby the main differences between the 2 protocols were discussed (private and public). Comments from all stakeholders have been integrated and sent to SLO for views. Same has been submitted to the Business Mauritius for finalisation and implementati</p>

Issues (Report Ref)	DOA Comments	Proposed Measures	Unit/Agencies Responsible	Status of Actions taken/ Implementat ion Date
		preparing the topographic maps bearing scale 1:5000 for 15 priority areas due to limited funds. The Ministry of Housing and Lands has already prepared the topographic maps for 13 regions. Funding is being currently sought from the Green Climate Fund through the National Adaptation Plan (being coordinated by the Climate Change Division) for the preparation of danger zoning maps and plans for 15 priority flood prone areas in Mauritius.		on after approval of the council.
4.2.5	<b>Evaluation of Measures Taken:</b> Evaluation of the results of infrastructural and non-infrastructural works must be undertaken to assess progress. To be able to evaluate the measures, stakeholders should develop overall and immediate outcomes target and indicators for those under their respective responsibilities.	Modalities for the periodic evaluation of infrastructural works and non-infrastructural measures taken are being considered at the level of the LDA and other relevant authorities to monitor and assess their effectiveness.	National Disaster Risk Reduction and Management Centre (NDRRMC)	
4.2.6	<b>Improved and Well Maintained Drains:</b> In situation where resources are limited, a programme of work for the construction and maintenance based on a risk assessment of likelihood, and impacts of flood should be developed by each stakeholder, and adopting different return	A Coordination and Maintenance Committee on drainage infrastructure has been set up at the level of the LDA to review maintenance practices, analyse gaps and needs and discuss on policy issues. As at date, the Committee has met on ten occasions. In the first semester of 2018, the Committee analysed the gaps and needs of Local Authorities and prepared a maintenance proposal for the	National Disaster Risk Reduction and Management Centre (NDRRMC)	

Issues (Report Ref)	DOA Comments	Proposed Measures	Unit/Agencies Responsible	Status of Actions taken/ Implementat ion Date
	<p>period of drains based on the risk assessment of the area should be considered.</p>	<p>Budget. In line with the Budget proposal, Rs 75 million have been allocated to the Ministry of Local Government and Outer Islands for the Financial Year 2018/2019 to reinforce the capacity of the Local Authorities in terms of machinery and equipment. The procurement process for the machinery and equipment has already been initiated by the Ministry of Local Government and Outer Islands.</p>		
4.2.7	<p><b>Planned Development:</b> Areas delineated as high risk flood prone should not be subject to development. For those areas not delineated as high risk flood prone areas, development should be controlled by a proper planning to prevent and reduce the risk arising from new developments, and to ensure that development in one place does not cause problems in another. Thus, the incorporation of the DIA as part of the EIA should not be delayed given the urgent need of controlling the risk of flooding. Additionally, the Drain Impact Assessment Guideline should contain conditions that must be strictly followed. For those morcellement</p>	<p>In addition to the introduction of the guideline for the Drainage Impact Assessment initially mentioned, the gap analysis which is being carried out for the formulation of the National Disaster Risk Reduction and Management Policies, Strategic Framework and Action Plan will take into consideration new developments and ensure that development in one place does not cause problems in another region. The Gap Analysis Report is in the process of being finalised at the level of the NDRRM Council.</p>	<p>National Disaster Risk Reduction and Management Centre (NDRRMC)</p>	

Issues (Report Ref)	DOA Comments	Proposed Measures	Unit/Agencies Responsible	Status of Actions taken/ Implementat ion Date
	<p>projects not falling under the requirement of an EIA, the LDA, in collaboration with other stakeholders, should investigate on whether the possibility of flooding is real in that particular area. The promoter, though exempt from EIA, should then be required to submit a plan on how to reduce the likelihood of flood from surface water run-off as in Singapore where all new developments and re-developments of 0.2 hectares or more required the implementation of 'source' solutions to slow down storm water run-off entering the public drainage system.</p>			
4.2.8	<p><b>Better Wetland Management:</b> Wetlands and any other environmentally sensitive areas should be subject to close monitoring given that clearances are often given to development within or near wetlands. Ramsar Clearances should be closely monitored. This responsibility should be clearly determined and assigned to a Ministry/Department. For both public and</p>	<p>Pilot projects for real-time monitoring of water level in Le Pouce Stream and at Canal Dayot Port- Louis have been initiated. In addition, a National Flood Monitoring system is under consideration for funding under the Green Climate Fund through Agence Française de Développement.</p>	<p>National Disaster Risk Reduction and Management Centre (NDRRMC)</p>	

Issues (Report Ref)	DOA Comments	Proposed Measures	Unit/Agencies Responsible	Status of Actions taken/ Implementat ion Date
	private wetlands found in areas which are critically prone to flood, after a thorough analysis on risk of flooding, Government should ensure that these are not subject to development.			





