



Republic of Mauritius

Maurice Ile Durable

Policy, Strategy and Action Plan



Ministry of Environment and Sustainable Development

May 2013

Government of Mauritius

Maurice Ile Durable Policy, Strategy and Action Plan

Final Report

May 2013



Ministry of Environment and Sustainable Development

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Acknowledgments

The Ministry of Environment & Sustainable Development acknowledges the support of the Agence Française de Développement and the European Union, the guidance of Prof. Joël De Rosnay, Special Adviser to the Hon. Prime Minister and of the Strategic Committee as well as the contribution of the Commission on MID and all Ministries and Organisations concerned in the preparation of this Maurice Ile Durable Policy, Strategy and Action Plan report.

Basic Statistics

	Indicators	Units	2002	2011 ¹
Environmental Indicators				
1	Total land area ²	000ha	196.9	196.9
2	Irrigated land	ha	21,222	19,885
3	Forest area (as a % of total land area)	%	30.4	25.6
4	Land protected areas	ha	13,973	14,879
5	Marine protected areas	Ha	7,190	7,216
6	Threatened plant species (NPCS) ³	%	88
7	Threatened animal species (NPCS)	%	89
8	Total fish catch	Tons	9,318	5,270
9	Mean catch per fisherman day	Kg	4.3	6.9
10	Total carbon dioxide emission	000 tons	2,973.0	3,640.8
11	Per capita carbon dioxide emission	Tons	2.2	2.8
12	Mean annual rainfall	Millimetres	2,082	1,945
13	Annual freshwater abstraction	Mm ³	726	571
14	Daily per capita domestic water consumption	Litres	157	162
15	Daily per capita solid waste generated	Kg	0.8	0.9
16	Total electricity generated	Gwh	1,949	2,730
17	Per capita primary energy requirement	Toe	1.0	1.1
18	Per capita final energy consumption	Toe	0.6	0.7
19	Energy intensity	Toe per Rs 100,000 GDP at 1990 prices	1.0	1.4
20	Ecological footprint	Gha/person	4.26
Socio-economic Factors				
1	Gross Domestic Product (GDP) at market prices	R Million	145,055	323,993
2	Sectoral contribution to GDP			
	<i>Agriculture</i>	%	5.9	3.7
	<i>Manufacturing</i>	%	21.6	17.7
	<i>Construction</i>	%	5.4	6.5
	<i>Wholesale and retail trade</i>	%	11.1	11.8
	<i>Hotels and restaurants</i>	%	6.6	7.1
	<i>Transport and communications</i>	%	13.2	9.2
	<i>Financial intermediation and business services</i>	%	8.4	10.1
	<i>Other</i>	%	27.8	34.0
3	GDP annual growth rate (basic prices)	%	1.6	3.9
4	Per capita GDP at market prices	R	119,833	251,095
5	Per capita GDP in US dollars	US\$	3,999	8,734
6	Investment	R Million	31,075	76,722
7	Exports (include ship's stores and bunkers)	R Million	53,893	75,916
8	Imports	R Million	64,608	148,081
9	Population (mid-year)	000	1,210.0	1,286
10	Population annual growth rate	%	0.9	0.4
11	Population density (per kilometre square)	Number	615	653
12	Total labour force	000	540.9	582.8
13	Total employment	000	490.1	536.7
	<i>Agriculture (as a % of total)</i>	%	9.6	7.9
	<i>Manufacturing (as a % of total)</i>	%	28.5	20.1
14	Unemployment rate	%	9.7	7.9
15	Inflation rate	%	6.4	6.5
16	Human Development Index	-	0.672 ⁴	0.728
17	Tourist arrivals	000	681.6	964.6

¹ Provisional

² Excluding Agalega and St Brandon

³ National Parks and Conservation Service

⁴ For year 2000

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Abbreviations

Abbreviation	Full term
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APRM	African Peer Review Mechanism
AREU	Agricultural Research and Extension Unit
BCAC	Building Control Advisory Council
BPOA	Barbados Programme of Action
CCESD	Climate Change Education for Sustainable Development
CEB	Central Electricity Board
CMA	Conservation Management Areas
CMREM	Centre for Marine Renewable Energy Mauritius
CPD	Continued Professional Development
CSI	Corporate Social Investment
CSO	Central Statistics Office
CSR	Corporate and Social Responsibility
CWA	Central Water Authority
DOE	Department of Environment
DPK	Dual Purpose Kerosene
EEMO	Energy Efficiency Management Office
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EMP	Environmental Management Plans
EoL	End of Life
EPA	Environment Protection Act
EPR	Extended Producer Responsibility
ESA	Environmentally Sensitive Areas
ESM	Environmental Sound Management
ESPA	Energy Supply Purchase Agreement
ESTP	Economic and Social Transformation Plan
FDI	Foreign Direct Investment
FLIS	Forest Land Information System
GDP	Gross Domestic Product
GIS	Geographic Information System
GoM	Government of Mauritius
GRI	Global Reporting Index
HDI	Human Development Index

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Executive Summary

MID Policy, Strategy and Action Plan



MID Goals and Targets

Maurice Ile Durable places people at the heart of sustainable development.

“Maurice Ile Durable is essentially a vision that seeks to transform the environmental, economic and social landscape of our country. It belongs to each and every one of us. MID seeks to build up capital, not only for our generation but for generations to come. The MID vision is embedded in a strategic framework embracing five development pillars, namely Education, Environment, Energy, Employment and Equity.”

Dr. The Honourable Navinchandra Ramgoolam, Opening Ceremony of the Workshop on MID, 01 December 2010

Maurice Ile Durable (MID)

MID is a societal project that aims to deliver sustainable growth, with a vision for Mauritius to become a model of sustainable development.

Announced in 2008, the roots of MID lie in the Government's response to the global energy crisis of 2007.

However, MID now aims to facilitate economic growth that respects the limitations of natural resources; a growth that is delivered by an empowered population, able to grasp the new opportunities of a green economy; and to distribute wealth equitably.

The MID process follows the Green Paper in April 2011. It has been highly participatory, taking on board the aspirations of the society at large, in order to create a strong sense of belonging to the nation.

The Goal of MID

The goal of MID is to achieve sustainable development. A specific goal has been set for each of the five 'Es':

Energy – to ensure that the Republic of Mauritius is an efficient user of energy, with its economy decoupled from fossil fuel.

Environment – to ensure sound environmental management and sustainability of our ecosystem services.

Employment/Economy – to green the economy with decent jobs, offering long-term career prospects.

Education – to have an education system that promotes the holistic development of all citizens.

Equity – to ensure that all citizens are able to contribute to the Republic's continuing growth and share its combined wealth.

Targets

MID Realisation Indicators will make it possible to track progress in each of the five Es.

The main targets are:

Energy

- Achieve the national target of 35% renewable energy by 2025.
- Reduce energy consumption in non-residential and public sector buildings by 10% by 2020.

Environment

- Meet the environmental sustainability targets of the Millennium Development Goals.
- Reduce the ecological footprint to be in the upper quartile of performance of similar income nations, by 2020.

Employment/Economy

- Increase the percentage of green jobs, from 6.3% in 2010, to 10% by 2020.
- Maintain or improve position in the World Economic Forum's International Competitiveness Index.

Education

- Achieve 100% MID literacy by 2020.
- Be an internationally recognised knowledge hub for sustainable development in the region by 2020.

Equity

- Improve the position of the Republic of Mauritius in the World Poverty Index.
- Improve current status in the Gini coefficient of income inequality.

MID Vision

We commit to mainstream sustainable development with a particular focus on the five Es.

Energy

1. Our nation adopts a sustainable lifestyle with a more efficient use of energy in all sectors.
2. Our nation is less dependent on fossil fuels through increased utilisation of renewable energy.
3. Our land use planning, buildings, transport systems and infrastructure are eco-friendly, efficient and safe.

Environment

1. Our nation is environment-conscious, adopts a sustainable lifestyle and acts responsibly.
2. Our natural resources including biodiversity, historical and cultural heritage are effectively managed, protected, monitored and used in a sustainable manner.
3. Our nation enjoys security in terms of water and food and a high quality of life in a green, zero waste and pollution free environment.

Employment/Economy

1. More employment opportunities are created in an economy that is green, inclusive, innovative, resilient, robust and diversified.
2. Our economy provides an eco-friendly working environment that ensures work life balance for sustainable human development and family welfare.
3. Our economy is forged so as to constantly promote green growth in line with sustainable consumption and production patterns.

Education

1. Our educational system promotes the sustainable development of skills, knowledge and values through lifelong learning to ensure the holistic development of the citizen.
2. Our formal and informal education systems foster responsible, green and civic values in all age groups to achieve a caring society.
3. The potential of our human resource is fully tapped to foster social equity along with enhancing economic, political, environmental and cultural well-being.

Equity

1. Our sustainability model revolves around putting people at the centre of development.
2. Our society and institutions are committed to the principles of equity and social justice and participate fully in poverty alleviation and social welfare, in line with the Millennium Development Goals.
3. Our State provides for the protection, welfare, development and empowerment of vulnerable groups.



Challenges



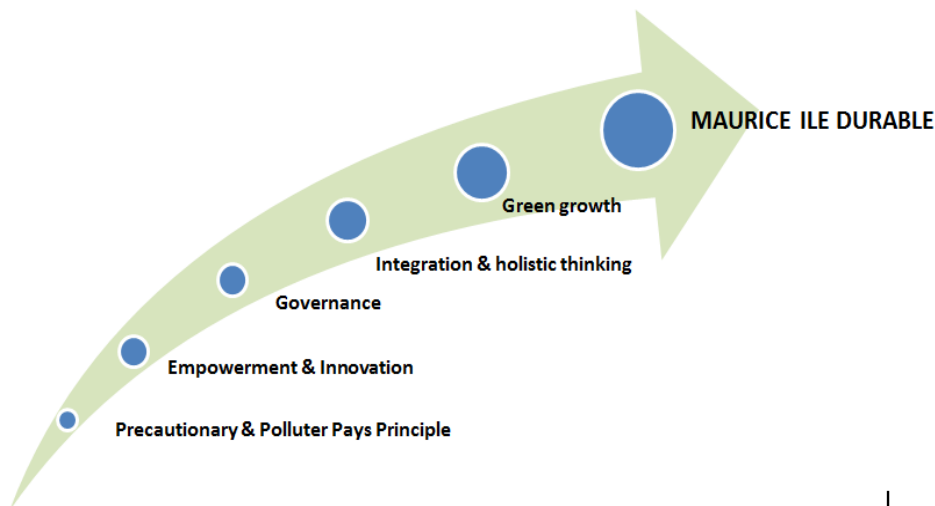
There has been some progress in most areas applicable to MID, but still, there are some gaps and challenges.

Some of the principal challenges are:

- Establishing a clear pathway to achieve national and sectoral targets.
- Ensuring that changes are delivered as per established priority programmes, where the pathways have been clearly determined.
- Ensuring that all Ministries give priority to the realisation of MID as well as commitment to seek funding and timely implementation of MID projects.
- Providing clear guidance on what would make a project, action, or Government plan 'MID-Compliant'.
- Reversing the decline of ecosystems and the natural environment.
- Ensuring that future investment in land development and infrastructure does not further reduce the sustainability of the Republic.
- Balancing the pressure and making the right choices for renewed economic growth, interlinking with the other aspects of MID objectives.
- Encouraging growth of the green economy.
- Expanding the ocean economy in line with the MID vision. A coordinated approach to developing the ocean economy could ensure growth of this important sector.
- Collecting reliable and adequate data in order to monitor progress in realising the MID vision and to keep track of overall progress.

**Maurice Ile Durable
Challenges**

MID Policy Objectives



The objective of MID is the pursuit of sustainable development by all sectors, groups, and individuals in the Republic of Mauritius.

Every person must be aware of and empowered to make informed choices at the individual, household, business, community and national levels. These choices include the way goods and services are produced and consumed and how waste is disposed of.

MID is fundamentally dependent on collaboration across the public, private and non-profit sectors and will transcend political cycles without having a life-expectancy attributed to it.

The MID objectives will be promoted through “quality of life” being endorsed as the overarching goal (composed of economic, social, cultural and personal factors).

MID requires that our biophysical limits are respected and our natural and cultural resources are sustainably managed both for the present and future generations.

MID will transcend political cycles without having a life-expectancy attributed to it.

Objectives of MID Policy

The main objectives of this policy are:

- To embed the principles of sustainable development into the national identity of Mauritians where this is reflected in every aspect of decision making.
- To plan for longterm development and success in developing a vibrant economy, sound environment and culturally diverse and healthy society.
- To make the Republic of Mauritius a safe, fair, equitable, and sustainable place for generations to come.
- To increase the resilience of our nation to unpredictable and shifting external factors such as climate change or global crises.
- To stimulate sustainable development stewardship in all segments of Mauritian society and inculcate, through education and sensitisation, the principles of wise consumption and production choices

**Maurice Ile Durable
MID Objectives**

Guiding Principles for MID

Guiding Principles for MID

MID Guiding Principles set out the spirit in which Government will strive to deliver on MID activities and its application

- **Empowerment**
Empowering individuals to take/assume personal responsibility at home, at work and during their leisure time.
- **Governance**
Trust, transparency, honesty and accountability are the cornerstones of a sustainable society.
- **Inclusive Partnerships and Cooperation**
Delivering through partnerships and coordination across Ministries, public and private sectors, voluntary/community sectors and with civil society. Interaction must also cut across the local, national and, where appropriate, international dimensions.
- **Integration and Holistic Thinking**
Adopting a holistic approach to decision-making and ensuring that basic ecological and societal integrity is maintained and supported.
- **Internalisation**
Accounting for the full cost of environmental and social degradation within our decision-making process.
- **Science-Based Governance**
Promoting a culture of knowledge, education, awareness and accountability through the use of best science and data for effective and informed decision making. The information shall be accessible and understood by all stakeholders. Traditional and indigenous knowledge shall also be given due recognition and be fully utilized.
- **Implementation and Delivery**
Following on actions implemented, monitoring and enforcement are essential to effective delivery.
- **Precautionary Principle**
In case there are credible threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a justification to postpone cost-effective measures to prevent impacts or to condone activities that exacerbate a problem.
- **Green growth**
Balancing and including economic growth and development opportunities in a sustainable manner.
- **Innovation**
Essential to the stimulation of ideas, market development, social development and the creation of green economic activity.
- **Polluter Pays Principle**
Applied to encourage and support the rational use of our resources and the potential impacts on our society. The essence is to instil responsibility for the consequence of our actions /activities.
- **Preventive Approach**
Wherever feasible and practical, measures to avoid activities which result in significant adverse impacts on the environment and society shall be sought.
- **Communication**
Ensuring ongoing communication between sectors of society as well as with the international community to facilitate the continued growth and evolution of sustainable development.
- **Global Governance**
Working cooperatively (regionally as well as internationally) to develop and apply comprehensive and equitable solutions.

Institutional Arrangement on MID

As challenges increase, the present institutional framework will need further consolidation in order to accelerate the pace of realising MID.

Mauritius has been pursuing a sustainable development strategy in its economic and social development plans despite inherent vulnerabilities, such as capacity and financial constraints.

As challenges increase the present institutional framework will need further consolidation in order to facilitate the effective implementation of the MID Action Plan and meet the objectives as provided for in the Government Programme 2012-2015 on Sustainability.

The Commission on MID, which operates under the aegis of the Prime Minister's Office, will be strengthened as the driver of MID. It will report to Government and will have as responsibility to:

- Coordinate and ensure the timely implementation of the MID Action Plan;
- Ensure follow-up actions regarding any relevant decisions taken by the National Strategic Transformation Commission with respect to sustainable development;
- Review the MID Policy, Strategy, and Action Plan, whenever required;
- Continuously keep abreast with, and be informed of international, best practices and integrate same in the MID Policy, Strategy and Action Plan;
- Facilitate the implementation of projects involving different stakeholders; and
- Monitor and evaluate the implementation of MID and related projects.

The Commission on MID will also interact with implementing Ministries and MOFED during Budget consultations with a view to ensuring that MID projects have their financial resources.

The MID Action Plan will be implemented alongside the Economic and Social Transformation Plan and this interaction would provide the operational link between the long-term objectives and the 3-year Programme Based Budgeting of Ministries, thus charting across the implementation and monitoring of set targets.

The existing Strategic Committee on MID, which comprises members from both the private and public sectors will continue to provide guidance to the Commission on MID.

The Ministry of Environment and Sustainable Development will continue to collaborate with the Commission on MID in all matters pertaining to environmental issues and sustainable development in general.

Maurice Ile Durable Institutional Arrangement



MID Overarching Policies and Strategies

MID is inherently overarching. It will enhance coherence in the national development agenda and promote inclusive growth by ensuring that all the pillars of sustainable development are taken into consideration.

Maurice Ile Durable MID Overarching Policies

MID Overarching Issues

As a national and interdisciplinary initiative, MID policies and strategies have implications beyond single areas of social, environmental or economic activity.

MID is inherently overarching given its diversity across, and linkages between, the five Es: Energy, Environment, Education, Employment/Economy and Equity. Each of these elements concerns the individual, the community and the nation and influences our quality

MID Overarching Policies

- **Improved Integration:** Facilitate integrated planning and implementation of legislation.
- **Collaboration:** Promote collaborative mechanisms bringing together the public and private sectors, community, NGOs and voluntary sectors for MID.
- **Capacity Building:** Develop capacity, awareness, skills and knowledge at all levels.
- **Monitoring:** Develop robust monitoring and reporting mechanisms for MID.
- **Land Use:** Optimise land use through an effective and efficient planning process.
- **Climate Change:** Promote a climate resilient development pathway and pursue the climate change adaptation and mitigation programmes.
- **Behavioural change:** Develop a mindset that creates assets, values and accepts equitable sharing; respects and complies with the law protecting the environment.
- **MID Research:** Support the development of coordinated research and innovation on MID.
- **MID Engagement:** Promote empowerment at local level for implementation and enforcement through local Agenda 21 and local MID projects.

MID Overarching Strategies

- Develop an integrated planning approach to optimise the use of our limited resources.
- Review and improve the efficiency of the planning process, enforcement measures and fiscal incentives.
- Create opportunities to bring about behavioural change at all levels towards the attainment of MID.
- Explore opportunities to develop Public Private Partnership initiatives.
- Ensure that all training programmes developed include the principles of MID alongside statutory obligations.
- Encourage action at all levels of society and provide for a reward mechanism for successful MID entrepreneurship.
- Ensure that prime agricultural land and environmentally sensitive areas are protected.

Measuring Progress

- Monitor progress of MID initiatives through MID Realisation Indicators.
- Develop and communicate a comprehensive MID Realisation Index (Sustainability Index) to monitor progress towards the MID vision.
- Develop a mechanism for checking MID compliance of new policies, strategies or action plans.

MID and Energy



Mauritius faces a challenging future for energy. Demand for energy will continue to increase as the economy grows from upper-middle to high-income. At the same time, world fossil fuel prices continue to fluctuate. Mauritius intends to reduce its dependency on fuel imports, helping to decouple the economy from fossil fuel.

To do this, the Long Term Energy Strategy calls for simultaneous action to reduce demand and to increase the proportion of renewable energy being supplied.

Energy efficiency is already being promoted by the Energy Efficiency Management Office (EEMO) and optimisation of the electricity sector through a restructuring programme that will include regulation of electricity. MID can help to deliver these national objectives.

Diversifying the country's energy supply and improving energy efficiency for enhanced energy security.

MID Energy Policies

- **Long Term Energy Strategy:** Create the enabling environment for the implementation of the Long Term Energy Strategy.
- **Energy Efficiency Targets:** Use and manage energy in an efficient way.
- **Sustainable Public Transport:** Develop an efficient affordable, accessible and cleaner transport system based on efficient fuel use and good planning, leading to a reduction in consumption of energy in the transport sector by 35% by 2025, in comparison to 2010.
- **Renewable Energy Targets:** Meet its energy needs in locally sustainable and compatible ways, reducing dependence on fossil fuels without putting prohibitive economic burdens on the nation.
- **Energy Security:** Ensure energy security through the application of MID policies.
- **Power Sector Reform:** Power sector reform and the introduction of independent economic regulation of electricity.

MID Energy Strategies

- Understand the development needs of the grid system to enable uptake of new technology in the future.
- Support the activities and effective development of the Energy Efficiency Management Office (EEMO) with active participation of the Ministry of Energy and Public Utilities and the Central Electricity Board.
- Explore demand-side management to support the control of peak energy loads.
- Support the development and use of low-energy modes of transport, including the Mass Transit System.
- Develop and maintain a proactive energy supply plan in order to meet future energy demand.
- To revise Government Procurement Strategy to include energy efficiency as a key procurement principle.

MID Energy Actions

- Analyse the national energy demand profile and target high demand sectors to reduce their consumption through financial incentives e.g. tax reliefs.
- Undertake energy audits and energy efficiency advice to offices, factories, households.
- Mandate the use of green building standards in all new government funded projects as a flagship energy efficient design.
- Develop pilot program for cycle lanes and explore incentives for increased car occupancy and traffic congestion management.
- Setting up of the Utility Regulatory Authority.
- Develop a Renewable Energy Procurement Framework.
- Commission a Feasibility Study on renewables with a focus on geothermal and wave energy.
- Finalisation and implementation of the Renewable Energy Master plan.

Forging ahead for a cleaner and greener Mauritius.

MID and Environment

Given the small size of Mauritius, its dynamic society and economy place a disproportionate pressure on the natural environment. Limited land resources must be used to generate employment and economic opportunities for Mauritians, balanced with environmental protection that is rigorously and consistently enforced.

MID reaffirms Government's unflinching commitment to further safeguard the environment and address climate change and biodiversity challenges.

MID requires committed actions at all levels, from Government to the public at large, to address multiple challenges, including the sustainable management of water resources, improved waste management, integrated land use planning and action to ensure compliance with environmental legislation.

MID Environment Policies

- **Pollution Control:** To prevent damage of the natural environment by pollution of land, air, water or from noise.
- **Land Use and the Environment:** To ensure that sustainable land use planning takes proper account of land use impacts on the environment and efficient use of scarce land resources.
- **Water Resources:** To ensure water resources are managed and used sustainably through effective watershed management and infrastructural development.
- **Managing Wastes:** To implement a sustainable solid and hazardous waste management system.
- **Environmental Health:** To improve and protect the health and wellbeing of Mauritians by providing a safe and high quality environment to live and work in.
- **Improving the Environment:** To enhance the natural environment and built up areas within the Republic.
- **Food Security:** To promote food security through sustainable agricultural practices and conservation of agro-biodiversity.
- **Biodiversity Conservation:** To conserve the natural assets of the nation by adopting the ecosystem approach.
- **Increase Environmental Knowledge:** To ensure there is sufficient capacity in all aspects of conservation and management.

MID Environment Strategies

- Implement an integrated approach to sustainable land use management, balancing the needs of urban and rural development with the natural and social environment.
- Stop the degradation of sensitive and vulnerable ecosystems (including lagoons, national parks, and reefs systems).
- Review and enforce existing environmental legislation and regulations.
- Formulate a consolidated water legislation to enhance conservation and management of freshwater resources.
- Implement the National Solid Waste Management Strategy.
- Develop and implement a resource recovery programme, including setting targets for different waste streams.
- Promote the clean and green concept as well as sustainable buildings.
- Reduce reliance on food imports and increase self-sufficiency in major food crops without harming the environment.
- Monitor and manage the use of terrestrial and marine biodiversity to ensure that they continue to provide ecosystem services.

MID Environment Actions

- Adopt a sustainable land use planning process and prepare Action Area Plans.
- Minimize the use of agrochemicals and pesticides.
- Create sand banks for beach nourishment.
- Initiate a composting scheme for home and market wastes.
- Develop an E-waste sustainable management system for the Republic of Mauritius.
- Initiate a feasibility study for selection of appropriate waste treatment and disposal technologies.
- Create a "Health Observatory and Information Management" system.
- Encourage and support SME's in local food production.
- Protect existing and increase indigenous forest cover.
- Protect the coastal zone and marine ecosystem.
- Formulate and implement a Climate Change Legislation as well as Adaptation and Mitigation Frameworks.
- Clean and embellish the physical environment.
- Provide eco-points for collection of recyclables.

MID Employment/Economy

The economy of Mauritius has undergone remarkable development, dramatically improving people's standard of living and lifestyles.

Creating opportunities for green employment in a resilient, robust

Developing our human potential for

MID and Education



Education has always been regarded as the key element for economic and social advancement and figures as one of the priority areas in national development strategies. The education system of Mauritius and the sustained investment in its development have been the driving force behind the social and economic development of the Republic.

MID promotes education as the key factor in securing a sustainable future for the nation. This is particularly relevant in the context of the contemporary global environment. Its ever-increasing complexity presents new challenges such as climate change and testing the capacity of the Republic to operate within a volatile global economy. Creativity and innovation through education will be one of the crucial means of responding to these challenges on a national level.

MID Education Strategies

MID Education Actions

- learning and employment opportunities for all groups.
- **Sustainable Lifestyles:** Promote healthy and sustainable lifestyles.
- **Natural Disaster and Climate Change Awareness:** Promote critical consciousness with regard to disaster risk reduction, climate change adaptation and mitigation.
- **Access to post-secondary education:** Increase access to post-secondary education through multiple pathways.

- Improve access to education for students of all ages and groups in and out of school.
- Use education and training to raise awareness of, and encourage, healthy life choices for all age groups.
- Promote consistency between formal and non-formal education pathways in mainstream and vocational systems.
- Encourage the development of family literacy programs.
- Develop and mainstream programs to promote environmental literacy at all levels.

- Promote MID literacy by undertaking a public awareness campaign publicising quality of life/healthy choices.
- Include 'quality of life/healthy choices' in the national curriculum.
- Implement the actions identified to support the improved qualifications for green jobs.
- Introduce a skills expansion course and certificate, to allow current Technical Extension Officers to become 'MID Extension Officers'.
- Improve community understanding of MID and the way it can be adopted in everyday life.



Putting people at the centre of development for an inclusive society.

MID and Equity

Equity is a cornerstone of MID because it promotes equal opportunities and access to all. The development of Mauritius must be all-inclusive and Government will target equity with initiatives in education, employment, family life, promotion of human values, and leisure.

MID Equity Policies

- **Support Vulnerable Groups:** Ensure effective support is provided to those most in need
- **Excluded Groups:** Through sustainable development and the green economy, increase resources to alleviate poverty, reduce exclusion and promote social entrepreneurship.
- **Institutional and Legislative Framework:** Foster a conducive institutional and legislative framework to promote equal opportunities, non-discrimination, gender equality, women empowerment, material health and anti-corruption.
- **Transparency Index:** Enable a sustained improvement in the Transparency Index of Mauritius.
- **Individual Rights:** Ensure that, in all sectors of activity, the rights of individuals and workers are appropriately protected.
- **Equal Access to Infrastructure:** Provide equal access to high quality health care, leisure, sports, law and order.
- **Arts and Culture:** Ensure access to artistic and cultural infrastructures and activities.

MID Equity Strategies

- Promote energy equity through dedicated programmes with respect to disconnection, low-income groups and women participation.
- Ensure legislation supporting equity is properly enforced.
- Ensure there is suitable training available, for people moving from traditional work into the green economy.
- Promote social entrepreneurship at all levels of society.
- Improve coordinated access to social services, using a one-stop-shop approach.
- Enforce the Equal Opportunities Act and improve the transparency of employment conditions.
- Continue to improve the inclusivity of welfare facilities in the Republic of Mauritius by identifying vulnerable groups and opportunities for improvement.
- Develop a White Paper on arts and culture.

MID Equity Actions

- Conduct a survey of vulnerable groups to identify the variability in current equity of access to health and leisure infrastructures, in order to identify priority areas for improvement.
- Sensitize employers on the Equal Opportunities Act and the importance of transparency of employment.
- Consider the use of social tariffs to reduce the cost of utilities such as energy and water for those most in need.
- Review current equity of access to public infrastructure.
- Include consideration of cultural infrastructure in land use planning guidance.
- Review regulatory system for reporting inequity and make necessary changes.
- Make background checks for all social work professionals mandatory.

MID Priority Programmes

Some of the major actions will be delivered through projects that combine benefits for several sectors.

Maurice Ile Durable MID Priority Programmes

Overview of MID Priority Programmes

The MID Action Plan consists of some 130 actions across the 5 Es, drawn from the working group consultations, the gaps and challenges analysis and the consultants' recommendations.

In the first instance, the Action Plan will be delivered mainly through the following four MID priority programmes:

- Energy
- Cleaner, Greener and Pollution Free Mauritius
- Green Economy
- Ocean Economy

For each programme, Concept Plan comprising a number of short term projects have been developed. These projects aim to simultaneously bring benefits to all of the five Es more effectively compared to individual actions which may benefit specific sectors only.

Each project aims to build on existing activities and introduce new ideas to further improve the benefits to MID. The projects form the priority actions for the next three years, but do not hinder ongoing projects.

The projects would be carried out by Government, in collaboration with relevant stakeholders. Where external skills and additional resources are required, Terms of References have been prepared to commission such services.

Preliminary Cost Estimates

- **Energy:**
USD 170 million (Rs 5.1 Billion)
- **Cleaner, Greener, Pollution-free Mauritius:**
USD 32.9 million (Rs 1.0 Billion)
- **Green Economy:**
USD 5.2 million (Rs 0.16 Billion)

Costing for the implementation of the MID Priority Programme on Ocean Economy has been excluded. This will be developed at a later stage.

The Major Projects

- **Energy:** Improve energy conservation by setting up the Utility Regulation Authority (energy regulator), New Renewable Energy Procurement Framework, Master Plan and deployment plan, increasing energy efficiency and increasing the share of renewables.
- **Cleaner, Greener, Pollution-free Mauritius:** Strengthening the ongoing work, focusing on waste minimisation and waste treatment technologies, environment protection and biodiversity conservation.
- **Developing the Green Economy:** This project brings together a range of actions to help to stimulate demand and supply in the green economy.
- **Sustainable Development of the Ocean Economy:** The ocean economy presents great opportunities to the Republic. This project aims to ensure that it is being developed in a sustainable manner for the benefit of all.

Implementation Priority

The four major programmes are considered to be of highest priority for action. The additional actions will be generally of medium priority. It is likely that the lower priority actions will be delivered in the longer term and so the need for them or their potential scope is likely to change.

1. Introduction to Maurice Ile Durable



1.1 Preamble – Developing Sustainably

Since independence in 1968, Mauritius has developed from a low-income, agriculturally based economy to an upper middle-income and diversified economy with growing industrial, financial, and tourism sectors. For most of that period, annual GDP growth has been in the order of 5% to 6%. This remarkable achievement has been reflected across the Republic, resulting in a much improved standard of living, increased life expectancy and lowered infant mortality.

As a Small Island Developing State (SIDS), the Republic of Mauritius faces unique development challenges. The resource capacity of Mauritius is limited due to its isolated geography and it remains particularly vulnerable to the profound economic and environmental changes sweeping across the globe.

The rapid development of Mauritius has, however, come at a cost: the quality of its natural resources has been negatively impacted upon; its coastal ecosystems are under threat from tourism and its terrestrial biodiversity has been degraded by intensive agriculture and deforestation. Today, the spread of Invasive Alien Species (IAS) and the introduction of new IAS (intentional and unintentional) constitute a significant threat to native terrestrial biodiversity.

In addition to these development challenges, the potential impacts from global climate change need to be taken into account. These further threaten the ecosystems, the associated ecosystem services and hence the economy by placing increasing pressure on terrestrial and aquatic natural resources.

Resolving these challenges and threats and moving to a sustainable future is the business case for green growth. There is a need to review how the nation can move towards a state in which economic and social progressions prevail, but not at the expense of the already delicate local and global environment.

The Green Economy represents a new development opportunity in which economic development and environmental sustainability reinforce each other.

1.2 Sustainable Development Concept

Over the past 20 years, the world economy has expanded at an unprecedented rate, lifting hundreds of millions of people out of poverty. However, existing public policies and market incentives have resulted in businesses running up large social and environmental ‘debts’, to the extent that some 60% of the world’s ecosystem goods and services that underpin livelihoods are now considered degraded.

In its simplest sense, sustainable development attempts to address these challenges by enabling development that meets the needs of the present without compromising the ability of future generations to meet their own needs¹. The concept of sustainable development is by definition fundamental to human survival. It has risen up the political agenda in response to economic challenges, the pressure of an increasing population on limited resources, and the impacts of climate change.

Different nations have approached the concept of sustainable development in different ways, reflecting the diversity of challenges faced by individual countries and depending upon the availability of natural resources, and their current development status. While sustainable development is a universal challenge, many practical responses can only be defined nationally and locally.²

A more recent theory for delivering sustainable growth is the ‘green economy’, which is underpinned by the desire to deliver ‘green growth’. The green economy represents a new development opportunity in which economic development and environmental sustainability reinforce each other and create a win-win outcome rather than a trade-off. The principle is to convert the limited global ecological carrying capacity into an opportunity for greening economic growth.

1.3 International Commitments

The Republic of Mauritius is a prominent member of the SIDS community and aims to share knowledge and lead the way to achieve sustainable development within the community.

The implementation of the Maurice Ile Durable (MID) vision steers the sustainable growth of the Republic of Mauritius, and targets a better quality of life for all Mauritians. It also supports the delivery of international commitments. At RIO+20, Mauritius reaffirmed its commitment to:

- Fully implement the Rio Declaration on Environment and Development;
- The Programme for the Further Implementation of Agenda 2;
- The Plan of Implementation of the World Summit on Sustainable Development (Johannesburg Plan of Implementation);
- The Johannesburg Declaration on Sustainable Development of the World Summit on Sustainable Development;
- The Programme of Action for the Sustainable Development of SIDS (Barbados Programme of Action); and
- The Mauritius Strategy for the Further Implementation of the Programme of Action for the Sustainable Development of SIDS.

¹ World Commission on Environment and Development (WCED). Our common future. Oxford: Oxford University Press, 1987 p. 43.

² IIED 2002, Sustainable Development Strategies A Resource Book, International Institutes for Environment and Development (IIED), 2002

1.4 Maurice Ile Durable – Defining a Sustainable Mauritius



Figure 1.1: Mauritian Sustainability Indicators

In 2008, the Prime Minister of the Republic of Mauritius, Dr The Honourable Navinchandra Ramgoolam, GCSK, announced a long-term vision for the sustainable development of the Republic of Mauritius. The main objective of Maurice Ile Durable is “to make Mauritius a model of sustainable development” particularly in the context of SIDS.

The National MID Vision frames sustainable development and green economic growth in the context of five “E”s (Figure 1.1):

- E
nergy
- Environment;
- Employment/Economy;
- Education;
- Equity

1.4.1 MID Vision

Energy

1. Our nation adopts a sustainable lifestyle with a more efficient use of energy in all sectors.
2. Our nation is less dependent on fossil fuels through increased utilisation of renewable energy.
3. Our land use planning, buildings, transport systems and infrastructure are eco-friendly, efficient and safe.

Environment

1. Our nation is environmentally conscious, adopts a sustainable lifestyle and acts responsibly.
2. Our natural resources including biodiversity, historical and cultural heritage are effectively managed, protected, monitored and used in a sustainable manner.
3. Our nation enjoys security in terms of water and food and a high quality of life in a green, zero waste and pollution free environment.

Employment/Economy

1. More employment opportunities are created in an economy that is green, inclusive, innovative, resilient, robust and diversified.
2. Our economy provides an eco-friendly working environment that ensures work life balance for sustainable human development and family welfare.
3. Our economy is forged so as to constantly promote green growth in line with sustainable consumption and production patterns.

Education

1. Our educational system promotes the sustainable development of skills, knowledge and values through lifelong learning to ensure the holistic development of the citizen.
2. Our formal and informal education systems foster responsible, green and civic values in all age groups to achieve a caring society.
3. The potential of our human resource is fully tapped to foster social equity along with enhancing economic, political, environmental and cultural well-being.

Equity

1. Our sustainability model revolves around putting People at the centre of development.
2. Our society and institutions are committed to the principles of equity and social justice and participate fully in poverty alleviation and social welfare, in line with the Millennium Development Goals.
3. Our State provides for the protection, welfare, development and empowerment of vulnerable groups.

1.4.2 MID Policy Development

Since 2008, much work has been undertaken to progress policy formulation to achieve the longterm vision for sustainable development in Mauritius. In April, 2011, Government produced the MID Green Paper, which is the foundation of the MID policy development process and a milestone for stimulating discussion on the MID concept in the public arena.



Figure1.2: MID Policy Development Process

1.5 Development Trends

Despite the apparent constraints of a SIDS and a resource-scarce economy, the Republic of Mauritius has overcome these challenges. The economy is one of the fastest growing in Sub-Saharan Africa and is classified by the World Bank as an upper-middle income economy.

Rapid economic growth has brought rapid change in land use, often driven by international economic factors such as the reduction in the price of sugar. The consequence of these changes is a greater pressure for conversion of agricultural land for urban development. In addition, the major challenge facing the country remains its vulnerability to external shocks, the effects of which are amplified in the case of SIDS.

The challenge for sustainable development, which the MID concept addresses, is to achieve continual development while reducing the environmental burden on the Republic of Mauritius.

The challenge of meeting human demands within the ecological limits of the world has been illustrated as a 'sustainability indicator', by mapping the UN Human Development Index (HDI) and ecological footprint, illustrated in Figure 1.3.

Figure 1.3 shows the Republic of Mauritius in a global historical context as a point of reference. The red boxes describe the positional history of Mauritian development, indicating the journey for the last 20 years³. This pathway illustrates the link between improving development and increasing the burden on the surrounding environment (particularly pronounced from 1990 to 2005).

Countries below the horizontal line, scoring more than 0.8 on the HDI, are within the threshold for high human development. However, these countries are generally characterised as having a higher ecological footprint, placing a higher demand on nature than could be sustained if the whole world lived in this way.

Mauritius's HDI for 2011 was 0.728, placing it 77th out of 187 countries with comparable data. The HDI of Sub-Saharan Africa as a region increased from 0.365 in 1980 to 0.463 today, placing Mauritius far above the regional average⁴. The ecological footprint of Mauritius for 2010 was 4.26 global hectares per person.

³2010 data is the only point directly comparable to the data presented in the rest of the chart. Care should be taken when interpreting this information as it does not directly show wider economic information or the impact of the global market fluctuations (which could explain the drop in HDI between 2005 and 2010).

⁴International Human Development Indicators, <http://hdrstats.undp.org/en/countries/profiles>.