PART III

FINANCIAL PERFORMANCE

## FINANCIAL HIGHLIGHTS

The Ministry of Social Security, National Solidarity and Environment and Sustainable Development (Environment and Sustainable Development Division) is under the Vote Item 13-2 and has six Expenditure Subheads under its control as follows:

13-201: General

13-202: Environmental Protection and Conservation

13-203: Monitoring, Uplifting and the Embellishment of the Environment

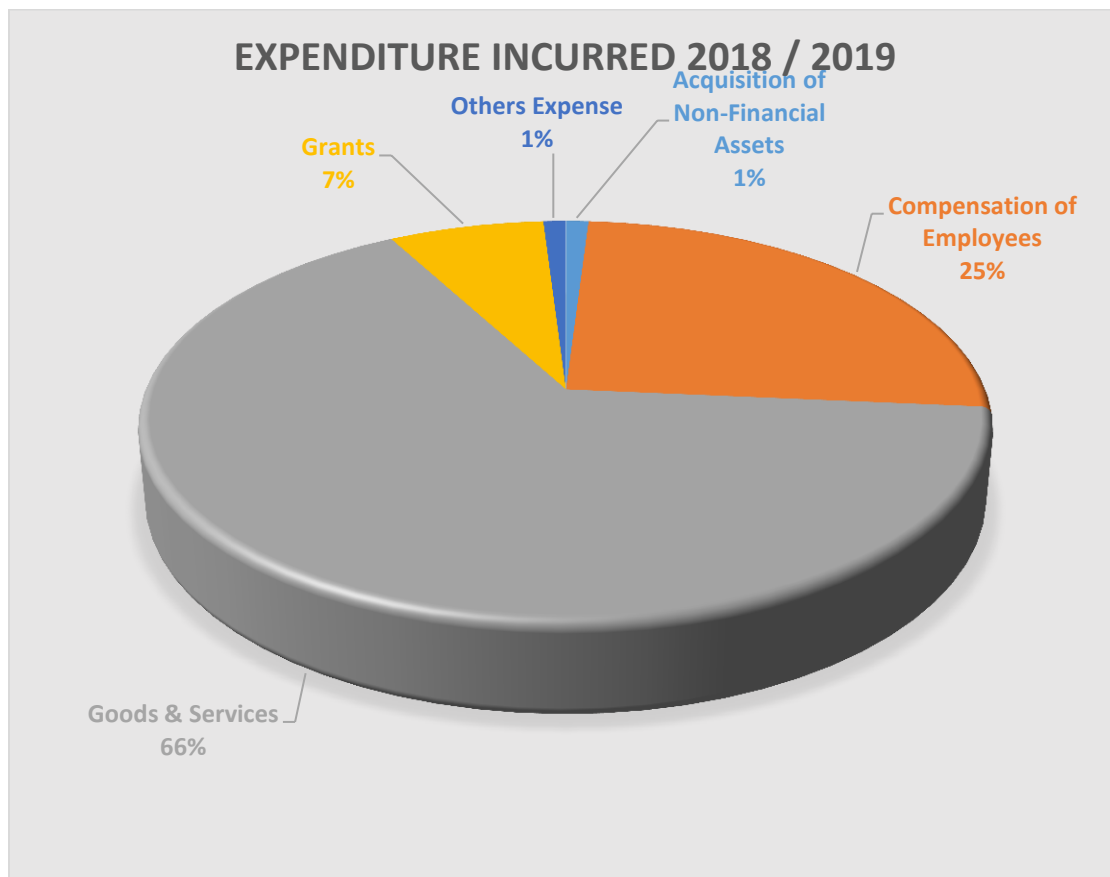
13-204: Sustainable Development and Climate Change

13-205: Solid and Hazardous Waste and Beach Management

13-206: National Disaster Risk Reduction

### Expenditure

Figure 12 below provides an illustration of expenditure incurred by the Environment and Sustainable Development Division in FY 2018 / 2019 under Vote 13-2.