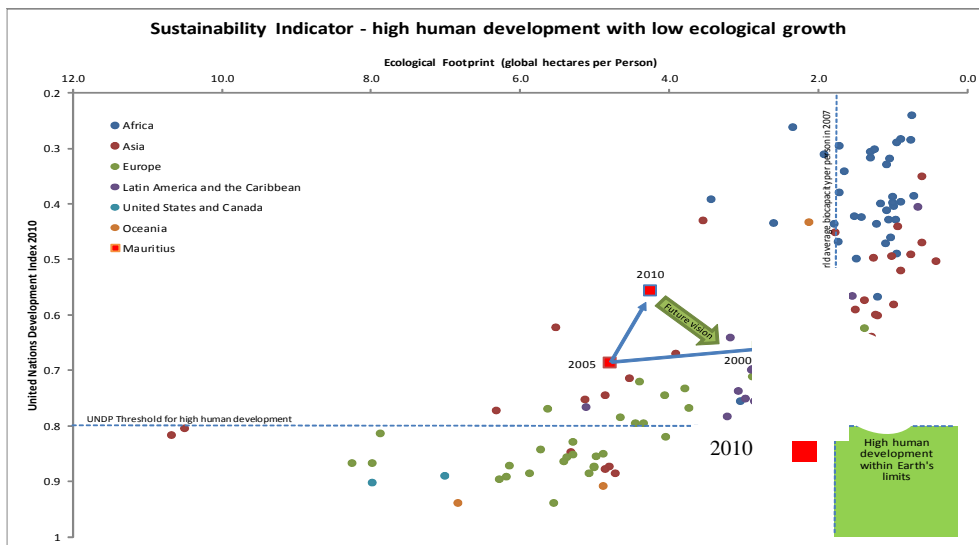


Figure 1.3: Sustainability Indicator (2010)

Source: Data from the Global Footprint Network National Footprint Accounts (2010 edition); UNDP Human Development Report (2010 data)

To move towards a sustainable future, the world will need to address all dimensions of development.

In order to move towards a sustainable future, Mauritius needs to address all dimensions of this chart, moving towards the bottom right corner of the graph, where human development is within the earth's limits. This will challenge the concepts of success and progress as well as help countries to improve their level of development and reduce their ecological impact. Several countries including Mauritius face both challenges.

1.6 Participatory Process

Extensive consultations were undertaken to develop the MID concept. From the outset, it was agreed that the policy formulation process would be highly participative because the citizens of the Republic of Mauritius will be affected by the outcomes.

Consultation has brought the benefits of local knowledge, experience and expertise. It has raised awareness of, and gathered support for the process. Public participation is expected to increase the likelihood that initiatives will be appropriate and effective at local level, and hence that they will be more likely to be adopted and sustained.

A wide national consultation process was launched in February 2010 by the then Ministry of Renewable Energy and Public Utilities, supported by the then MID Steering Committee (now known as the Commission on MID under the Prime Minister's Office) with the objective of inviting every Mauritian to participate in the formulation of the National Policy for Sustainable Development. This consultation resulted in a Green Paper, which elaborated and embodied the needs and aspirations of the participants.

To further consolidate the MID process, Government created six working groups to address the 5Es: Energy, Environment, Education, Employment/Economy and Equity. Two working groups were set up for the Environment sector, namely Pollution and Biodiversity. A series of consultative workshops was held from June to July 2011 in Mauritius and Rodrigues, mobilising some 300 participants from the major groups of society, namely public and private sector, local authorities, NGOs, trade unions, academia, women and youth.

The outputs of the consultation are integral to the realisation of MID and form the basis of the strategy and policy development and subsequent action plan.

1.7 Methodology

In terms of spatial scope, this project considers the future sustainable development of the islands of the Republic of Mauritius.

In formulating this policy, strategy and action plan document, the following were taken into account:

- The current situation in the Republic of Mauritius, including the institutional framework, progress in implementing sustainable development initiatives and the political and regulatory context.
- The MID vision for each of the five Es developed by an Inter-ministerial Committee at the level Ministry of Environment & Sustainable Development (MOESD) and approved by Cabinet.
- The outputs of the MID consultations and working groups, including those recommendations from the working groups that may be considered as proposed policies.
- Previous work on the current project, including meetings with Ministries and other stakeholders, and inputs gathered from participants during workshops.
- The practicability of proposals, so that actions are feasible and appropriate for the Republic of Mauritius.

The review of the current situation was based on material supplied by the lead Ministries (Ministry of Energy and Public Utilities, Ministry of Agro-Industry and Food Security, Ministry of Environment and Sustainable Development, Ministry of Labour, Industrial Relations and Employment, Ministry of Education and Human Resources and the Ministry of Social Integration and Economic Empowerment) for each of the 5Es, visits to the Ministries, the review and input of local consultants and learning from the stakeholder groups during the project missions to Mauritius.

Consultations with the Ministries and working group members played a significant part in the formulation of the situational analysis and our approach to the work. It is clear that there is a wide range of views on how the MID vision should be realised. This report focuses on identifying the main gaps which may be addressed through the proposed policies.

The proposed policies draw heavily on the outputs of the working groups in order to make best use of the stakeholders' inputs. Each policy has been reviewed and in some cases reworded in order to articulate their scope and objectives. In some cases, proposed policies were considered to be more appropriate as strategies or actions. Likewise, the proposed strategies and actions were reviewed and grouped.

1.8 Report Structure

1.8.1 Purpose of the Policy, Strategy and Action Plan

The purpose of the Policy, Strategy and Action Plan is to propose a pathway and practical actions for the realisation of the Maurice Ile Durable vision.

This National MID Policy, Strategy and Action Plan is so structured as to influence existing policies and improve new policies based on emerging challenges and gaps. It will exist alongside other Ministries' policies and strategies. **The MID Policy, Strategy and Action Plan does not replace or supersede existing policies and strategies, such as those within other national strategies.**

1.8.2 Document Layout

This document has three discrete outputs:

- a) Part One: MID Policy,
- b) Part Two: MID Strategy, and
- c) Part Three: MID Action Plan.

2. Situational Analysis



2.1 Background

The Republic of Mauritius consists of mainland Mauritius and its dependencies in the Indian Ocean namely Rodrigues, the Cargados Carajos (St Brandon), Agalega, Tromelin and the Chagos Archipelago, totalling a surface area of 2,040 km². The estimated population is 1.29 million, growing at an estimated 0.5% per year, with a population density of 632 people per km². Official projections show that Mauritius will soon be faced with an ageing population, as it is estimated that the population over the age of 60 will increase from 9% in 2000 to 23% in 2040.

The Republic of Mauritius has an Exclusive Economic Zone (EEZ) of over 2.3 million km², of which 99% is still unexplored. Its ocean territory extends from the coast of Mauritius, Rodrigues, St Brandon (Cargados Carajos Shoals), Agalega, Tromelin and Chagos Archipelago.

In spite of its small size, low endowment of natural resources and remoteness from world markets, Mauritius has since its independence in 1968, transformed itself from a low-income, monocrop-based economy into one of the most successful economies in sub-Saharan Africa. This has been possible with political stability and good governance as well as through fiscal consolidation, trade competitiveness, appropriate regulatory and institutional frameworks, and investment in human capital, amongst others.

Mauritius, whose economy largely depends on external markets, is highly vulnerable. As such, the country has successively been facing a number of threats linked to the end of trade preferences, namely the dismantling of the Multi-fibre Agreement in 2005 and the 36% reduction in guaranteed sugar price. It is also facing the impacts of global shocks linked to the volatility of fossil fuels and food prices, as well as from the global economic and the prevailing Euro Zone crises.

Notwithstanding this, the Mauritian economy is a highly diversified one, based on tourism, textile and manufacturing, cane products, and financial services. In recent years, Information and Communication Technology, seafood, hospitality and property development, healthcare, education and training have emerged as important sectors, attracting substantial investment from both local and foreign investors. In 2012, Government has also initiated actions to develop the ocean (blue) economy.

Again, in that year, Mauritius registered a GDP growth of 3.3% despite the global economic crisis, showing, however, a slight decrease compared to 2011 and 2010, where it stood at 3.5% and 4.2% respectively. At present, per capita income is about US\$ 8,000, the second highest in Africa, as compared to US\$ 260 in 1968.

In parallel to its economic growth over the years, there has been a sustained emphasis on investment in social welfare, health and education through the various initiatives taken by successive Governments over the years. These have contributed to achieve most Millennium Development Goals and key human development indicators. In 2011, Mauritius was ranked 3rd in Africa in the Human Development Index and 77th out of 187 countries worldwide.

Now, the challenge is to further boost economic growth, develop human capital, and promote new emerging sectors in order to move Mauritius towards a more knowledge-based economy while preserving its ecosystems and its longstanding commitment to social welfare.

2.2 The MID Pillars – the 5Es

The following sections review the existing situation and summarise the major sustainable development challenges facing the Republic of Mauritius. They provide the baseline on which the targeted policies, strategies and action plan are developed in the 5 Es.

2.2.1 Energy

Energy is critical to the continued development of Mauritius. Fossil fuels remain the dominant source of primary energy to generate electricity and to drive the two largest consumers: the transportation and manufacturing sectors. During the last decade, national energy requirement has grown at an annual rate close to 5%.

2.2.1.1 Electricity Production

The Central Electricity Board currently generates approximately 45% of the country's total power requirements from its four thermal power stations and nine hydroelectric plants; the remaining 55% is purchased from Independent Power Producers using a combination of bagasse and imported coal for generation.

In 2011, 83.8% of the total primary energy requirement was met by imported fossil fuels, whilst 16.2% was derived from renewable energy sources. Bagasse contributes to about 94% of the renewable energy and 6% is derived from hydro, wind and fuel wood. Import of coal has considerably increased over the years and accounted for 49.5% of total fuel utilised for electricity production in 2011. A snapshot of the Mauritian energy sources is provided in Figure 2.1.

Coal Bagasse Power Station



Source: Omnicane

This reliance on external sources of fossil fuels and vulnerability to external shocks are a major challenge to energy security and a key motivator for change. Furthermore, there is low penetration of renewable energy due to high initial investment costs. In addition, energy efficiency and conservation measures are also limited.

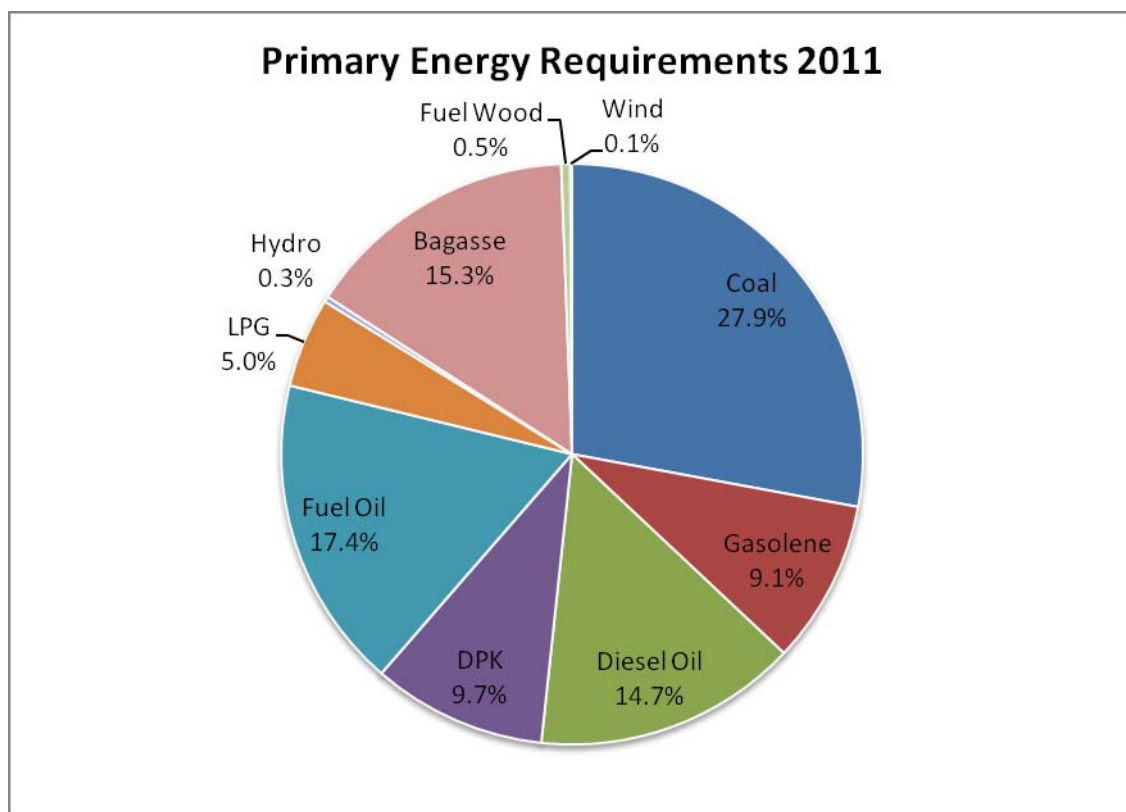


Figure 2.1: Primary Energy Sources, 2011 (in %)

Source: Statistics Mauritius – Digest of Energy and Water Statistics, 2012

The current energy challenge in Mauritius is to provide reliable affordable energy whilst shifting energy supply towards more localised renewable sources. Subsequently, the National Long Term Energy Strategy (2009 - 2025) aims to reduce the country’s dependence on fossil fuels, increase the share of renewable energy, democratise energy supply and promote energy efficiency and conservation. The salient points addressed in this strategy, in the electricity sector are:

- Increase the share of renewable sources of energy in electricity supply (from 17.5 % presently to 35% in 2025);

- Improve energy efficiency and conservation in all sectors through demand-side management measures (with targeted energy efficiency gains of 10% by 2025 over the 2008 baseline); and
- Create a financially sound and self-sustainable modern electricity sector, a transparent and fair regulatory environment that appropriately balances the interests of consumers, shareholders and suppliers, conditions that provide efficient supply of electricity to consumers and improvement in customer services.

Whilst renewable energy will form an increasing proportion of the energy mix, it will still be necessary to use conventional power such as Liquefied Natural Gas and Clean Coal. Henceforth, coal fired power stations will have to abide by stringent environmental safeguards. Regarding the production of biofuel, Government has already developed a framework for the use of locally produced ethanol.

It is a fact that cars propelled by fossil fuel are highly polluting. Mauritius has progressively gone for cleaner diesel from 2500 parts per million (ppm) to 500 ppm and now 50 ppm. Mauritius is slowly but surely moving towards greener technologies in the transportation sector. While hybrid cars are already available, electric cars have recently been introduced. Electric cars charged by renewable energy like solar photovoltaic and wind can be a solution towards greening further the transportation sector and in order to pave the way forward, the Government has in the budget exercise 2013 halved the excise duty on such vehicles from 50% to a flat rate of 25%.

Legislation to regulate the electricity sector was introduced in 2008 with the proclamation of the Utility Regulatory Authority (URA) Act. This now needs to be consolidated through the setting up of the URA. The legal framework for energy efficiency has also been established by the proclamation of the Energy Efficiency Act 2011 and an Energy Efficiency Management Office (EEMO) has been set up to promote energy efficiency and conservation in all sectors. For example, minimum energy performance standards for some domestic appliances and a comprehensive framework to promote sustainable buildings have been developed. Regarding the transport sector, revisions in vehicle taxation systems and measures to improve fuel efficiency have been introduced.

2.2.1.2 Transportation

Traffic congestion is a serious problem and the total cost of congestion to the economy is estimated to be around 1.3% of GDP⁵. From 1990 to 2011, the total number of vehicles has gone up from 123,545 to 400,919, representing a rise of 224.5% with an annual increase of about 6%. The density of vehicles has increased considerably from 69 vehicles per km of road in 1990 to 190 vehicles per km of road in 2011.

Traffic Congestion



Source: MOESD

The increasing number of vehicles has been accompanied by a corresponding growth in fuel demand and carbon dioxide emission. Despite the relatively small size of the island, the average distances of commuting are high and time and energy consuming. Rationalisation of land use could reduce the number of trips and the commensurate average distance travelled, as well as promoting the use of public transport. This would require interventions such as the densification of urban areas and the development of mixed use areas, in which employment, infrastructure, and houses are located together.

To make the transport sector more efficient, the Long Term Energy Strategy (2009 – 2025) recommends a sustainable approach to transport comprising:

- encouraging the use of more efficient and lower emission vehicles and fuels;

⁵Sustainable Consumption and Production (SCP) Indicators, Ministry of Environment and Sustainable Development, June 2010.

- encouraging the use of bio-fuels;
- improving the efficiency of transport provision and use; and
- reducing the level and types of vehicles and fuel supply chain emissions.

An integrated and sustainable approach to transport and land use should be promoted. This could involve the development of a Mass Rapid Transit (MRT) system with an efficient bus feeder network, which will offer a credible attractive alternative to private vehicles. This approach will also encourage walking and cycling through appropriate infrastructure.

2.2.1.3 Energy Trends, Gaps, Challenges and Opportunities

Current trends and gaps	Challenges and opportunities
<ul style="list-style-type: none"> • Fossil fuel imports have more than doubled in 20 years, from 481,000 tonnes in 1990 to 1,105,536 tonnes in 2010. Energy demand continues to increase and, with it, the Republic's dependency on fossil fuels. • The governance framework needs to be further improved. • Reliance on coal is set to increase but it is not clear how the increase in ash volumes will be dealt with. • Barriers to renewable energy have not been addressed. With the increase in coal use, renewable energy production could decrease instead of meeting the national target. • The new Energy Efficiency Management Office offers potential, but the training of energy auditors is still not yet completed. • Capacity is falling further behind other nations. 	<ul style="list-style-type: none"> • To manage and meet energy demand with renewable energy sources. • The governance framework has been provided for and its main feature can be implemented relatively easily. • Energy efficiency and energy conservation measures and incentives have the potential to deliver significant savings to consumers and hence in infrastructure needs. • Improvements in capacity on renewable technology could facilitate a significant reduction in the reliance on fossil fuel.

2.2.2 Environment

2.2.2.1 Land Use and Food Security

Mauritius is densely populated and there is considerable pressure on agricultural land and forests. The proportion of land covered by forests has decreased from around 31% in 1995 to 25.5% in 2011. About 43% of the land area is covered by agriculture and approximately 28% by built up areas. High quality land is scarce and is sought after by a variety of competing users for urban and infrastructural expansion and to support the agricultural, industrial and tourism sectors. These pressures, along with unsustainable practices, have led to overuse and degradation, especially in environmentally sensitive areas such as wetlands and mountain slopes.

A series of initiatives has been taken to control land use. These include a legislative framework on land use planning which provides the basis for land use planning in the Republic of Mauritius and lays down the criteria for an efficient allocation of land for different uses. The National Development Strategy (NDS), as the national planning instrument, sets the Government's vision on Land Use Strategy.

The Outline Planning Schemes (OPS), which are regional plans for a Municipal Council or District Council area, provide the framework for Local Authorities to plan, shape and control the use of

land within their area. Outline Planning Schemes set out broad proposals for the physical development of a planning area and translate the national strategy to the local level.

Planning Policy Guidance (PPG) documents are written statements that guide on particular planning issues and assist developers, local authorities and the general public to comply with principles of good design, appropriate sites and location of activities. In addition, the Environmental Impact Assessment (EIA) mechanism, the Study on Environmentally Sensitive Areas (ESAs) and the development of the Integrated Coastal Zone Management Framework (ICZM) provide necessary tools for development control.

More recently, Government has embarked on the Land Administration, Valuation and Information Management System (LAVIMS) project, providing an instrument for the effective use and development of land resources to achieve economic prosperity and social equity and to preserve the natural beauty of the island. A national digital cadastre for all residential and commercial properties will be created.

Natural Landscape of Mauritius



Source: MTPA

Although the NDS and the OPS provide sound policies on sustainable development and protection of agricultural lands, they have not been particularly successful. There are various reasons to account for this:

- The enforcement of legal dimensions of the schemes and policies outlined in the various planning documents are often ignored by both the public authorities and the private sector.
- A variety of land conversion and land redistribution schemes, for example, the Sugar Industry Efficiency Act (SIEA) has created an unsustainable pro-commuting land use pattern favouring private vehicle use.
- A lack of qualified professional planners at both central and local planning authorities.
- A lack of institutional capacity and coordination among the different Government departments.

Market Place



Source: MTPA

There is a need to strengthen enforcement mechanisms and strictly adhere to planning guidelines and legislation. It is important to implement recommendations of the ICZM Framework and the Study on ESA and promote sound development practices in the coastal zone by strict adherence to OPS and PPG.

Mauritius imports about 75% of its food, amounting to 19% of the country's total imports bill. As a net-food importing developing country, Mauritius is particularly vulnerable to the rapidly changing global food system resulting from volatile prices of food commodities, climate change and diversion of food crops to bio-fuels.

It is therefore imperative to increase the country's ability to produce its own food. However, competing demands on the limited land resources, decreasing soil fertility, water scarcity as well

as insufficient interest of the young generation in agricultural activities, make this a particularly challenging issue.

2.2.2.2 Coastal Zone Management

The coastal environment is an important asset for the socio-economic development of Mauritius. However, expansion of built-up areas on the coast, unplanned construction, land reclamation and clearing, tourism development, climate change and sea level rise are affecting the coastal zone. Presently, some 7km of beaches are affected by erosion.

A comprehensive framework for coastal zone management is in place and comprises policies, strategies and legislation. A number of measures have been taken to abate the impacts of erosion in the coastal areas, ban sand extraction, provide coastal rehabilitation, promote coral reef and lagoonal water quality monitoring and the creation of Marine Protected Areas, among others.

In addition, an ICZM Framework has been developed and a study on ESA undertaken for the proper and rational management of coastal and marine resources. Many coastal activities are also controlled through the EIA mechanism as well as the Building and Land Use Permit requirements. These also take into consideration the provisions of the PPG and OPS on setbacks, the plot coverage and the development density of coastal development.

Coastal Zone



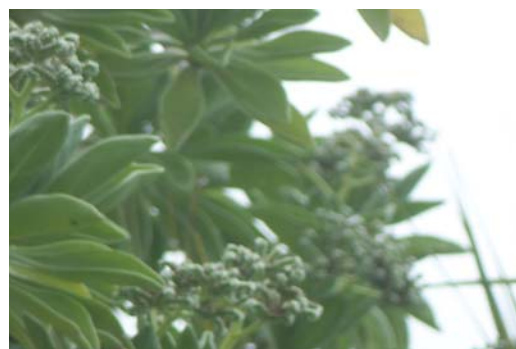
Source: MTPA

2.2.2.3 Biodiversity

Mauritius is characterised by a high level of unique and diverse species. The forest cover is around 25%, of which 2% is native forest.

The forests are extremely important to Mauritius as they provide vital protective functions which are crucial for the environmental sustainability and economic development of the country. The forests in Mauritius play a significant role in protection of watersheds, conservation of soil, habitats for fauna and flora, flood control and carbon sequestration. The emphasis of management of forests is gradually shifting from the traditional timber exploitation activities to other socio-economic activities that are less destructive, e.g. ecotourism, provision of leisure and recreation, medicinal plants, fodder and the production of non-timber products like venison and honey.

Pink Pigeon



Source: MWF

There are 691 species of indigenous flowering plants, of which 273 are endemic. The only native mammals are bats and, to date, 9 endemic bird species and 11 endemic reptile species exist on the island. However, this biodiversity is under increasing threat from changing land use patterns, habitat destruction and modification, invasive alien species, pollution, pests and diseases, climate change and possible natural disasters. As a result, Mauritius is one of the world's biodiversity hotspots and has the third most endangered terrestrial flora.

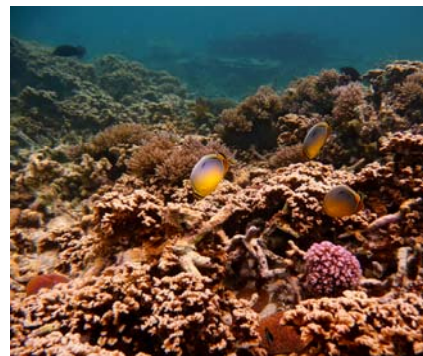
Policies and strategies for the conservation and sustainable use of biodiversity have been adopted and are at various stages of implementation. The National Biodiversity Strategic Action Plan (2006-2015); the National Invasive Alien Species Strategy and Action Plan (2009-2018), Islet National Park Strategic Plan (2004) and Management Plans for offshore islets are the main strategies that are in place for biodiversity protection. The legislation and policies for the management of forests include Forests & Reserves Act (1983), National Forest Policy (2006) and Forest Land Information System (FLIS).

Moreover, projects and programmes for the conservation of terrestrial biodiversity include the creation and management of nature reserves, national park and botanical gardens, propagation of endangered plant species, reforestation, species recovery for critically endangered birds and translocation of reptiles. Mauritius has so far saved 4 endemic bird species (Kestrel, Pink Pigeon, Mauritius Fody and Echo parakeet) from the brink of extinction, proclaimed 3 Ramsar sites of international importance, 10 national parks, and will be rehabilitating 400 ha of invaded forests into native forests under the Protected Area Network Project.

For marine biodiversity, only 40% of live coral cover exists in the lagoon and 30% off-lagoon and total fish catch has declined from 19,690 tonnes in 1993 to 5,270 tonnes in 2011. To conserve marine biodiversity, a system of Marine Protected Areas comprising fishing reserves, marine parks and marine reserves, has been established in the waters around Mauritius and Rodrigues. The Republic of Mauritius has, so far, proclaimed 6 Fishing Reserves and 2 Marine Parks as well as 5 Fisheries Reserved Areas, 4 Marine Reserves and a multiple-use Marine Protected Area in Rodrigues.

It is therefore necessary to undertake large scale investigations to identify, survey and characterise inland and marine biodiversity. Additionally, it is also imperative to implement multiple and mutually supportive policies, which involve conservation, sustainable use and recognition of biodiversity values.

Marine Ecosystem



Source: MTPA

2.2.2.4 Water Resources

Mauritius is a water-stressed country and water scarcity is a serious constraint for sustainable development of the island. Total water utilisation was estimated at 752 Mm³ in 2011. The agricultural sector accounted for 47% of the water utilised (356 Mm³), Hydropower 24% (181 Mm³) and the domestic, industrial and tourism sectors represented the remaining 29% (215 Mm³).

Increasing demand from a growing population, agriculture, tourism and industry also put pressure on this resource. With the changing lifestyle of the local population, it is expected that per capita water demand will further increase. By 2040, total water demand is projected at 1,200 Mm³ per year, which is in excess of projected supplies and close to the utilisable renewable potential of 1,233 Mm³ per year. The recent drought (2009-2011) has highlighted the vulnerability of the island. Climate change is expected to further exacerbate water scarcity by fluctuations in rainfall patterns.

During the past two decades, significant investment has been made to increase storage capacity, supply and improve water quality. There is an increasing reliance on groundwater, especially in times of drought, and it is imperative to protect the aquifers from sources of pollution.

A Master Plan Study for the development of water resources in Mauritius (2025-2050) has been completed. Additional water resources will be mobilised through construction of new dams or enlargement of existing dams, installation of pumping stations on rivers, new boreholes, reducing network losses and reviewing the water rights legislation for allocation of permits for a more equitable distribution. Furthermore, water sector reforms are underway under bilateral cooperation with the Singaporean Water Agency.

On the institutional front, several organisations are involved in water governance, leading to a fragmentation of responsibilities. This represents a challenge to the efficient and effective management of this vital but scarce resource. To redress the complexities of fragmented water management, it is envisaged to integrate all relevant institutions under a single umbrella.

Furthermore, to meet future water demand and supply, efforts should be geared towards preventing surface and groundwater pollution, promoting sustainable watershed management, reducing unaccounted-for-water to 25% by 2030 and optimising reuse of treated wastewater.

Natural Water Course



Source: MTPA

2.2.2.5 Pollution

- **Water Pollution**

The main sources of water pollution in Mauritius arise from dumping of solid waste in rivers, discharge of domestic and industrial effluents and run off from agricultural fields.

In Mauritius, most housing units use onsite disposal systems like septic tanks, absorption pits and cesspits. Up to now, only about 22 % of population have been connected to public sewers through the National Sewerage Programme, representing some 77,917 housing units and some 93,000m³ of wastewater per day. A Master Plan Study for wastewater sector 2014-2033 has also been completed. It is expected that, with the increase in house connections in the near future, the volume will reach an estimated 179,000 m³ by 2015.

Furthermore, about 55 hotels treat their effluent using small WWTPs & re-use the treated effluent for irrigation of lawns.

- **Air Pollution**

The major contributors to local air pollution are emissions from electricity generation, industrial activities, transportation, sugarcane burning, fuel quality and irregular maintenance of vehicles engines. Global challenges like ozone layer depletion and the release of Persistent Organic Pollutants are also national priorities. At present, the dependence on fossil fuel means that emissions causing pollution will continue to rise as the economy develops.

With a view to improve air quality, Government introduced a number of measures: adoption of air quality standards, monitoring of ambient air quality and vehicle exhaust emissions, introduction of unleaded petrol, reduction of the sulphur content in diesel to 50 ppm, promotion of renewable energy projects and phasing out of ozone-depleting substances, among others.

The future air quality management process should adopt an integrated approach including air quality monitoring methods and standards as well as air improvement targets in different sectors.

- **Noise Pollution**

Although not the most prominent source of pollution, noise pollution is the most commonly reported environmental problem in Mauritius. The main sources of noise pollution include: small scale industry (i.e. workshops, cabinet making, panel beating), multipurpose halls, places of entertainment, night clubs, religious activities, alarm systems and road traffic noise. Over the last 3 years, on average, 30% of total complaints registered at the Department of Environment and the Ministry of Health and Quality of Life were related to noise pollution problems.

A Technical Advisory Committee on Noise was set up in 2010 to come up with a common approach to tackle the problem of noise, so as to prevent or curb noise pollution and its harmful effects.

- **Environmental Management**

Owing to the multi-disciplinary nature of environmental management, the task of environmental protection is assigned to various government departments (Enforcing Agencies), with respect to specific environmental media and pollutants. The Police de l'Environnement and Local Authorities also contribute to enforcing environmental laws.

Enforcement and coordination for the protection and management of the environment was spread under different statutes. As a result, 41 enactments or part of enactments were declared as Environmental Laws under the Environment Protection (Declaration of Environmental Laws) Regulations that were promulgated in May 2005 and amended in 2009.

Enforcing Agencies are now able to make use of more stringent enforcement mechanisms provided under the EPA, thus enabling a synergistic approach to enforcement. However, lack of human resources, inadequate technical capacity and overlapping responsibilities sometimes cause impediments to enforcement both at the level of the Department of Environment and the Enforcing Agencies.

To keep track of pollutant release in the environment, the Environment Protection (Industrial Waste Audit) Regulations were promulgated in 2008. These regulations aim at keeping an account of the waste generated from an industrial activity and include keeping record of the origin, composition, quantity and disposal routes of waste produced.

- **Resource Efficiency and Cleaner Production**

Boosting the country's resource efficiency and adopting cleaner production are key priorities for the Government in view of the growing needs of the population, greater global resource constraints, as well as unpredictable climate change. Besides market trends indicate that buyers increasingly require suppliers to respond to sustainable production, and comply with acceptable standards related to quality, environmental management and social accountability.

The services orientation of the economy is seen as less polluting and less dependent on fossil-fuels, which is thus more in line with the sustainable development agenda of the country. For instance in the manufacturing sector, energy derived from non-renewable sources is still very significant. One project identified under the National Environmental Strategies (NES) and the National Programme on SCP, namely the setting up of a cleaner production centre could not be implemented due to lack of finance and technical expertise.

2.2.2.6 Solid and Hazardous Waste Management

The ever growing volume of waste, limited disposal capacity and current low rates of recycling are major challenges of solid waste management. Around 414,000 tonnes of solid wastes were landfilled while around 7,000 tonnes of Municipal Solid Waste (MSW) were sent for composting in 2011. If waste continues to grow at the present rate, the total amount of waste requiring management would reach around 472,500 tonnes by 2015. MSW is collected by Local Authorities and disposed of at the only landfill on the island, which is nearing saturation point.

The Ministry of Local Government and Outer Islands has developed a Solid Waste Management Strategy 2011-2015 with a focus on improvements in waste collection, increased resource

recovery and provision of adequate disposal infrastructure and appropriate treatment technologies. The target is to achieve a 40% recycle rate by 2015.

Mauritius also faces challenges as regards hazardous waste management. Infrastructure for the disposal of hazardous wastes is limited to a hazardous waste cell at the landfill, where only certain types of solid hazardous wastes may be disposed of. Government commissioned a national inventory of hazardous wastes in 2011 to identify the types and quantities of hazardous wastes generated, stored, treated and disposed of in Mauritius. This inventory provides the basis for the formulation of policies and strategies for minimization, recycling, local disposal and exportation of hazardous wastes.

The setting up of an interim hazardous waste storage facility is envisaged and the review of the Environment Protection (Standards for Hazardous Wastes) Regulations 2001 is underway.

Taking into account the projected growth in the number of residents and tourists and the increasing patterns of consumption and production, it is expected that total waste generation may increase by about 50% by 2030. Nearly 80% of waste generated has recycling potential. Hence there is an urgent need to adopt an integrated approach to waste management focusing on waste reduction, reuse, sorting and recycling with the introduction of a cost recovery mechanism.

Litter at a local beach



2.2.2.7 Climate Change

The impacts of climate change are already apparent in Mauritius through rising sea levels, changes in frequency and intensity of extreme weather events, weather variability, as well as recurrent floods and droughts.

An increase of 0.74°C in average temperatures during the last 50 years has been observed at Vacoas and an increase of 1.1 °C at Plaisance. Mean annual rainfall, recorded over the long term between 1905 and 2007 has decreased. There is an increasing number of consecutive dry days and decreasing number of rainy days. As far as sea level is concerned, the local mean sea level rose by 2.1 mm per year between 1998 and 2007. The Mauritius Meteorological Services data indicate that the rate of sea level rise (measured in the Capital City of Port Louis) has averaged 3.8 mm/year over the last five years.

Coastal Erosion



Source: MOESD

As a result, the Republic of Mauritius is likely to experience considerable economic loss, humanitarian stresses and environmental degradation. The principal economic and environmental sectors most vulnerable to climate change include: tourism, agriculture, coastal zone, fisheries, health and freshwater. Exacerbating these impacts are the inherent environmental vulnerabilities of SIDS, which include small land area, susceptibility to natural disasters, geographical isolation, limited natural resources and sensitive ecosystems.

The institutional framework for climate change is in place with a Climate Change Division at the Ministry of Environment & Sustainable Development and a series of national and sectoral policies and programmes to mitigate and adapt to climate change.

Major initiatives include increasing use of renewable energy, promoting energy efficiency and conservation, reforestation programmes to increase carbon dioxide capture, recycling and waste minimization. To reduce vulnerability and increase resilience to climate change, adaptation measures have focused, among others, on coastal and marine zones, agriculture and food security, biodiversity protection and the management of water resources. Projects undertaken include coastal rehabilitation, coral farming, mangrove propagation in risk areas, cultivation of more drought and heat resistant crop varieties and improved livestock housing and breeds.

A major programme of action is the Africa Adaptation Programme, which aims at creating the enabling environment to develop, implement, manage, and monitor long-term and cost-effective adaptation policies and plans, as well as strengthen knowledge and capacities to meet the climate change challenge. The Africa Adaptation Programme will also mainstream climate change adaptation considerations into core development policies, strategies and plans for disaster risk reduction, agriculture, environment, fisheries, tourism, water, education and finance. Mauritius is preparing its Second Technology Needs Assessment, whose key aim is to bridge the gap between identification of appropriate technologies and design of action plans that would enable Mauritius to reduce greenhouse gas emissions and support adaptation.

Mauritius is one of the four countries selected to implement the UNESCO initiative on Climate Change Education for Sustainable Development (CCESD). The main objective of the programme is to support countries in strengthening their educational responses to mitigate and adapt to climate change with the ultimate goal to help young people understand and address the impact of global warming, while also encouraging the changes in attitudes and behaviour needed to put our world on a more sustainable development path.

Climate change will pose serious risks for Mauritius as its impact will increase over time. Climate change should be mainstreamed into core development policies, strategies and plans. Special attention needs to be given to sectoral vulnerability and to the pursuit of socio-economic assessments of climate change impacts.

2.2.2.8 Environment Trends, Gaps, Challenges and Opportunities

Current trends and gaps	Challenges and opportunities
Good trend information on the loss of coral has been collated, but the scope and quantity of other environmental information are patchy.	To improve the scope, and quantity, of information about the environment and ecosystems.
Threats from urbanisation and pollution need to be identified and capacity needs to increase in order to guide future policy.	To improve capacity for environmental protection and management.
Planning legislation is not adequately enforced, placing further pressure on the natural environment, with potentially catastrophic effects on tourism and agriculture.	To improve the planning and enforcement systems to better account for conflicts between the environment and development.
Waste management is a major problem and under current trends, Mauritius will rely on imported services, thus becoming further dependent on external markets.	To improve the recycling and management of all categories of waste.
Climate change will pose serious risks for Mauritius.	To improve public awareness of how to protect the environment.
	To improve economic incentives to balance environmental and development needs.

2.2.3 Employment/Economy

2.2.3.1 Land-based Economy

Mauritius is moving towards greening the employment sector. According to a study by the International Labour Organization (ILO) in 2011, green jobs in Mauritius stand at approximately 6.3% (35,160 jobs) of total employment which is estimated at 558,100 for the year 2010. Most green jobs were found in electricity generation with around 23% of jobs in areas such as the supply of bagasse derived from sugar cane to electricity plants.

In agriculture 12% of employment can be considered green as well as decent, primarily in sustainable fishing, followed by forestry. While some textile companies have been greening their processes, with, for example, solar water heating systems, grey water use and recycling and natural air-cooling, only around 5% of employment in that sector was defined as green. The same accounts for the results in the services sector where 3% of the jobs are found in energy and water efficient tourist resorts.

Sectors such as recycling, waste management, green recreational activities, water and renewable energy also represent green jobs, though these sectors currently have a low employment level.

2.2.3.2 Ocean Economy

Mauritius has very limited land resources, most of which are already exploited and there is little scope for further development or expansion on land in a sustainable manner. However, Mauritius has a huge EEZ of over 2 million km², of which 99% is the unexplored ocean.

As a result, the exploitation of ocean and marine resources presents an immense opportunity to promote and improve economic diversification and resilience of the country. With the recent expansion of the continental shelf by 396,000 km² (jointly with Seychelles) the potential has further increased.

However, while the development of an Ocean Economy presents an added opportunity for the country to expand its spatial boundaries, develop scientific knowledge and new business opportunities, Mauritius will require significant resources and expertise to exploit its ocean and marine resources in a comprehensive and sustainable manner.

Fishing Industry



Source: ANCORS

The country presently lacks the necessary financial capacity, skills, and technology to explore, study and utilise the immense potential offered by the marine environment for:

- Food security (seafood hub, fisheries, other marine living resources);
- Economic development of non-living resources (e.g. exploitation for manganese, nickel and other mineral nodules);
- Energy (e.g. marine renewable energy, marine algae, oil and gas);
- Water;
- Health, pharmaceuticals and nutraceuticals;
- Leisure;
- Carbon sequestration; and
- Climate change studies.

Whilst the marine environment offers a prospect for sustainable development for SIDS like Mauritius, an integrated assessment of the state of the marine environment is required. The

formulation of a national policy on the sustainable management and use of ocean and marine resources is also important.

2.2.3.3 Green Economy

The green economy is an opportunity for the Republic to leapfrog in its sustainable development pathway. At national level, there is strong political will and commitment to advance the country on the path of inclusive and green growth. In fact, since 2008, annual budget exercises coupled with firm public policy decisions have provided the impetus for actively realising sustainability goals and the transition towards a green economy. These include among others: integrated policy and planning, sustainable consumption and production practices, the imposition of green taxes and levies, energy efficiency and renewable energy programmes, poverty alleviation, social development projects and the setting up of the ‘Maurice Ile Durable’ Fund to finance sustainable development projects.

Adopted in 2008, the National Programme on SCP for Mauritius also aims at greening the economy through a number of projects on sustainable energy consumption, sustainable water consumption, sustainable buildings and construction, integrated waste management and recycling, sustainable public service practices, improved market supply of sustainable products and education and communication for sustainable lifestyles.