**Figure 12: Expenditure Incurred 2018 – 2019**

Table 15: Summary of Expenditures

<b>VOTE 13-2 : Ministry of Social Security, National Solidarity, and Environment and Sustainable Development (Environment and Sustainable Development Division)</b>			
<b>SUMMARY OF EXPENDITURE by SUB-HEAD</b>			
Details	2017/18 Actual	2018/19 Estimates	2018/19 Actual
<b>VOTE 13-2 TOTAL EXPENDITURE</b>	<b>1,256,057</b>	<b>1,220,000</b>	<b>1,113,762</b>
Recurrent	1,010,136	1,141,200	1,062,457
Capital	245,921	78,800	51,305
<b>Sub-Head 13-201: GENERAL</b>	<b>78,373</b>	<b>77,900</b>	<b>77,983</b>
Recurrent Expenditure	68,011	69,400	70,825
Capital Expenditure	10,362	8,500	7,158
<b>Sub-Head 13-202: ENVIRONMENTAL PROTECTION AND CONSERVATION</b>	<b>131,107</b>	<b>122,200</b>	<b>69,361</b>
Recurrent Expenditure	79,935	121,000	69,215
Capital Expenditure	51,172	1,200	146
<b>Sub-Head 13-203: MONITORING, UPLIFTING AND EMBELLISHMENT OF THE ENVIRONMENT</b>	<b>200,931</b>	<b>200,900</b>	<b>176,153</b>
Recurrent Expenditure	155,354	187,200	167,553
Capital Expenditure	45,577	13,700	8,599
<b>Sub-Head 13-204: SUSTAINABLE</b>	<b>9,605</b>	<b>11,000</b>	<b>9,471</b>
Recurrent Expenditure	9,605	11,000	9,471
Capital Expenditure		-	0
<b>Sub-Head 13-205: SOLID &amp; HAZARDOUS WASTE AND BEACH MANAGEMENT</b>	<b>795,277</b>	<b>767,100</b>	<b>757,630</b>
Recurrent Expenditure	679,791	728,300	727,172
Capital Expenditure	115,486	38,800	30,457
<b>Sub-Head 13-206: NATIONAL DISASTER RISK REDUCTION</b>	<b>40,764</b>	<b>40,900</b>	<b>23,165</b>
Recurrent Expenditure	17,440	24,300	18,221
Capital Expenditure	23,324	16,600	4,944
<b>TOTAL</b>	<b>1,256,057</b>	<b>1,220,000</b>	<b>1,113,762</b>

## STATEMENTS OF REVENUE AND EXPENDITURE

**Table 16: Statement of Revenue and Expenditure**

Statement of Expenditure under Vote 13-2				
VOTE 13-2 : Ministry of Social Security, National Solidarity, and Environment and Sustainable Development (Environment and Sustainable Development Division)				
Sub-Head 13-201: GENERAL				
STATEMENT OF EXPENDITURE				
Economic Details		2017-2018	2018-2019	2018-2019
Category		Actual	Estimates	Actual
21	Compensation of Employees	39,916,208	43,285,000	43,069,964
22	Goods and Services	25,997,734	23,300,000	25,602,012
25	Subsidies	-	-	-
26	Grants	2,096,733	2,815,000	2,152,788
27	Social Benefits	-	-	-
28	Other Expense	8,464,254	7,000,000	5,896,907
31	Acquisition of Non-Financial Assets	1,897,970	1,500,000	1,261,084
32	Acquisition of Financial Assets	-	-	-
<b>Total</b>		<b>78,372,899</b>	<b>77,900,000</b>	<b>77,982,755</b>

Table 17: Statement of Expenditure- Environmental Protection and Conservation

<b>Sub-Head 13-202: ENVIRONMENTAL PROTECTION AND CONSERVATION</b>				
<b>STATEMENT OF EXPENDITURE</b>				
<b>Economic Details</b>		<b>2017-2018</b>	<b>2018-2019</b>	<b>2018-2019</b>
<b>Category</b>		<b>Actual</b>	<b>Estimates</b>	<b>Actual</b>
21	Compensation of Employees	49,827,600	54,600,000	51,229,477
22	Goods and Services	30,107,000	66,400,000	17,984,812
25	Subsidies	-	-	-
26	Grants	-	-	-
27	Social Benefits	-	-	-
28	Other Expense	-	-	-
31	Acquisition of Non-Financial Assets	51,172,074	1,200,000	146,197
32	Acquisition of Financial Assets	-	-	-
	<b>Total</b>	<b>131,106,674</b>	<b>122,200,000</b>	<b>69,360,486</b>