Although Mauritius is committed to green its growth trajectory, lack of resources and capacity (e.g. capital, technology and expertise) may be a great impediment to its achievement. External sources of funding and overseas development assistance will be imperative to fully tap opportunities that abound from our natural assets (e.g. EEZ and energy potential of ocean), strengthen institutions to play a more important role in implementing green economy strategies and policies.

The challenge is to identify opportunities, determine the kind of investment needed and the key target sectors in order to stimulate green growth without endangering the competitiveness of the economy on which jobs entirely depend. Policies and investments need to be refocused to target sectors and areas including renewable energy, sustainable agriculture, fisheries, wastes, manufacturing, buildings and ecotourism. The promotion of sustainable consumption and production patterns is also a powerful lever to accelerate the transition to a green economy and transform environmental and social challenges into business and employment opportunities. Furthermore, in moving towards a green economy, the pattern of employment will need to shift towards economic activities which have low carbon inputs per unit of value added.

2.2.3.4 Employment Trends, Gaps, Challenges and Opportunities

Current trends and gaps	Challenges and opportunities
Fishing has declined, sugar prices are volatile, and tourism has not grown as expected. There is an urgent need to diversify into new export markets.	To shift from the conventional patterns of development towards a green economy.
While the education system provides suitable training for green jobs, the market within Mauritius is weak and there is a high risk that skilled people will emigrate.	To develop local demand for green products and services, e.g. green procurement.
If not suitably managed, expansion of the ocean economy could further threaten marine ecosystems.	To develop the ocean economy.
	To provide a suitably skilled Mauritian workforce ready for employment in highly technical sectors (also a challenge for education).
	To develop an export market for green products and services.

2.2.4 Education

Education has always been regarded as the key element for economic and social advancement and has always been one of the priority areas in the national development strategy of the country.

Accordingly, Government has taken several initiatives and invested in providing access to education. Mauritius has progressed in a relatively short time by adapting its education system to the needs of society, as well as to regional and international demands.

Emphasis has been placed on both access and quality of education. Owing to its sound education system, Mauritius has achieved the goals of universal primary education and gender parity in enrolment. This is the result of government's impetus for free primary education for all, which started in the 1940s and gathered momentum after independence in 1968.

Education is free at primary, secondary and full time undergraduate levels at the University of Mauritius. Education is compulsory from 5 up to the age of 16. Primary education was made compulsory in 1993. The provision of free public transport to all students at primary, secondary and tertiary levels in 2005 has also been a major step towards removing barriers, impeding access to education. These policy decisions, coupled with massive investment in the sector, have resulted in significant progress in the educational sector at all levels.

The Zones d'Education Prioritaires (ZEP) Project has been created to address educational failure. Its strategy is based on the foundation that positive reinforcement is required to create favourable learning conditions for children mostly in the less developed regions. In the broader perspective, this approach aims to address social inequalities by providing equal opportunities to all primary school children of the country.

However, a number of gaps still need to be addressed urgently:

- Improvement in the pass level in the 'Zone d'Education Prioritaire' (ZEP) schools is still short of target.
- The failure rate at the end of the primary cycle has remained high over the years, and
- There is also an increasing mismatch between skills available, and new and emerging job markets.



Source: GIS

Primary Education



Source: MOESD

Quality of learning and efficiency of participation in pre-primary education need to be enhanced, especially since the latter plays a pivotal role in building the foundations upon which all future learning ultimately depends. All children aged 3 to 5 years need to have access to quality pre-primary education that will prepare them for primary school. A Quality Assurance Mechanism for Early Childhood Care and Education is being developed to ensure better compliance with the rules and regulations by all service providers so that all children in care have stimulating, positive experiences and interactions.

The main weaknesses of the primary and secondary school sectors are characterized by the high rates of repetition at the end of primary cycle and at Form IV and Form V levels. A method to monitor pupils' progress needs to be implemented to follow pupils throughout their schooling and beyond, to better understand the reasons for early dropouts and consequently to support appropriate policies/measures to minimise wastage and inefficiency in the education system.

There is a need to strengthen the pre-vocational education to reduce dropouts, increase transition rates to vocational and general secondary education and improve learning outcomes.

The challenge for education is to empower people of all ages to be responsible for creating a sustainable future, promote equitable access to quality education, ensuring that all learners attain high levels of achievement as the basis for lifelong learning and good citizenship.

This will mean changing the approach to education in the formal, non-formal, and informal sectors to ensure that there is common support for MID. The education system is central to the development of the green economy, since it provides the knowledge, training and skills for the workplace and in society. Critical consciousness is important to enable us to change our attitudes and eventually our behaviour.

There is insufficient labour to service development needs in certain sectors and a mismatch among the local population between the skills needed and the skills available. For instance, there is a paucity of quality ICT manpower that is needed to keep pace with this highly evolving sector and to meet the challenges from international competitors. Other higher knowledge intensity sectors are facing the same constraint.

2.2.4.1 Education Trends, Gaps, Challenges and Opportunities

Current trends and gaps	Challenges and opportunities
Despite on-going efforts to improve efficiency and school completion rates, the rate of failure remains too high.	To improve the capacity to implement specific programmes, policies and strategies.
There are green school initiatives and a high level of environmental awareness, but this is not borne out in sustainable living behaviour.	To enhance education for sustainable development.
There are insufficient vocational training options for people wanting to train to enter the green economy and the career path for the green economy is not clear.	To empower Mauritians on the importance and know-how of healthy living.
Technical vocational and training systems are not well coordinated between skills providers, leading to duplication and gaps.	To improve the integration of the technical, vocational education and training systems.

2.2.5 Equity

Social equity is one of the hardest sustainable development goals to quantify and achieve. Mauritius has already achieved great success in providing a comprehensive welfare system to all. In total, Mauritius spends about 50% of its budget on a comprehensive welfare system comprising free education, free health care and universal non-contributory pension for the elderly and schemes for vulnerable groups. Other incentives, such as free public transport for students and the elderly have also been introduced.

Subsidies on basic commodities such as rice, flour and cooking gas have also been maintained. Subsidies and other transfers (in terms of percentage of expenses) stood at 25.69% in 1990 and reached 31.42% in 2010 (World Bank, 2012).

The position of women in Mauritian society has significantly improved over the past two decades. Government also targets a quota of at least 33 % representation of women in Parliament and decision making. Mauritius ranked 11th out of 102 non-OECD countries on the Social Institution and Gender Index in 2009 (OECD, 2010).

2.2.5.1 Poverty Alleviation

Although a number of actions are already being taken to address the issue at various levels, poverty still remains a challenge. Income inequality is growing and the Gini Coefficient has deteriorated during the past five years, increasing from 0.371 to 0.388⁶.

Through the establishment of the appropriate legal and institutional framework, the country has made major strides in supporting vulnerable groups in participating in the national development process. The National Empowerment Foundation (NEF), under the Ministry of Social Integration and Economic Empowerment has identified some 10,000 families, who are still living below the poverty threshold. Moreover, there is insufficient capacity, especially at the level of NGOs, to play an active role as essential partners in the poverty alleviation programmes set up by the Government. There is need for more canvassing and outreach programmes to encourage vulnerable families to join empowerment activities.

Over the past two decades, Government has made sustained efforts to extend house ownership to a maximum of households in Mauritius, guided by the policy of 'un toit pour tous' ("A roof for everyone"). While 76% of people owned their homes in 1990, this figure had increased to 87% in 2000, and 89% in 2011⁷. Government policy aims at providing decent, strong and adequate housing for each household, facilitating access to residential land and private property to the Mauritian population, and creating appropriate infrastructure and services in all residential areas. This contributes to the pressure being placed on limited land resources.

In addition, a policy for low-cost housing to assist economically disadvantaged groups to become home-owners was implemented by the State through the creation of the National Housing Development Company (NHDC) in 1991, and the establishment of the Social Housing Development Fund. This Fund aims at financing the construction of social housing as well as the associated infrastructure services. By 2011, the NHDC had built more than 11,000 homes, for a total investment of Rs 3.5 billion.



Source: NEF

The provision made under the Finance Act of 2009 for a mandatory 2% CSR levy has also boosted the involvement of the business sector in social and environmental issues. Since January 2012, companies are required to spend 50% of their CSR Fund on four priority areas, namely social housing, alleviation of absolute poverty and community empowerment, welfare of children from vulnerable groups, and prevention of non-communicable diseases.

The treatment of the elderly is also an area of concern in the Republic. The population growth rate is at European levels, about 0.4%. Official projections show that Mauritius will face an ageing population with the population above age 60 at 28.5% by year 2041. This will place a proportionally larger burden on public resources such as welfare payments and health care.

There are many opportunities for MID to strengthen the national identity and increase happiness. For example, continuing to support and enhance existing programmes for educating adults in parenting skills, encouraging families to look after their elders and concepts such as community

⁶African Peer Review Mechanism (2010), Country Report 13.

⁷Population and Housing Census, 2000; African Peer Review Mechanism, 2011.

gardening will add value to families in the Republic. Improvement of the quality of life of all people in Mauritius needs to be addressed by emphasizing the importance of healthy living and happiness at the individual, family, community and national level.

2.2.5.2 Equity Trends, Gaps, Challenges and Opportunities

Current trends and gaps

The current level of equity in Mauritius, in terms of Gini Coefficient, has regressed, i.e. the income distribution between the rich and the poor is widening.

The demand for affordable social housing continues to grow, but the cost of providing such housing is high, and rent collection remains an issue. If these trends are not addressed, there is likely to be an increase in homelessness.

Further action is required in order to continue to address the issues of structural poverty, especially to stimulate social inclusion.

Challenges and opportunities

The challenge is to maintain the progress made to date, so that growth does not result in a reduction in equity.

There are significant opportunities in the green and ocean economies. The challenge is to give all Mauritians access to those opportunities.

CSR programmes provide an opportunity to engage businesses in the advancement of social equity.

There is an opportunity to improve the empowerment of women.

2.2.6 Overarching MID Gaps, Challenges, Goals and Targets

Taking account of the technical gaps and challenges for each of the five Es, there are common themes that emerge as gaps, challenges, goals, and opportunities.

2.2.6.1 Gaps

The situational analysis demonstrates that progress has been made in most areas applicable to MID, but some gaps and challenges still remain. Some of the principal gaps are:

- i. National and sectoral targets have been set, but the pathway for their delivery has not been established or is not clear. For example,
 - *for renewable energy, the target has been set at 35% of supply by 2025, but there is no clear pathway to expand renewable energy production to reach that target. The introduction of large-scale coal-based generation will reduce the need for renewable energy and increase the nation's dependency on fossil fuels, and exposure to world fuel prices.*
 - *for waste management, the National Waste Strategy sets waste reduction targets, but owing to difficulties in implementation, there is no clear route for achieving the targets.*
- ii. Provision for change has been planned and the implementation route determined, but the necessary actions have not yet been implemented. For example,
 - *the National Programme on SCP for the period 2008-2013 identified 44 projects. Although 13 projects have been implemented and 11 projects initiated, 20 projects have not been implemented – including several of the 'high priority' projects.*
- iii. On-going activities which are important for the sustainable development of the country are not always given equal priority by different Ministries.
- iv. There is no clear guidance on what would make a project, action, or Government plan 'MID compliant'.

- v. The data required to monitor progress in realising the MID vision is not collated, thus making it difficult to keep track of overall progress. For example,
 - *data on some international updates and records are not available every year. The result is that Mauritius is unable to track progress towards its own targets and unable to monitor its regional and global position.*

- vi. The decline in international economic activity has affected economic growth in Mauritius. There is a risk that the global economy will recover in a different form, with longterm effects on the textile and tourism industries. The challenge is to balance the pressure for economic growth and its employment opportunities with the other aspects of MID. For example,
 - *the Government Policy of doubling the number of tourists visiting the island is not achievable, since it is not clear how this will fit into the context of sustainable development, including such issues as road traffic, energy and water demand, waste management, pollution control and pressure on the coastal zone.*

- vii. The MID Vision of 2011 sets out the intention for sustainable growth of the green economy, but development of the green economy has been limited to a few projects and activities, such as the supply of solar hot water systems. There are likely to be further opportunities to expand the green economy. A morecoordinated approach may help to accelerate growth in both demand for and supply of green products and services, and hence in the number and quality of green jobs. Opportunities to expand the oceaneconomy also exist but there are no clear plans for its development in line with the MID vision. An integrated approach to developing the ocean economy may help to ensure that growth of this significant sector does not undermine the progress made in sustainable development.

2.2.6.2 Challenges

The principal challenge is to facilitate economic growth that is sustainable within the definition of MID, i.e., it benefits all aspects of society and human welfare. Of particular importance is equitable growth of the economy, in which the benefits of economic development are available to all Mauritians. It is also vitally important that growth is environmentally sustainable, since the Mauritian environment is sensitive and physically constrained. Specific challenges are:

- To deliver equitable economic growth, especially in the green and ocean economy.
- To remediate the decline of ecosystems and the natural environment.
- To find the funding and enthusiasm to implement actions and recommendations made under previous development projects, such as the National Environmental Action Plan, the Education and Human Resources Strategy Plan, the Long-Term Energy Strategy and the National Programme for Sustainable Production and Consumption.
- To ensure that future investment in land development and infrastructure does not further reduce the sustainability of the Republic of Mauritius. For example, this would include considering transport and fuel demand implications of commuting arising from new towns and villages, and potentially ensuring that future developments include mixed land uses, so that employment and housing are co-located.

2.2.6.3 Goals

The natural and social environment in Mauritius will be under increasing pressure with growth of the population and of the economy. Rapid economic development has placed increasing pressures on land and social resources, with rising demand for urban and infrastructural expansion and for support of the agricultural, industrial, manufacturing and tourism sectors.

A summary of the overarching MID goals is given below:

- **Promote sustainable land management** through integrated land planning and strengthening enforcement of planning guidelines and legislation. A holistic and integrated approach to transport and land use should be adopted.
- **Reduce the extent of environmental degradation**, through sustainable management of forests, sustainable agricultural practices and coastal development.
- **Achieve significant progress in water conservation** particularly in industry, domestic and agricultural sectors, as well as sustainable watershed management.
- **Strengthen integrated solid waste management** with resource recovery and recycling.
- **Expand the share of renewable energy and energy efficiency**, given the high importation costs of fossil fuels.
- **Consolidate climate change adaptation over the long term** for the well-being and security of livelihoods of the population and strengthen the country's resilience to climate change impacts.
- **Improve the equitable distribution of Gini coefficient.**
- **Improve inclusivity.**
- **Sensitize the public on sustainable living** through the development of green skills across all sections of the community.

2.2.6.4 Targets

A suite of MID realisation indicators will make it possible to track progress in each of the five Es. The main targets are:

Energy

- Achieve the national target of 35% renewable energy by 2025.
- Reduce energy consumption in non-residential and public sector buildings by 10% by 2020.

Environment

- Reduce the ecological footprint to be in the upper quartile of performance of similar income nations, by 2020.
- Meet the environmental sustainability targets of the Millennium Development Goals.

Employment/Economy

- Increase the percentage of green jobs, from 6.3% in 2012 to 10% by 2020.
- Maintain or improve position in the World Economic Forum's International Competitiveness Index.

Education

- Achieve 100% MID literacy by 2020 (i.e. every citizen of the Republic of Mauritius understands the MID vision and takes action towards MID).
- To be an internationally recognised knowledge hub for sustainable development in the region by 2020.

Equity

- Improve position in World Poverty Index.
- Improve current status in the Gini coefficient of income inequality.

3. Process and Institutional Arrangement



3.1 Present Institutional Framework

Given the importance of the environment for its economy, the Republic of Mauritius has shown commitment to implement international recommendations on sustainable development. These international commitments recognise the specific vulnerabilities of SIDS, such as the 1992 Agenda 21, the 1994 Barbados Programme of Action (BPOA) for SIDS, the 2002 Johannesburg Plan of Implementation (JPOI) and the 2005 Mauritius Strategy for SIDS. Mauritius has therefore been pursuing a sustainable development strategy in its economic and social development plans despite inherent vulnerabilities, such as capacity and financial constraints.

The Ministry of Environment is the key organisation for environmental protection and management. The Department of Environment (DOE), established in 1989 as an institutional response to emerging environmental challenges, maintains the primary responsibility of ensuring environmental protection, planning, monitoring, coordination, enforcement and awarenessraising. The Environment Protection Act (EPA) 2002 is the main legislative framework to support environmental management in Mauritius. Since 2010, the portfolio of the Ministry of Environment has been broadened to include sustainable development.

A dedicated fund, the MID Fund set up in 2008, with a seed money of USD \$40 million from the national budget is consolidating the foundation to achieve the goal of embedding sustainable development through a number of MID initiatives.

Several projects to promote sustainable development are being funded through the MID Fund. A first series of projects included provision of grants to targeted individuals for purchase of solar water heaters, the use of Compact Fluorescent Lamps for public lighting, incentives to Small Independent Power Producers, and the setting up of a wind farm in Rodrigues, among others.

In order to give greater impetus to the MID quest, a Steering Committee comprising representatives of various Ministries and Departments, the academia and donor agencies was set up within the Prime Minister's Office in 2009, to coordinate the MID project from a more holistic perspective, to harmonise efforts in the MID endeavour, so as to ensure timely implementation of relevant projects and to look into all aspects of sustainability.

In 2011, the Steering Committee was converted into the Commission on MID, which operates under the aegis of the Prime Minister's Office. The responsibility of the Commission on MID is to ensure the finalisation of the MID Action Plan and its timely implementation.

A Strategic Committee on MID, with a chairperson from the private sector, provides advice on the approach to implementing MID, and on the scope of individual projects, actions, and responsibilities.

3.2 Present Policy Framework

National and sectoral policies, strategies and action plans for environmental protection, economic and social development and poverty reduction have adopted sustainable development principles. Recently, the national budgets have put emphasis on the greening of the economy, making substantial provision for sustainable development projects, including energy efficiency, renewable energy, poverty alleviation and other social development projects.

A National Environment Policy (NEP) was adopted in 2007, based on a series of guiding principles, which include among others: placing humans at the heart of environmental sustainability, mainstreaming environmental concerns in economic and social development, the precautionary principle, the polluter pays principle, maintenance of ecological integrity as well as environmental stewardship. The NEP outlines a series of thematic policy objectives and strategies to address environmental challenges.

The National Environmental Strategies, its National Environment Action Plan and Environment Investment Programme for the decade from 2000-2010 were developed in 1999 and reviewed in 2008. The review aimed at carrying forward and extending the achievements of the National Environment Action Plan while recommending corrective measures to overcome the constraints experienced.

Sectoral policies have also been developed across various thematic areas such as energy, coastal zone management, land, biodiversity, forests, wastewater, solid waste, and tourism among others.

A National Programme on Sustainable Consumption and Production (2008 - 2013) for Mauritius is currently being implemented at national level and success has been insufficient so far due to the limited resources available. Two recently completed projects of major significance to MID relate to the development of policy and action plan for sustainable public procurement and the development of policy, guidelines and a rating system on sustainable buildings and construction.

Government has recently announced the preparation of a 10-year Economic and Social Transformation Plan (ESTP) that would set out the strategies and policies for Mauritius to shift from the current income of about US\$8,000 per capita to a high-income country with income of over US\$14,000 per capita⁸. ESTP would help meet the challenges for an accelerated sustainable and equitable growth through increased human capital, better policies and processes, as well as more complementary public and private investment and productivity advances.

ESTP is complementary to the work of the MID initiative and establishes the vital link with the budgeting exercise. Government has set up a National Strategic Transformation Commission under the aegis of the Ministry of Finance and Economic Development which will, in consultation with all stakeholders, make recommendations on optimization of resources, inclusive growth, sustainable development, urban planning, land zoning as well as promotion of new sectors.

⁸ Purchasing Power Parity

3.2.1 Institutional Framework, Trends, Gaps, Challenges and Opportunities

Current trends and gaps	Challenges and opportunities
<p>The Sustainable Development Division within the Ministry of Environment and Sustainable Development has environmental expertise but MID is cross-cutting and requires expertise in various other fields of sustainable development.</p> <p>Other Ministries do not have sustainable development divisions and if they did, there would be a risk of overlapping roles.</p> <p>The Commission on MID does not currently have enough staff for it to be able to actively coordinate all MID activities. As more MID projects are started, it will not be able to engage sufficiently in them to achieve their outcome.</p> <p>The Strategic Committee on MID does not currently have a clear mandate on its responsibilities or the level of advice that it should give on sustainable development issues.</p>	<p>There is an opportunity for greater coordination of MID, with active collaboration between Ministries to deliver cross-cutting projects.</p> <p>The challenge is to bring together the combined expertise of the Ministries, Private Sector and civil society in the implementation of the MID Policy, Strategy and Action Plan.</p> <p>The opportunity is to develop an institutional framework that will be a catalyst for integrated MID projects. It will need appropriate support from Government and other stakeholders.</p>

3.3 Proposed Institutional Framework

As challenges increase the present institutional framework will need further consolidation in order to ensure effective implementation of the MID Action Plan and to meet the objectives as provided for in the Government Programme 2012-2015 on Sustainability.

The Commission on MID will report to Government. It will have the following mandates:

- Coordinate and ensure the timely implementation of the MID Action Plan as provided for in this document;
- Ensure follow-up actions regarding any relevant decisions taken by the National Strategic Transformation Commission (NSTC), with respect to sustainable development;
- Review the MID Policy, Strategy, and Action Plan, whenever required;
- Continuously keep abreast with, and be informed of, international best practices and integrate same in the MID Policy, Strategy and Action Plan;
- Facilitate the implementation of projects involving different stakeholders; and
- Monitor and evaluate the implementation of MID and related projects.

Moreover, the Commission on MID will interact with implementing Ministries and Ministry of Finance and Economic Development during Budget consultations with a view to ensuring that MID projects have their financial resources. The Commission on MID will thus be able to oversee the effective and timely execution of the said projects.

The MID Action Plan will be implemented alongside the ESTP and this interaction would provide the operational link between the long-term objectives and the 3-year Programme Based Budgeting of Ministries, thus charting across the implementation and monitoring of set targets. In order to deliver on the above mandates, the Commission on MID needs to be strengthened as a matter of priority, with the appropriate administrative and project coordination staff for effective delivery of projects.

The existing Strategic Committee on MID, which comprises members from both the private and public sectors will continue to provide guidance to the Commission on MID. The Ministry of Environment and Sustainable Development will continue to collaborate with the Commission on MID in all matters pertaining to environmental issues and sustainable development in general.

3.4 Proposed Legal Framework

The setting up of the above institutions and other matters related to sustainable development require a legal framework in the nature of a specific legislation for sustainable development. In the medium and long term, it is proposed that a Sustainable Development Act be legislated. In the interim, existing legislations may be amended to cater for the necessary institutional set up to drive MID.

3.5 Current MID Policy Framework

The development of the MID Policy, Strategy and Action Plan is founded on the National MID Vision and the MID Green Paper 2011.

As a cross-sectoral instrument, the MID Policy, Strategy and Action Plan present the opportunity to enhance or streamline the current policy context and at the same time promote sustainable development.

MID policies are not intended to replace or supersede existing policies, but to present new policies or enhance existing ones. For example, the Long Term Energy Strategy (2009- 2025) prevails as the primary mechanism to guide the energy future of Mauritius. Each and every MID policy, strategy and action facilitates or enhances the achievement of the MID vision.

Along the same line, in Rodrigues, the implementation of the Sustainable Integrated Development Plan for Rodrigues (SIDPR) will help in achieving MID.

In the preparation of the MID Policy, Strategy and Action plan, an evaluation of Government's existing policies was undertaken to identify:

- What policies were already developed;
- Whether there were gaps in the existing policies; and
- Whether there were policies absent that needed to be developed in order to realise the spirit of MID.

The stock taking exercise of policies relevant to each of the five Es is illustrated in Table 1. Government policies and working groups' recommendations were analysed, opportunities and gaps identified and actions proposed in line with the MID objectives.

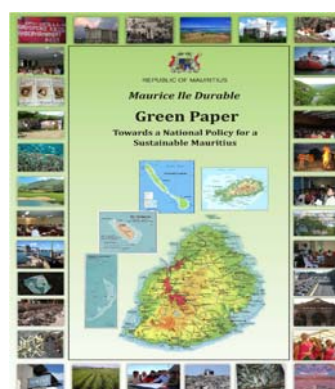


Figure 3.1: MID Green Paper

The National Maurice Ile Durable vision seeks to make Mauritius a model of sustainable development.

It will bring Mauritius to a steady state of sustainable development and demonstrate the approach which other Small Island Developing States can themselves learn from and improve.

Table 1: Existing Policies and Strategies Directly Applicable to MID

Relevant Policies and Strategies	
Energy	Long Term Energy Strategy (2009-2025)
	Renewable Energy Master Plan (under preparation)
Environment	National Environment Policy (NEP), 2007
	National Environmental Strategies (NES), 1999
	Updated National Environmental Strategies, 2008
	National Biodiversity Strategy and Action Plan (NBSAP), 2006-2015
	Policy Guidance for Environmentally Sensitive Areas in Mauritius, 2010
	National Invasive Alien Species Control Strategy and Action Plan, 2010-2019
	Sugar Sector Strategic Plan 2003-2007
	Non Sugar Sector Strategic Plan 2003-2007
	Food Security Strategic Plan 2008-2011
	Mauritius Food Security Strategic Plan 2013-2015
	Multiannual Adaptation Strategy –Sugar sector Action Plan (2006- 2015)
	Strategic Options in Crop Diversification and Livestock Sector, 2007-2015
	Blueprint for a Sustainable Diversified Agri-Food Strategy for Mauritius 2008-2015
	National Forest Policy, 2006
	Development of Management Plans for the Conservation and Management of Offshore Islets, 2004
	The Islets National Park Strategic Plan, 2004 and individual Management Plans for eight islets
	Round Island Management Plan, 2008-2012
	Fisheries Master Plan and 5-year Fisheries Action Plan.
	National Plan of Action to prevent, deter and eliminate illegal, unreported and unregulated fishing, 2010.
	Integrated Coastal Zone Management Framework, 2010
	National Development Strategies (NDS) 2003
	Solid Waste Management Strategy 2011-2015
	National Climate Change Adaptation Policy: Framework: Policy, Strategy and Action Plan
	Mainstreaming Climate Change Adaptation in the Agriculture, Tourism and Fisheries Sectors in the Republic of Mauritius and in the Water Sector for Rodrigues
	Development of an Inundation, Flooding and Landslide National Risk Profile, Maps, Strategy Framework and Action Plans for Disaster Risk Management for the Republic of Mauritius
	Identification of Climate Change Mitigation and Adaptation Technology Needs and Development of National Technology Action Plans
	Economy/Employment
Country Progress towards the Millennium Development Goals - 2009	
Governance Statistics, 2010	
Education	Education & Human Resources Strategy Plan (2008-2020)
	"Zones d'Education Prioritaires" (2001-2002)
	The National Curriculum Framework (Pre Primary), 2009
	The National Curriculum Framework (Secondary) , 2009
	The National Curriculum Framework (Primary), 2007
	Towards a Quality Curriculum - Strategy for Reform (September 2006)
	National Policy Framework for the setting up of Tertiary Educational Institutions in Mauritius
	Special Education Needs and Inclusive Education in Mauritius, 2006
	Quality Initiatives for a World Class Quality Education – 2006
	Developing Mauritius into a Knowledge Hub and a Centre of Higher Learning, 2005
	National Literacy & Numeracy Strategy (February 2003)
Equity	National Gender Policy Framework , 2008
	National Policy Paper on Family, 2006
	National Youth Policy 2010 - 2014

4. Part One – MID Policy



4.1 Policy Aims

The aim of MID is to steer the development pathway of the Republic of Mauritius in a sustainable direction. It is hoped that every Mauritian will adopt this goal and feel empowered to make informed choices daily at the individual, household, business, community, and national levels.

The MID policy is supported by a 10-year Strategy and 3-year Action Plan. The MID Policy, Strategy and Action Plan are intended to evolve and adapt with knowledge, cultural change and emerging challenges.

The proposed policies draw heavily on the outputs of the working groups in order to make best use of the stakeholder input. Each policy has been reviewed and in some cases reworded in order to draw out the policy aspects and to harmonise the terminology. In some cases, proposed policies were deemed to be more appropriately considered as strategies or actions.

4.2 Policy Objectives and Guiding Principles

The main objectives of this policy are:

- To embed the principles of sustainable development into the national identity of Mauritians, where this is reflected in every aspect of decision making;
- To plan for longterm development and success in developing a vibrant economy, healthy environment and culturally diverse society;
- To make the Republic of Mauritius a safe, fair, equitable and sustainable place for generations to come;
- To increase the resilience of our nation to changing external factors, such as climate change or global crises; and
- To stimulate sustainable development stewardship in all segments of the Mauritian society and inculcate through education and sensitisation wise consumption and production choices.

The Guiding Principles are intended to be applied to all activities and represent the spirit with which Government will strive to deliver MID. The MID Guiding Principles are listed in Table 2 below.

Table 2: MID Guiding Principles

MID Guiding Principles	
Empowerment	Empowering individuals to take/assume personal responsibility at home, at work and during their leisure time.
Governance	Trust, transparency, honesty and accountability are the cornerstones of sustainable society.
Innovation	Essential to the stimulation of ideas, market development, social development and the creation of green economic activity.
Integration and Holistic Thinking	Adopting a holistic approach to decision-making and ensuring that basic ecological and societal integrity is maintained and supported.
Internalisation	Accounting for the full cost of environmental and social degradation within our decision-making process.
Science Based Governance	Promoting a culture of knowledge, education, awareness and accountability through the use of best science and data for effective and informed decision making. The information shall be accessible and understood by all stakeholders. Traditional and indigenous knowledge shall also be given due recognition and be fully utilized.
Implementation and Delivery	Following on actions implemented, monitoring and enforcement are essential to effective delivery.
Precautionary Principle	In case there are credible threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a justification to postpone cost-effective measures to prevent impacts or to condone activities that exacerbate a problem.
Polluter Pays Principle	Applied to encourage and support the rational use of our resources and the potential impacts on our society. The essence is to instil responsibility for the consequence of our actions /activities.
Preventive Approach	Wherever feasible and practical, measures to avoid activities which result in significant adverse impacts on the environment and society shall be sought.
Green Growth	Balancing and including economic growth and development opportunities in a sustainable manner.
Communication	Ensuring ongoing communication between sectors of society as well as with the international community to facilitate the continued growth and evolution of sustainable development.
Global Governance	Working cooperatively (regionally as well as internationally) to develop and apply comprehensive and equitable solutions.
Inclusive Partnerships and Cooperation	Delivering through partnerships and coordination across Ministries, public and private sectors, voluntary / community sectors and with civil society. Interaction must also cut across the local, national and, where appropriate, international dimensions.

4.3 MID Policy

4.3.1 Overarching

Overarching policies have been developed to facilitate the integration of the MID vision across the policy context of Mauritius. These policies aim at providing policy guidance on interdisciplinary issues such as integrated planning, behavioural change, climate change, governance, flexible legal reform, research, capacity building, participation and integration among others.

Overarching policies apply to all five themes with similar importance. Rather than repeat them for each theme they are listed in Table 3.

Table 3: Overarching MID Policies

Policy Code	Policy	Rationale
O1	Improved Integration: To facilitate integrated planning and implementation of legislation.	To ensure that issues do not 'fall between the cracks' of organisational structure, and that existing legislation is used to best effect.
O2	Behavioural Change: To develop a mind-set that creates assets, values and accepts equitable sharing; respects and complies with the law protecting the environment; responsibly pays for use of natural goods and services; and has an inherent sense of ownership and stewardship of the natural environment.	The ultimate realisation of MID is to promote sustainable behaviour in all walks of life.
O3	Collaboration: To promote collaborative mechanisms which bring together the public and private sector, community, NGOs and voluntary sectors to support MID.	By working together with all interested parties, the objectives of MID can be delivered collectively rather than being 'forced upon' a sector. Collaborative working is also likely to reduce the cost as it will reduce the need for special roles or enforcement.
O4	Capacity Building: To develop capacity building measures that can be introduced to ensure that all public sector employees (especially key decision makers) develop the awareness, skills and knowledge as appropriate to their roles and are empowered with sufficient capacity to effectively discharge their general mandated duties or functions.	All stakeholders involved in the realisation of MID should understand what they can do to promote sustainable development.
O5	MID Monitoring: To develop robust reporting mechanisms for MID so that progress can be monitored.	It is important to be able to track progress in delivering MID, so that the programme may be adjusted if necessary.
O6	Land Use: To optimise land use through an effective and efficient land use planning process. (links to Environment policy B1).	Land use is an important central element of MID, which affects all five Es.
O7	MID Engagement: To promote empowerment at local level for implementation and enforcement of Local Agenda 21 and local MID projects.	Ultimately MID will be realised through individual actions across the Republic. Therefore it is important that individuals feel responsible to contribute to MID and Agenda 21.
O8	MID Governance: To promote innovative governance mechanisms as close as possible to MID principles to facilitate practical implementation.	Appropriate governance will ensure that the principles of MID are adhered to and not left out in local decisions.
O9	Facilitate Innovation: To promote innovation in governance structures and practices, for delivery of MID actions by encouraging and supporting the emergence of leaders from all sectors.	There are many specialists in any sector of the economy with the potential to lead implementation of some aspects of MID, and the governance framework will benefit from being flexible enough to incorporate them.

Policy Code	Policy	Rationale
O10	MID Business Engagement: To involve business as catalysts of the economy and influence their employees both at work and at home towards achieving MID objectives.	Businesses, large and small, drive the economy and are in the best position to deliver MID. Business attitudes to MID will be reflected in their employees, with the potential to bring rapid change to individuals' perception of sustainable development.
O11	Flexible Legal Reform: To ensure that national legislation and institutions are adaptable and flexible to respond to changes in the economy, society and environment.	If the institutional framework can be made flexible, it will be easier for it to be updated as the economy changes.
O12	MID Research: To support the development of coordinated research and innovation on MID and key challenges facing Mauritius, by strengthening capacity through knowledge and facilitating technology transfer.	On-going research will be beneficial in specifying the scope of detailed actions, and in determining future MID policies, strategies, and actions.
O13	MID and Climate change: To promote a climate resilient development pathway.	Climate change adds another dimension to MID and needs to be addressed, especially to ensure that the Republic understands likely impacts and adapts to changing weather patterns.
O14	Natural Events: To improve the ability of the Republic to manage and adapt to natural disasters.	Natural disasters such as cyclone, flooding, or drought, are expected to become more common as a result of climate change and it is important for the Republic to be able to recover quickly in order to minimise the impact on its people.
O15	MID and SCP: To promote Sustainable Consumption and Production patterns at all levels to move towards a green economy.	Sustainable Consumption and Production is a core element of sustainable development, and hence a major component of MID.

4.3.2 Energy

The MID policies below address the gaps, challenges, and opportunities, and hence support the realisation of the MID vision for energy.

Table 4: MID Energy Policies

Policy Code	Policy	Rationale
A1	Long Term Energy Strategy: To create the enabling environment for the implementation of the Long Term Energy Strategy.	The long-term plan for energy will help to ensure that demand is met while also setting out a pathway to more sustainable energy production and consumption.
A2	<p>Energy Efficiency Targets: To use and manage energy in an efficient way.</p> <p>Our goals include:</p> <ul style="list-style-type: none"> ▪ Reducing energy consumption in non-residential buildings by 10% by 2020 (taking 2010 figures as a baseline). ▪ Reducing public sector buildings energy consumption on average by 10% by 2020 (in comparison to 2010). ▪ Supporting industry in reducing their associated energy requirements, implementing energy efficiency measures and associated impacts of energy choices on Mauritius. ▪ Improving the efficiency of transport by delivering modal shift (mass transit), influencing behaviours and supporting the adoption of more efficient 	Energy targets will provide a tangible basis for action, give a signal for innovation and tell potential suppliers about the likely opportunities. They will form the basis of more detailed action planning.

Policy Code	Policy	Rationale
	technologies (targets are established under Policy A3).	
A3	Sustainable Public Transport: To develop an efficient affordable, accessible and cleaner transport system based on public transport efficient fuel use and good planning, leading to a reduction in consumption of energy in the transport sector by 35% by 2025, in comparison to 2010.	The public transport system currently relies on old vehicles with high fuel consumption and air emissions. If it were possible to modernise the transport fleet, it could quickly reduce the consumption of diesel. Furthermore, the reintroduction of rail transport could be effective in reducing the number and length of car journeys.
A4	Renewable Energy Targets: To help the Republic meet its energy needs in sustainable, locally compatible ways and to reduce our dependence on fossil fuel sources of energy without putting prohibitive economic burdens on the nation. Our goal is to increase the share of sustainable renewable sources in electricity production of 35% by 2025.	Energy targets will give a tangible basis for action, give a signal for innovation and inform potential suppliers about the likely opportunities. They will form the basis of more detailed action planning. .
A5	Energy Security: To ensure energy security through the application of MID policies.	MID can help to improve energy security, by promoting both energy efficiency and the diversification of energy generation.
A6	Power Sector Reform: To ensure power sector reform and the introduction of independent economic regulation of electricity and establishing the Utilities Regulatory Authority.	Introducing the Utilities Regulatory Authority would be a quick win that would improve both the transparency and efficiency of the utility sector.

4.3.3 Environment

The MID policies below address the gaps, challenges, and opportunities, and hence support the realisation of the MID vision for the environment.

Table 5: MID Environment Policies

Policy Code	Policy	Rationale
B1	Land Use and the Environment: To ensure that sustainable land use planning takes proper account of land use impacts on the environment and efficient use of scarce land resources and public transport system.	Sustainable land use management is an important central element of MID
B2	Capacity to Increase Environmental Knowledge: To ensure there is sufficient and appropriate capacity in all aspects of environmental conservation, protection and management, including human health, and to carry out research and development where required.	There are capacity gaps in some aspects of environmental planning and assessment, for example in the field of oceanography, specialised modelling, and environmental science.
B3	Pollution Control: To prevent damage of the natural environment by pollution, contamination of land, atmospheric emissions (including odour), noise, solid and hazardous waste and abusive use of agrochemicals (including pesticides) and liquid effluents.	Pollution is a major issue that needs to be addressed, for example, pollution of the lagoon has been identified as a significant contributory factor in coral loss. Land pollution may affect soil quality, future land use as well as surface and ground water quality.
B4	Water Resources: To ensure water resources are managed and used in a sustainable manner through effective watershed management, pollution control, sustainable urban drainage, demand management, rainwater harvesting, and reuse of water as appropriate.	Future water security, in the context of climate change, is dependent on improving efficiency of water capture, management and use.
B5	Managing Wastes: To implement a sustainable solid and hazardous waste management system.	The ultimate aim is to reduce the negative impacts of wastes on public health and the environment as well as the cost of solid waste management in Mauritius.

Policy Code	Policy	Rationale
B6	Environmental Health: To improve and protect the health and wellbeing of all Mauritians by providing a high quality, safe environment to live and work in, thereby ensuring that an excellent quality of life is experienced by all.	A highly tangible aspect of development is the quality of life experienced by individuals. MID should aim at focusing on improvement in the quality of life and on those aspects which promote sustainable living in a strong society.
B7	Improving the Environment: To enhance the natural environment and built up areas within the Republic.	MID can be made visible through improvements to the built and natural environment, which in themselves may demonstrate more sustainable living, for example, through traffic management improvements or planting drought tolerant indigenous species.
B8	Food Security: To promote food security for the Republic through sustainable agricultural practices and conservation of agro-biodiversity.	Food security has become an issue of concern and is an important element of sustainable living and development.
B9	Biodiversity Conservation: To conserve the natural assets of the nation by adopting the ecosystem approach.	The conservation of biodiversity in a sustainable manner is crucial for the benefit of current and future generations.