Table 18: Statement of Expenditure- Monitoring, Uplifting and the Embellishment of the Environment

<b>Sub-Head 13-203: MONITORING, UPLIFTING AND THE EMBELLISHMENT OF THE ENVIRONMENT</b>				
<b>STATEMENT OF EXPENDITURE</b>				
<b>Economic Details</b>		<b>2017-2018</b>	<b>2018-2019</b>	<b>2018-2019</b>
<b>Category</b>		<b>Actual</b>	<b>Estimates</b>	<b>Actual</b>
21	Compensation of Employees	137,755,733	160,400,000	144,204,725
22	Goods and Services	17,598,301	26,800,000	23,348,365
25	Subsidies	-	-	-
26	Grants	-	-	-
27	Social Benefits	-	-	-
28	Other Expense	-	-	-
31	Acquisition of Non-Financial Assets	45,577,079	13,700,000	8,599,148
32	Acquisition of Financial Assets	-	-	-
	<b>Total</b>	<b>200,931,113</b>	<b>200,900,000</b>	<b>176,152,238</b>

Table 19: Statement of Expenditure- Sustainable Development and Climate Change

<b>Sub-Head 25-204: SUSTAINABLE DEVELOPMENT AND CLIMATE CHANGE</b>				
<b>STATEMENT OF EXPENDITURE</b>				
<b>Economic Details</b>		<b>2017-2018</b>	<b>2018-2019</b>	<b>2018-2019</b>
<b>Category</b>		<b>Actual</b>	<b>Estimates</b>	<b>Actual</b>
21	Compensation of Employees	9,184,918	9,900,000	9,024,919
22	Goods and Services	419,623	1,100,000	446,314
25	Subsidies	-	-	-
26	Grants	-	-	-
27	Social Benefits	-	-	-
28	Other Expense	-	-	-
31	Acquisition of Non-Financial Assets	-	-	-
32	Acquisition of Financial Assets	-	-	-
	<b>Total</b>	<b>9,604,541</b>	<b>11,000,000</b>	<b>9,471,233</b>

Table 20: Statement of Expenditure for the Solid Waste Management Division

<b>Sub-Head 213-205: SOLID AND HAZARDOUS WASTE AND BEACH MANAGEMENT</b>				
<b>STATEMENT OF EXPENDITURE</b>				
<b>Economic Details</b>		<b>2017-2018</b>	<b>2018-2019</b>	<b>2018-2019</b>
<b>Category</b>		<b>Actual</b>	<b>Estimates</b>	<b>Actual</b>
21	Compensation of Employees	28,328,825	32,025,000	29,151,979
22	Goods and Services	615,714,649	651,500,000	653,280,897
25	Subsidies	-	-	-
26	Grants	73,747,712	74,775,000	74,739,730
27	Social Benefits	-	-	-
28	Other Expense	-	3,400,000	-
31	Acquisition of Non-Financial Assets	77,485,764	5,400,000	457,442
32	Acquisition of Financial Assets	-	-	-
	<b>Total</b>	<b>795,276,950</b>	<b>767,100,000</b>	<b>757,630,048</b>