4.3.4 Employment/Economy

The MID policies below address the gaps, challenges, and opportunities, and hence support the realisation of the MID Vision for employment/economy.

Table 6: MID Employment/Economy Policies

Policy Code	Policy	Rationale
C1	Develop a Green Economy: To develop green key economic sectors and create green jobs.	Green economy is the cornerstone of sustainable development and hence of MID.
C2	Quality of Employment: To enhance the quality of employment.	There is a need to create decent, higher earning and safe jobs to improve the quality of life of the citizens of the Republic.
C3	Sustainable Consumption and Production (SCP): To promote SCP patterns for a green economy.	Sustainable Consumption and Production will underpin sustainable living.
C4	Business Agenda: To promote and support the sustainability agenda in business.	As the major users of energy, water, and land, businesses have the potential to drive sustainability.
C5	Human Resources: To transform present and prepare future human resources in order to be aligned with green policies thereby up-skilling the workforce to undertake green jobs	It is vital to develop a workforce for the green economy, so that skills do not have to be imported. A strong green workforce may also offer exportable skills such as environmental consulting.
C6	MID Planning: To establish a national planning framework for coordination of all economic initiatives to promote a green economy (linked to the overarching policy O1).	To ensure that issues do not 'fall between the cracks' of organisational structure and that existing legislation is used to best effect.
C7	Ocean Economy: To exploit the living and non-living resources of the ocean in a sustainable manner. Concurrently, it is important to protect and restore the health, productivity and resilience of oceans and marine ecosystems, and maintain their biodiversity, enable their conservation and sustainable use for present and future generations.	The potential in the ocean economy is enormous for raising the country's GDP, creating high-productivity jobs and improving the standard of living of people.

4.3.5 Education

The MID policies below address the gaps, challenges, and opportunities, and hence support the realisation of the MID vision for education.

Table 7: MID Education Policies

Policy Code	Policy	Rationale
D1	Lifelong Learning: To achieve poverty reduction through improved access to lifelong learning and employment opportunities for all groups.	Lifelong learning will be essential to help people move into green jobs, to disseminate teaching on sustainable living and to provide a sense of personal advancement.
D2	Sustainable Lifestyles: To promote healthy and sustainable lifestyles.	Sustainable lifestyles reduce energy, water, and materials consumption and may help individuals to be more aware of the impact of their actions on the environment.
D3	Natural Disaster and Climate Change Awareness: To promote critical consciousness with regard to disaster risk reduction, climate change adaptation and mitigation.	Awareness of how to plan for natural disasters helps to reduce the number of casualties, the clean-up time and cost, thereby benefitting individuals and the economy.
D4	Access to Post-Secondary Education: To increase access to post-secondary education through multiple pathways.	Improving access to post-secondary education will help individuals realise their potential as well as increase the number of skilled people to move forward on the green economy pathway.

4.3.6 Equity

The MID policies below address the gaps, challenges, and opportunities, and hence support the realisation of the MID Vision for equity.

Table 8: MID Equity Policies

Policy Code	Policy	Rationale
E1	Support Vulnerable Groups: To ensure effective support is provided to vulnerable groups.	The vulnerable groups should not inadvertently be excluded from receiving support. It is important to identify the most vulnerable groups and to devise necessary support mechanisms appropriate to their needs.
E2	Excluded Groups: Through sustainable development and green economy, to increase resources to alleviate poverty, reduce exclusion and promote social entrepreneurship.	
E3	Institutional and Legislative Framework: To foster a conducive institutional and legislative framework to promote equal opportunities, anti-discrimination, gender equality, good governance, women empowerment, maternal health and anti-corruption.	The institutional framework can provide strong signals for a change in behaviour and help in the promotion of equity.
E4	Support Disadvantaged Groups: To continue to provide adequate support for and care of children, youth, women, families, elderly, socially disadvantaged groups, and disabled people.	It is important to maintain and safeguard current progress in fostering equity.
E5	Transparency Index: To enable a sustained improvement in the Transparency Index of Mauritius, especially with regard to promoting input from all sections of society.	The Transparency Index is a useful international benchmark. It shows how the institutional framework functions in practice.
E6	Individual Rights: To ensure that in all sectors of activity, the rights of individuals and workers are appropriately protected.	It is important to protect rights of individuals generally in society and of workers in both the traditional economy and in emerging aspects of the ocean and green economy.

Policy Code	Policy	Rationale
E7	Equal Access to Infrastructure: To provide equal access to high quality health care, leisure, sports, law and order (safety, security and culture).	economy. Social equity is visible through equal access to social infrastructure. It may be necessary to seek out the most vulnerable groups in order to develop solutions tailored to their needs.
E8	Arts and Culture: To ensure access to artistic and cultural infrastructure and activities.	Artistic and cultural activities are important to sustainable multi-cultural living. They also have the potential to enhance understanding of national heritage and the importance of sustainability.
E9	Healthy Living: To promote healthy living at the individual, family, community and national level.	Healthy lifestyles may improve the general health of the population, as well as help individuals be more aware of the impact of their actions on the environment.

4.4 Implementation Instruments

A range of implementation instruments will support delivery of the policies. The MID Strategy will form the main instrument for implementation of the policies, supported by the Action Plan. Some examples of implementation instruments for MID are given below:

4.4.1 Thematic Strategies, Programmes, and Action Plans

Thematic instruments include strategic policy documents intended to provide a basis for action within a specific policy area by breaking each policy statement into one or more practicable strategies for the next ten years.

MID will be implemented through the MID Action Plan, the ESTP framework, the PBB as well as various sectoral strategies and action plans. In essence, the ESTP will provide a uniform and integrated approach to strategic planning and will operationalise the approved plans across all Ministries and Departments through the PBB.

4.4.2 Regulatory Instruments and Standards

Regulatory instruments and standards are targeted to address specific elements of one or more policies. They may include restrictions on the import, sale, use of products, limits on emissions and employment standards such as a minimum wage or building codes.

4.4.3 Economic Instruments

Economic instruments aim at creating an incentive regime to support implementation of one or more policies. They may include fees or levies, charges, taxes and subsidies, feed-in tariffs, deposit-refund systems and economic regulation of utilities. Economic instruments can be used to serve different aims, such as to internalise external costs or to promote specific technologies.

4.4.4 Information-based Instruments

Information-based instruments aim at helping consumers to understand the products or services they are buying. They may include consumer guidelines, consumer advocacy and education, eco-labelling, websites and portals. Other options applicable to MID include education on sustainable development and training seminars for authorities to raise awareness about MID and sustainable development. The impact of information-based instruments on businesses is often less direct than other measures and more of a longterm basis in their delivery of effects.

4.4.5 Voluntary Agreements

Voluntary agreements are often developed by partnership between Government and businesses and aim to achieve outcomes through organisations acting in good faith. They may include stakeholder engagement in the broader sense. Examples include voluntary reporting initiatives, voluntary targets setting for product improvements and emissions reductions, voluntary certification schemes and voluntary auditing of large energy users' efficiency opportunities. Voluntary agreements may also include annual reporting, for example on energy consumption or sustainability indicators.

4.4.6 Regional and International Cooperation

Environmental, social and economic problems have trans-boundary impacts and international cooperation can assist in addressing such issues that require the concerted efforts of different member states. Any policy on sustainable development is a policy on the basis of effective forms of international cooperation which take into account both ecological relationships on regional and global scales, and the interdependence of the world economy.

In this context, regional and international cooperation will play a crucial role in guiding Mauritius towards achieving sustainable development. Mauritius has always been in the forefront with regard to international commitments. Accordingly, the Republic of Mauritius is fully committed to implementing Agenda 21, the blueprint on sustainable development, and subsequent multilateral agreements and associated strategies and action plans on sustainable development, including climate change and other major global challenges.

Mauritius is also very active at the regional level through the Southern African Development Community, the Common Market for Eastern and Southern Africa, the Indian Ocean Rim-Association for Regional Cooperation and the Indian Ocean Commission.

Mauritius will not only maintain regional and international cooperation, but also strive to reinforce such cooperation and meet the necessary obligations of the different agreements. Mauritius will equally strengthen ties with Development Partners such as the Agence Française de Développement, United Nations Agencies, European Union, World Bank, Commonwealth Secretariat, International Monetary Fund, African Union, Japanese International Cooperation Agency as well as other partners.

5. Part Two – MID Strategy



5.1 Method Used to Develop the Proposed Strategies

The following steps were taken in the formulation of the proposed strategies:

- i. Review of the proposed policies and list the potential and logical implementation steps.
- ii. Taking account of the feedback on the draft MID policy, leading to some proposed policies being moved to the MID Strategy.
- iii. Collating the 600 or so recommendations of the MID working groups.
 - For each recommendation, making an initial classification of policy, strategy or action.
 - Assigning each potential strategy to its most appropriate 'parent' policy, and likewise assigning each potential action to its most appropriate 'parent' strategy.
- iv. Review of the list of potential strategies and compilation of short list of summary strategies. The approach aimed at adopting a consistent wording and level of detail, without losing the overall meaning.
- v. Identification of strategies from the list that would be better placed as actions belonging to the summary strategies.
- vi. Internal review with critical analysis of the resulting short-list of strategies to ensure that:
 - Coverage is at a broadly comparable level of detail for each of the five Es;
 - Overlaps are minimised; and
 - The most important aspects of the MID vision are addressed, with minimal gaps.

By using the above method, best use was made of the wide range of skills and inputs available. The proposed strategies draw heavily on the:

- Extensive work of the MID consultation and working groups;
- Comments received at the MID policy workshops; and
- International experience of the project team.

The resulting 'hierarchical' approach linking the vision, policies, strategies, and actions is illustrated in Figure 5.1. In practice the relationship is more complex because some policies will benefit more than one 'E', some strategies will benefit more than one policy, and some actions will benefit more than one strategy.

Whilst few of the working group recommendations have been incorporated verbatim into the MID strategy, each has been reviewed and has influenced the strategies proposed.

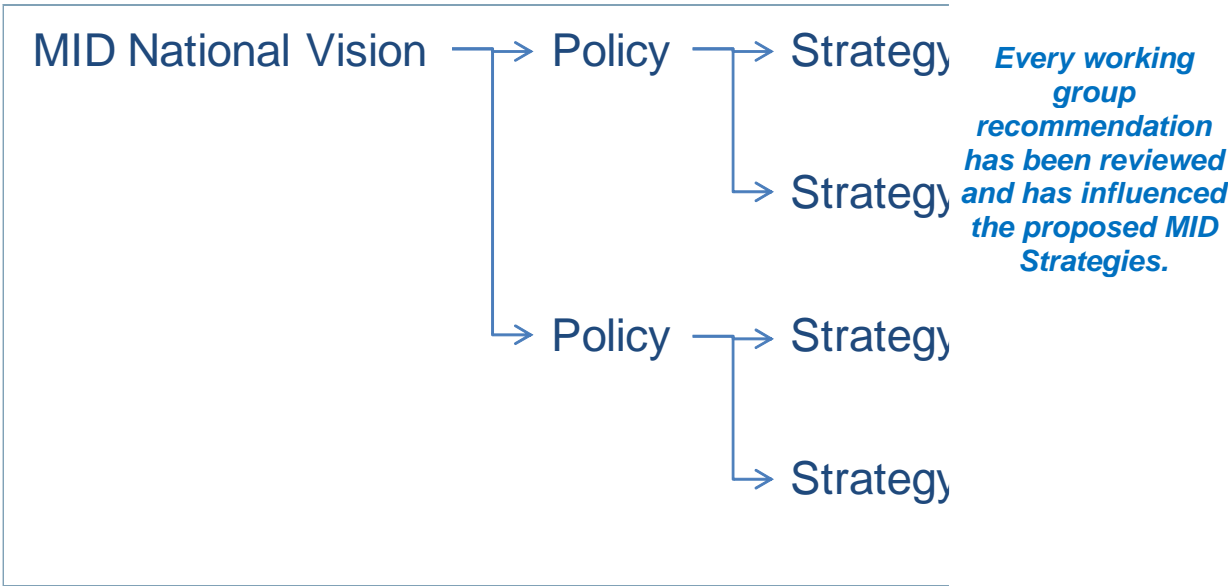


Figure 5.1: Hierarchical Approach to Policies, Strategies and Actions

5.2 MID Strategies

5.2.1 Overarching

The policies and strategies proposed below provide the national policy framework to support the realisation of the MID vision.

Table 9: Overarching MID Policies and Strategies

Policy Code	Policy	Strategy
O1	Improved Integration: To facilitate integrated planning and implementation of legislation.	To develop an integrated planning approach with national and regional level development strategies to make best use of key regional resources to accommodate growth.
		To review the national guidelines on Environmental Impact Assessment in order to incorporate current best practice and the MID principles.
		To develop one common law - 'The Biodiversity Act' to centralise and streamline all legislations relating to biodiversity.
		To review and increase the efficiency of the planning process, enforcement measures and fiscal incentives to develop a holistic/integrated mechanism.
O2	Behavioural Change: To develop a mindset that creates assets, values and accepts equitable sharing; respects and complies with the law protecting the environment; responsibly pays for use of natural goods and services; and has an endemic sense of ownership and stewardship of the natural environment (link to D5).	To promote MID literacy at all levels.
O3	Collaboration: To promote collaborative mechanisms which bring together the public and private sector, community, NGOs and voluntary sectors to support MID.	To explore opportunities to develop Public Private Partnership (PPP) initiatives.
		Government to continue to make relevant policies, plans and strategies available for public consultation.
O4	Capacity Building: To develop capacity building measures that can be introduced to ensure that all public sector employees (including key decision makers) develop the awareness, skills and knowledge as appropriate to their roles and are empowered with sufficient capacity to effectively discharge their general mandated duties or functions.	To develop best practice development programmes for civil service personnel tailored to roles and responsibilities, including, at a minimum, a basic understanding of sustainable development.
		To deliver awareness-raising programmes for key decision-makers.
		To ensure that all training programmes developed for all target groups include the principles of MID alongside statutory obligations.
O5	MID Monitoring: To develop robust reporting mechanisms for MID so that progress can be monitored.	To develop and communicate a comprehensive MID Realisation Index to monitor progress towards the MID vision.
		To deliver report on an annual basis.
O6	Land Use: To optimise land use through an effective and efficient land use planning process.	To complete periodic and thorough review of the implementation of the detailed and modern National Development Strategy.
		To ensure that land for development is not allocated on high value agricultural land and is appropriate for use.
O7	MID Engagement: To promote empowerment at local level for implementation and enforcement of Local Agenda 21 and local MID projects.	To encourage action at all levels of society and provide a reward mechanism for successful MID entrepreneurship.

Policy Code	Policy	Strategy
O8	MID Governance: To promote innovative governance mechanisms as close as possible to MID issues to facilitate practical implementation.	To stress the positive measures (incentives) more than the negative (punitive, taxation, etc). To lead by example through publicising inter-ministerial contributions towards MID.
O9	Facilitate Innovation: To promote innovation in governance, structures and practices, for delivery of MID actions by encouraging and supporting the emergence of leaders from all sectors.	To identify and promote examples of transparency and good governance.
O10	MID Business Engagement: To involve businesses as catalysts of the economy and influence their employees both at work and at home towards achieving MID objectives.	To consider financial incentives for green business innovation (i.e. tax breaks) or work-life-balance best practice.
O11	Flexible Legal Reform: To ensure that national legislation and institutions are adaptable and flexible to respond to changes in the economy, society and environment.	To create a multi-stakeholder body to include Civil Society or undertake a review of the National Economic and Social Council (NESC). To undertake integrated assessment of policies to ensure they are commensurable to and take on board the emerging economic, social and environmental issues.
O12	MID Research: To support the development of coordinated research and innovation on MID and key challenges facing Mauritius, by strengthening capability knowledge and facilitating technology transfer.	To establish a research coordination panel under the aegis of the Mauritius Research Council to identify potential MID research areas as well as create synergies in on-going and upcoming research.
O13	MID and Climate Change: To promote a climate resilient development pathway.	To ensure climate change issues are considered in land use planning and strategic environmental impact assessments as well as encourage climate change adaptation strategies within the Republic. To build capacity in the use of integrated modelling tool to analyse the inter-linkages between climate change and key resources such as land-use, energy and water to promote integrated approach for detailed resource assessment.
O14	Natural Events: To improve the ability of the Republic to manage and adapt to natural disasters.	To develop disaster management plans across the Republic and build capacity in disaster management.
O15	MID and SCP: To promote Sustainable Consumption and Production patterns at all levels to move towards a green economy.	To implement the actions previously identified in the SCP Programme 2007.

5.2.2 Five Es

5.2.2.1 Energy

The policies and strategies proposed below provide the national policy framework to support the realisation of the vision for energy.

Table 10: MID Energy Policies and Strategies

Policy Code	Policy	Strategy
A1	Long Term Energy Strategy: To create the enabling environment for the implementation of the Long Term Energy Strategy.	To develop a short scenario based on energy plan for the next 30 years to maximise the security of future energy supplies, building on the Long Term National Energy Strategy.
		To understand the developmental needs of the grid system to enable uptake of new technologies in the future.
		To ensure that transport and energy planning are core aspects of integrated planning within the Republic.
A2	Energy Efficiency Targets: To use and manage energy in an efficient way.	To support the activities and effective development of the Energy Efficiency Management Office with active participation of the Central Electricity Board (CEB) and Ministry of Energy and Public Utilities (MEPU).
	Our goals include:	
	1. Reducing energy consumption in non-residential buildings by 10% by 2020 (in comparison to 2010).	To explore demand-side management to support the control of peak energy loads.
	2. Reducing public sector buildings energy consumption on average by 10% by 2020 (in comparison to 2010).	To revise Government Procurement Strategy to include energy efficiency as a key procurement principle.
A3	Sustainable Public Transport: To develop an efficient, affordable, accessible and cleaner transport system based on public transport efficient fuel use and good planning, leading to a reduction in consumption of energy in the transport sector by 35% by 2025, in comparison to 2010.	To support the implementation of the Mass Transit System.
		To support pedestrianisation and the use of low-energy modes of transport.
A4	Renewable Energy Targets: To help the Republic meet its energy needs in sustainable, locally compatible ways and to reduce our dependence on fossil fuel sources of energy without putting prohibitive economic burdens on the nation. Our goal is to increase the share of sustainable renewable sources in electricity production of 35% by 2025.	To develop and maintain a pro-active energy supply plan in order to provide energy generation to meet future demand.
		To explore opportunities for providing additional economic incentives to promote renewable energy.
A5	Energy Security: To ensure energy security through the application of MID policies.	To reduce reliance on external (international) fuel supplies.
A6	Power Sector Reform: To ensure power sector reform and the introduction of independent economic regulation of electricity.	To implement the actions in the Energy Regulator Terms of Reference.

5.2.2.2 Environment

The policies and strategies proposed below provide the national policy framework to support the realisation of the vision for environment.