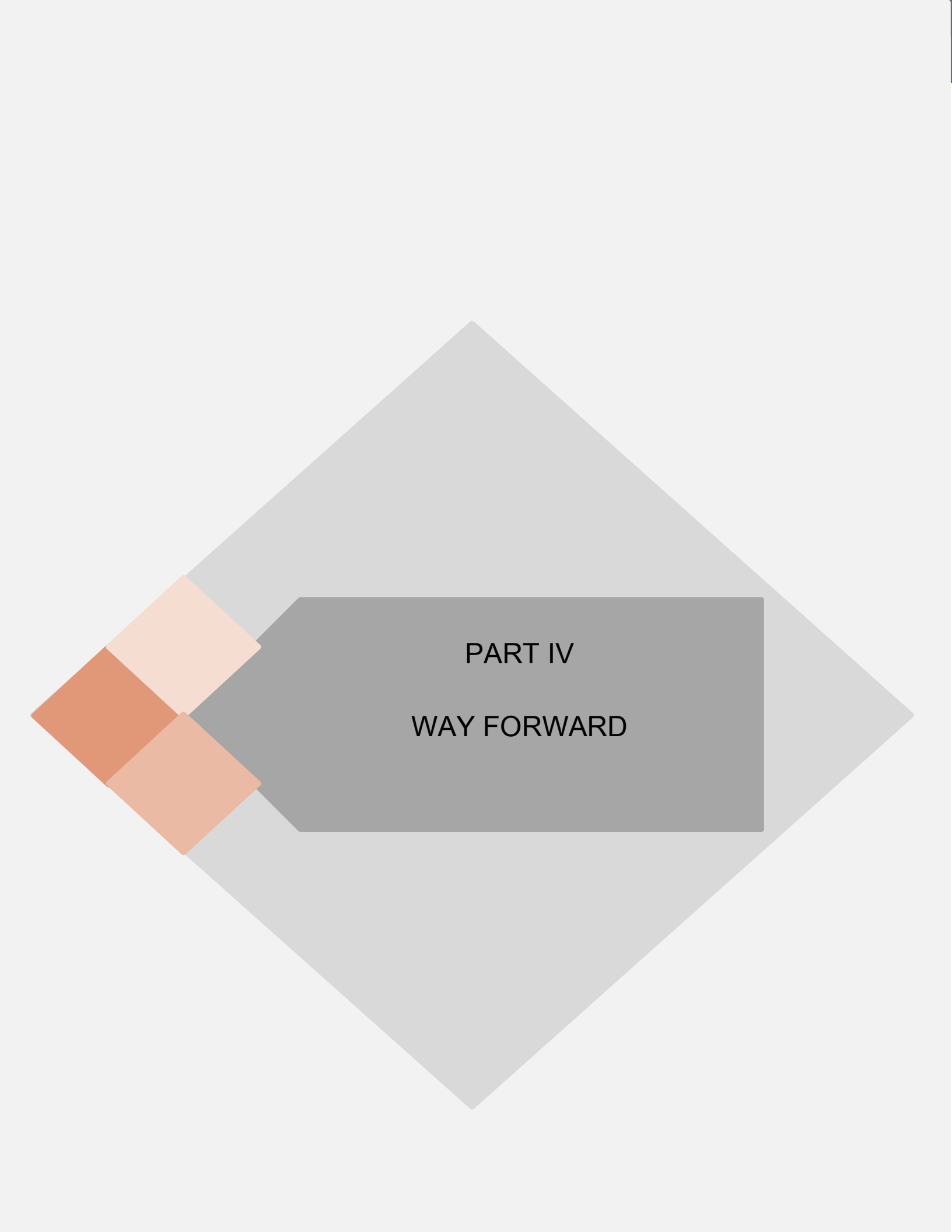
**Table 21: Statement of Expenditure for the National Disaster Risk Reduction and Management Centre**

Economic Details		2017-2018	2018-2019	2018-2019
<b>Sub-Head 13-206: NATIONAL DISASTER RISK REDUCTION</b>				
<b>STATEMENT OF EXPENDITURE</b>				
Category		Actual	Estimates	Actual
<b>21</b>	<b>Compensation of Employees</b>	5,705,951	8,185,000	6,416,347
<b>22</b>	<b>Goods and Services</b>	11,734,082	16,115,000	11,804,509
<b>25</b>	<b>Subsidies</b>	-	-	-
<b>26</b>	<b>Grants</b>	-	-	-
<b>27</b>	<b>Social Benefits</b>	-	-	-
<b>28</b>	<b>Other Expense</b>	9,070,000	7,500,000	4,944,000
<b>31</b>	<b>Acquisition of Non-Financial Assets</b>	14,253,971	9,100,000	-
<b>32</b>	<b>Acquisition of Financial Assets</b>	-	-	-
	<b>Total</b>	<b>40,764,004</b>	<b>40,900,000</b>	<b>23,164,856</b>

Table 22: Summary of Projects funded under the National Environment Fund

National Environment Fund				
PSIP Code	Description	Implementing Agency	2018/19 Estimate	2018/19 Actual
(Rs) Million				
<b>Rehabilitation, Protection and Management of Beaches and Lagoons Programme</b>			<b>160.00</b>	<b>77.71</b>
D0089	Coastal Rehabilitation-(AFB-Climate Change Adaptation Programme)	M/Environment	50.00	39.17
D008901	<i>Refuge Centre at Quatre Soeurs</i>		2.00	1.47
D008902	<i>Coastal Adaptation Works at Mon Choisy</i>		30.00	14.00
D008903	<i>Coastal Adaptation Works at Riviere des Galets</i>		18.00	23.70
D0167	Replacement of Casuarina Trees on Beaches	M/Environment	10.00	-
D0032	Rehabilitation of Beaches	M/Environment	90.00	36.41
	<i>of which implementation of Beach Management Plan</i>	<i>Beach Authority</i>	<i>10.00</i>	<i>-</i>
D0033	Reprofiling of Beaches	M/Environment	10.00	2.13
<b>Flood Management Programme</b>			<b>965.00</b>	<b>-</b>
D0043	Construction and Upgrading of Drains	PMO-NDU	750.00	-
A0398	Construction of drains across the island	M/Local Govt	100.00	-
D0173	Machinery and equipment for cleaning of drains	M/Local Govt	75.00	-
E0151	Acquisition of Digital Elevation Model	Land Drainage Authority	40.00	-
<b>Clean-Up Mauritius and Embelishment Programme - "Moris Nou Zoli Pei"</b>			<b>165.00</b>	<b>25.93</b>
A0399	Cleaning, Rehabilitation and Upgrading of Drains, Bridges and Rivers	M/Local Govt	20.00	-
D0037	Clean Mauritius Programme	M/Environment	50.00	-
D0042	Cleaning and Embellishment of places of worship and other public sites	M/Environment	20.00	21.81
D0041	Improvement/Upgrading/Rehabilitation of Rivers	M/Environment	10.00	4.12
D0161	Acquisition of Compactor and Tipper Lorries	M/Local Govt	65.00	-
<b>Solid Waste Management Programme</b>			<b>105.00</b>	<b>69.46</b>
D0168	Asbestos Treatment Programme in Ex-CHA Houses	M/Environment	20.00	0.92
D0053	Mare Chicose Landfill Site--Modified Cell 7	M/Environment	83.00	68.54
D005303	<i>Mare Chicose Landfill site- Cell 7</i>		<i>43.00</i>	<i>43.43</i>
D005304	<i>Optimisation of landfill space at the Mare Chicose landfill - "Wedge Works"</i>		<i>30.00</i>	<i>23.16</i>
D005305	<i>Consultancy Services for Vertical Expansion of the Mare Chicose Landfill Site</i>		<i>10.00</i>	<i>1.95</i>
	Waste Recycling Framework		2.00	-
<b>Landslide Management Programme</b>			<b>170.00</b>	<b>-</b>
C0875	Landslide works on Terre Rouge - Verdun	M/Public Infrastructure	138.00	-
D0123	Landslide Management at Morcellement Hermitage Coromandel	M/Local Govt	2.00	-
C0734	Landslide works at Chamarel	M/Public Infrastructure	30.00	-
<b>Disaster Risk Reduction Operations</b>			<b>25.00</b>	<b>-</b>
A0273	National Multi-Hazard Emergency Alert System	M/Environment	25.00	-
D0096	Solar Water Heater Scheme	M/Environment		21.74
<b>TOTAL - National Environment Fund</b>			<b>1,590.00</b>	<b>194.84</b>





PART IV  
WAY FORWARD

## Strategic Direction

With a view to achieving our engagement towards a “cleaner, greener and safer” Mauritius, this Ministry will:

- enhance the climate change adaptation and mitigation policies;
- implement effective disaster risk reduction and management for enhancing public safety;
- domesticate international environmental commitments and harmonise the implementation of Multilateral Environmental Agreements (MEAs);
- enhance pollution control and enforcement as well as monitor ambient air quality in Mauritius;
- reduce vehicular emissions and move towards a more sustainable land transport sector;
- devise and implement appropriate legal and policy framework regarding environment related issues;
- implement coastal protection and rehabilitation works to increase the resilience of our beaches and address immediate concerns;
- ensure sustainable solid waste management through proper resources recovery and recycling with a view to diverting maximum disposal of wastes from landfilling;
- strengthen coordination on Disaster Risk Reduction across relevant institutions and sectors; and
- re-engineer this Ministry’s processes to generate improvements in critical measures in quest for excellence.