Table 11: MID Environment Policies and Strategies

Policy Code	Policy	Strategy
B1	Land Use and the Environment: To ensure that sustainable land use planning takes proper account of land use impacts on the environment, efficient use of scarce land resources and public transport system.	To implement an integrated approach to sustainable land use management by balancing the needs of urban and rural development with the natural and social environment. To ensure sensitive and vulnerable ecosystems (including lagoons, national parks, offshore islets, nature reserves, wetlands and reef systems) are not threatened by development.
B2	Capacity to Increase Environmental Knowledge: To ensure there is sufficient and appropriate capacity in all aspects of environmental conservation, protection and management, including human health, and to carry out research and development where required.	To enhance government capacity to manage and publicise environmental data. To continue to develop specialist knowledge in all aspects of environmental management, conservation and enhancement.
B3	Pollution Control: To prevent damage to the natural environment by pollution, contamination of the land, atmospheric emissions (including odour), noise, solid and hazardous waste and abusive use of agrochemicals (including pesticides) and liquid effluents.	To review and enforce existing environmental legislation and regulations.
B4	Water Resources: To ensure water resources are managed and used in a sustainable manner through effective watershed management, pollution control, sustainable urban drainage, demand management, rainwater harvesting, and reuse of water as appropriate.	To formulate a consolidated Water Act in line with the Water Sector Reforms in order to simplify existing legislation and address issues of protecting and conserving freshwater resources.
B5	Managing Wastes: To implement a sustainable solid and hazardous waste management system.	To implement best practice in biodegradable waste processing. To implement the National Solid Waste Management Strategy To develop appropriate incentives to reduce waste at source. To develop and implement a resource recovery (recycling strategy for Mauritius) including setting targets for different waste streams. To develop appropriate disposal infrastructure for residual wastes in the long term.
B6	Environmental Health: To ensure a high quality of health services and well-being of all Mauritians by providing a high quality safe environment, to live and work in.	To strengthen enforcement of existing legislations on land use planning and occupational health and safety. To improve personal safety and quality of life in risky and needy areas.
B7	Improving the Environment: To enhance the natural environment and built up areas within the Republic.	To promote the clean and green concept and minimise land use conflicts. To promote sustainable buildings.
B8	Food Security: To promote food security for the Republic through sustainable agricultural practices and conservation of agro-biodiversity.	To review the Food Security Plan (2008 – 2011). To ensure that agricultural land is not compromised by promoting effective land use planning and pollution control. To reduce reliance on food imports and increase self-sufficiency in major food crops without harming the environment.
B9	Biodiversity Conservation: To conserve the natural	To monitor and manage the use of terrestrial and marine

Policy Code	Policy	Strategy
	assets of the nation by adopting the ecosystem approach.	biodiversity to ensure that they continue to provide ecosystem services.

5.2.2.3 Employment/Economy

The policies and strategies below provide the national policy framework to support the realisation of the vision for employment/economy.

Table 12: MID Employment/Economy Policies and Strategies

Policy Code	Policy	Strategy
C1	Develop a Green Economy: To develop green key economic sectors and create green jobs.	Building on the ILO 2012 document “Mauritius Building a Green Economy”, to develop and implement a realistic plan for growing the green economy in order to ensure that economic growth contributes to the realisation of the MID vision.
C2	Quality of Employment: To enhance the quality of employment.	To stimulate the adoption of modern working methods to improve productivity and develop an e-economy. To develop high-quality and productive workplaces within an effective regulatory environment. To develop workforce skills for the green economy.
C3	Sustainable Consumption and Production: To promote Sustainable Consumption and Production patterns for a green economy.	To ensure that businesses are aware of and adopt good environmental practices. To encourage sustainable public and private procurement.
C4	Business Agenda: To promote and support the sustainability agenda in business.	To develop and implement the concept of green jobs in all sectors. To enhance the corporate environment and social responsibility and accountability through encouraging the use of Sustainability Index based on Global Reporting Index (GRI).
C5	Human Resources: To transform present and prepare future human resources in order to be aligned with green policies thereby up-skilling workforce to be able to undertake green jobs.	To develop a strong programme on vocational training to support employees to undertake green jobs.
C6	MID Planning: To establish a national planning framework for coordination of all economic initiatives to promote a green economy (linked to the overarching policy O1).	To provide the necessary institutional structure to implement the MID initiative. To develop and implement national indicators on green economy, green jobs and sustainability to monitor and report progress on the state of Mauritius’ natural assets.
C7	Ocean Economy: To exploit the living and non-living resources of the ocean in a sustainable manner. Concurrently, it is important to protect and restore the health, productivity and resilience of oceans and marine ecosystems, and maintain their biodiversity, enable their conservation and sustainable use for present and future generations	To create a comprehensive and robust regulatory and legal framework for the ocean economy. To ensure the sustainable use and management of ocean resources. To contribute to energy security through marine energy. To support the development of scientific knowledge, research and innovation on ocean economy by strengthening education, capacity building and technology transfer.

5.2.2.4 Education

The policies and strategies proposed below provide the national policy framework to support the realisation of the vision for education.

Table 13: MID Education Policies and Strategies

Policy Code	Policy	Strategy
D1	Lifelong Learning: To achieve poverty reduction through improved access to lifelong learning and employment opportunities for all groups.	To improve access to education for students of all ages and groups in and out of school. To develop and mainstream programs to promote environmental literacy at all levels. To encourage the development of family literacy programs.
D2	Sustainable Lifestyles: To promote healthy and sustainable lifestyles.	To use education and training/agricultural extension advisors to promote and develop green agricultural practice. To use education and training to raise awareness of and encourage healthy life choices for all age groups. To develop an incentive regime to reward sustainable agricultural practice.
D3	Natural Disaster and Climate Change Awareness: To promote critical consciousness with regard to disaster risk reduction, climate change adaptation and mitigation.	To develop and implement an action plan on awareness of disaster risk reduction.
D4	Access to Post-Secondary Education: To increase access to post-secondary education through multiple pathways.	To promote consistency between formal and non-formal education pathways in mainstream and vocational education.

5.2.2.5 Equity

The policies and strategies below provide the national policy framework to support realisation of the vision for equity.

Table 14: MID Equity Policies and Strategies

Policy Code	Policy	Proposed Strategy
E1	Support Vulnerable Groups: To ensure effective support is provided to vulnerable groups.	To promote equity through dedicated programmes with respect to disconnection, low-income groups and women participation. To ensure enforcement of legislations related to equity. To improve equity of access to public infrastructure.
E2	Excluded Groups: Through sustainable development and green economy, to increase resources to alleviate poverty, reduce exclusion and promote social entrepreneurship.	To ensure there is suitable re-training available, for people moving from regular work into the green economy. To review the measure used to define poverty and ensure collection of the appropriate data. To promote social entrepreneurship at all levels of society.
E3	Institutional and Legislative Framework: To foster a conducive institutional and legislative framework to	To improve coordinated access to social services, using a one-stop-shop approach.

Policy Code	Policy	Proposed Strategy
	promote equal opportunities, anti-discrimination, gender equality, good governance, women empowerment, maternal health and anti-corruption.	To ensure clear regulation and guidelines for the protection of social work associated professions. To ensure multi-stakeholder representation including gender-based representation in all national processes and consultations.
E4	Support Advantaged Groups: To provide adequate support for and care of children, youth, women, families, elderly, socially disadvantaged groups and disabled people.	To develop capacity for child welfare and protection services.
E5	Transparency Index: To enable a sustained improvement in the Transparency Index ranking of Mauritius, especially with regard to promoting input from all sections of society.	To ensure equity of access to, and inclusion in, government processes.
E6	Individual Rights: To ensure that in all sectors of activity, the rights of individuals and workers are appropriately protected.	To enforce the Equal Opportunities Act and improve the transparency of employment conditions.
E7	Equal Access to Infrastructure: To provide equal access to high quality health care, leisure, sports, law and order (safety, security and culture).	To continue to improve the inclusivity of welfare facilities in the Republic of Mauritius by identifying vulnerable groups and opportunities for improvement.
E8	Arts and Culture: To ensure access to artistic and cultural infrastructure and activities.	To develop a white paper on arts and culture.
E9	Healthy Living: To promote healthy living at the individual, family, community and national level.	To promote inter and intra-generational activities, 'comité des sages' and 'associations troisième âge'

6. Part Three – Action Plan

The MID Policy and Strategy will be delivered through the Action Plan which consists of four MID priority programmes: Energy, Cleaner, Greener and Pollution free Mauritius, Green Economy and Ocean Economy. In addition to the four major programmes, a range of supporting actions/projects has been proposed. Section 6.7 summarises the MID policies, strategies and actions/projects.

The MID Action Plan consists of about 134 actions across the 5 Es, which will be implemented in the short, medium and long term. The actions draw from the working group consultations, the gaps and challenges analysis and the recommendations of consultants.

The projects in the Action Plan are mutually supportive. Each project aims to build on existing activities by introducing new ideas to advance further on the path of sustainable development.

6.1 Priority MID Programmes

For each priority programme, a concept plan has been developed, comprising a set of actions or projects that are required to attain an overall goal. These projects aim to bring together benefits to all of the five Es more effectively. The Priority MID Programmes are considered to be the highest priority for action.

The purpose of the priority MID programme is to identify feasible and tangible actions to implement Maurice Ile Durable. The projects have been selected, not only for their comprehensiveness in contribution across the five Es, but also for their ability to deliver a combination of both quick and mediumterm wins.

Terms of Reference (TOR) have been drafted to detail the implementation of those projects that will require specialised knowledge.

Indicative costs of implementation of the MID Priority Programmes are presented in Table 15. These are only estimates of costs. Some activities cannot be costed at this stage and detailed programme costing will only be practical during project preparation and implementation.

Table 15: Indicative Cost of Priority MID Programmes

Programmes	Cost Estimate
Energy	USD 170 Million (Rs 5.1 Billion)
Cleaner, Greener and Pollution Free Mauritius	USD 32.9 Million (Rs 1.0 Billion)
Green Economy	USD 5.2 Million (Rs 0.16 Billion)

Note: The table excludes costs for implementation of the MID Priority Programme on Ocean Economy. Costing of projects on Ocean Economy will be developed at a later stage.

6.2 Concept Plans

Concept plans comprising a number of projects have been developed for the following priority programmes:

- Energy
- Cleaner, greener and pollution free Mauritius
- Ocean economy
- Green economy

The projects under each concept plan are outlined below:

6.3 Concept Plan - Energy

6.3.1 Overview of Energy

6.3.1.1 The Current Situation

Energy is one of the fundamental inputs into our modern daily lives. It fuels transport and agricultural machinery, operates the industry that provides export revenue and is at the core of the service sector that employs the vast majority of the Mauritian workforce. The global competitiveness of Mauritius is tremendously influenced by the efficiency and cost of energy used to produce its goods and services.

Universally, energy outcomes are driven by three overarching objectives: security of supply, affordability/efficiency and minimal impacts on our natural environment. Achieving all three of these objectives is challenging and requires a balance that can sometimes result in trade-offs against other objectives.

- With over 80% of total primary energy imported, security of supply is essential for our small, isolated and energy-resource poor nation. There is no local production of hydrocarbons or coal to produce electricity or fuel transport and machinery. This scarcity of energy renders Mauritius vulnerable to a high level of import-dependence which presents medium and long-term risks to national welfare and sustainability. Improving security of supply will require supply and demand-side intervention. For supply, up-front investment in our energy production and supply may be costly and have implications for end-users. This could include new forms of base-load generation to provide firm power and/or renewable production that does not rely on any imported fuels. On the demand side, pro-active intervention must take place through expanding discipline of energy efficiency and demand side management.
- Affordability will be improved by operating a transparent, equitable and commercially efficient energy sector that has an optimised investment and operational framework to be guided by an independent and consumer-focused Utility Regulatory Authority. This will be centred on developing a responsive and financially sustainable electricity utility and the incremental introduction of new renewable developments. The driving objective will be to provide value for household, commercial and industrial consumers, while acknowledging and meeting the objectives of a secure and quality supply of energy and environmental protection.
- Meeting environmental objectives through the deployment of renewable energy can improve security of supply through the reduction of import dependence. Renewable energy, in the context of the predominantly oil-based stock of electricity generators, can have a positive impact on the environment. Furthermore, in the context of ever-increasing and volatile nature of oil-based fuel sources, conventional forms of renewable energy are no-longer as economically prohibitive as they were before.

The future social and economic development of Mauritius is also dependent on secure, affordable and environmentally conscious energy. The international competitiveness of Mauritius relies on an efficient economy that is fuelled by reliable and competitive inputs to the goods and services produced. This is at a time when the global macroeconomic environment is volatile and uncertain and each country must make concerted efforts to be exceptionally resourceful and responsive. The MID approach to energy and the development of the concept plan on energy is founded on three key steps:

- i. A root-and-branch analysis of the energy profile of Mauritius – assessing the current consumption and production of Mauritius and the viability of that trend in the short, medium and long term; reviewing the past and present activities undertaken by public, private and NGO organisations; review of the current energy policy, which is Long Term Energy Strategy and the extent to which the strategy is reflected in present and future government programmes.
- ii. Including the general public, industry, academia and NGOs in a consultative national process to solicit and secure their views, ideas and potential solutions to the future energy plan of Mauritius.
- iii. Undertaking a gap analysis of what:
 - a. Actions or policies are outstanding from the Long Term Energy Strategy;
 - b. Consultative actions or initiatives are appropriate for inclusion in MID; and
 - c. Solutions are best incorporated in MID, based on international best practices in energy sector policy and regulation, while ensuring that these solutions are tailored for the specific context of the Republic of Mauritius.

6.3.1.2 Goals

The goals of developing the energy sector in the spirit of MID are:

- To meet the objectives of improved security of supply, affordability and respect for the natural environment, the so called energy policy ‘tri-lemma’.
- To decouple the economy of Mauritius from world fuel markets, reduce energy intensity and increase the proportion of renewable energy entering the grid.

6.3.1.3 Targets

- Reducing energy consumption in non-residential buildings by 10% by 2020.
- Reducing energy consumption in public sector buildings by 10% by 2020.
- Reducing energy consumption in the transport sector by 35% by 2025.
- Increasing the share of sustainable renewable sources in electricity production up to 35% by 2025.

6.3.1.4 Challenges

Key challenges to achieving the above goals and targets will include:

- Doing so in an economically sensible way, whereby chosen solutions do not result in long-term financial burdens on the state and energy consumers.
- Restructuring the electricity sector to reflect a transparent and modern institutional architecture that reflects the World Bank’s classification of Mauritius as an upper middle-income economy.
- Maintaining the momentum of the complex and consequential energy initiatives during a time of sustained global economic uncertainty, particularly during 2013-2014 when several enactments and institutions will be operationalized or consolidated.
- Urgent action on energy use in transport, which is placing great pressure on petroleum imports and constraining national productivity, all of which have implications for international competitiveness.

6.3.2 Scope of Action

6.3.2.1 Building Control Act

The Building Control Act proclaimed in 2013, will implement desired regulations and standards across the Republic by law. The legislation promotes the design, construction and maintenance of buildings guaranteeing people's safety, society's well-being and the protection of the environment.

Sustainability will be reflected by a number of key requirements including:

- a) Water tightness of buildings and water management;
- b) Waste management as part of the construction process;
- c) Energy savings and optimum energy consumption for the proper operation of buildings;
- d) Reduction of the heat island effect in urban areas.

The spirit of the legislation will be championed by the Building Control Advisory Council (BCAC) with permanent members representing the interests of energy efficiency, energy management and environmental protection. BCAC shall take actions including advising the Minister on building regulatory issues and it will be responsible for the development of policies which promote safe, efficient and sustainable construction of buildings.

6.3.2.2 Energy Efficiency

The Energy Efficiency Act provides for the EEMO to champion the cause of energy efficiency, charged, as it will be, with the overarching objectives to promote efficient energy use and national awareness. This will be a major proponent of MID objectives and a key contributor to the efforts of achieving the goals and targets associated with the energy sector.

The key areas of action to be driven by EEMO include, but are not limited to:

- a) develop and implement strategies, programmes and action plans, including pilot projects, for the efficient use of energy;
- b) establish procedures to monitor energy efficiency and consumption;
- c) issue guidelines for energy efficiency and conservation in all sectors of the economy;
- d) establish energy consumption standards;
- e) collect and maintain data on energy efficiency and consumption;
- f) formulate and recommend innovative financing schemes for energy efficiency projects;
- g) devise and assist in the preparation of educational courses and school curricula on the efficient use of energy;
- h) establish links with regional and international institutions and participate in programmes pertaining to the efficient use of energy; and
- i) devise labeling requirements and specifications regarding any equipment, machine or appliance which is imported, manufactured or sold in Mauritius.

6.3.2.3 Setting up of the Utilities Regulatory Authority

The Utilities Regulatory Authority (URA) is a core element of the institutional architecture of developed countries. The time has now come for Mauritius to set up this key institution which will take place over 2013-2014. The URA will facilitate the development of the pillars supporting MID – energy, environment, economy, education and equity. The basis of setting up the URA is founded on the existing Long Term Energy Strategy and enacted legislation establishing its powers and responsibilities. It can be done in the existing electricity sector framework, whereby a single buyer will prevail for the foreseeable future in view of increased participation by the private sector in a more competitive process.

Its capacities will need to be carefully developed and incrementally built up over time to ensure that the URA can pragmatically consolidate the delivery of its powers and responsibilities. That is in order to promote an efficient, transparent and investor-friendly electricity sector, the delivery of its mandate must be undertaken in a new competitive environment.

6.3.2.4 Renewable Energy Procurement Framework/ Development Strategy

The Renewable Energy Procurement Framework (REPF) will enhance the capacity of the public sector to procure renewable sources of energy generation on a competitive basis, taking into account commercially available and least-cost solutions.

The REPF is the optimum approach for the current and near-term context of the energy sector in Mauritius. It will allow for the procurement of whatever form of renewable energy technology in order to achieve policy objectives and be in line with the Renewable Energy Master Plan. The new framework will give flexibility over the timing, capacity and technology to be sourced, but at the same time and most fundamentally linked to MID, provide the basis for an internationally competitive process to attract reputable service providers for the benefit of the present and future consumers of Mauritius.

The framework is designed to facilitate the existing single buyer model and can operate with or without the presence of an energy regulator. The REPF will contribute to other existing national policies and MID objectives such as:

- Reducing our dependence on imported fossil fuel;
- Diversifying its energy mix in electricity;
- Meeting the Republic's long term energy needs sustainably; and
- Facilitating the share of sustainable renewable sources in electricity production up to 35% by 2025.

6.3.2.5 Renewable Energy Master Plan(2015-2025)

Action is ongoing for the preparation of the Renewable Energy Master Plan (REMP). It will provide a road map for the development of the Republic's renewable energy in the medium to long term. For the implementation of the REMP, concurrently a smart grid development strategy will have to be put in place to optimize the use of commercially developed and economically affordable sources of renewable technologies for the period of 2015-2025.

6.3.2.6 Renewable Energy Deployment Plan for Mauritius (2013 -2015)

With current technology, renewables are currently more expensive than the average generation cost of the CEB. Notwithstanding the aforesaid and in line with Maurice Ile Durable, Government has agreed to financially support the following projects:

1. 29.4 MW Plaine Sophie Wind Farm – PPP Project – Rs 75m/year subsidy – Energy Supply Purchase Agreement (ESPA) signed - Expected commissioning: 2014.
2. 9 MW Wind farm at Plaine des Roches – PPP Project – Rs 32m/year subsidy – Negotiations on-going - Expected commissioning: 2015.
3. Several solar PV farms – PPP Projects - Rs 49m/year subsidy (negotiations with preferred bidders ongoing) - Expected commissioning: 2014-2015.
4. 2 mini-hydro Plants by the CEB (La Nicoliere and Midlands) – Part financial support from the MID Fund.
5. Small Scale Decentralized Generation (SSDG), 3MW - Rs 48m annually being limited to 3MW SSDG project on LV 240/415V grid (CEB) – PPP Project – Rs 48m/year subsidy – Installation in progress.
6. Landfill Gas to energy (3MW) – PPP Project - Rs 20m/year subsidy over five years– Operational.

Note: The gross investment of Rs 5 billion for projects on renewable energy by the Private Sector will be partly offset by a subsidy of about Rs 235 million per year by Government for the next 20 years.

6.3.2.7 Expected Share of Renewable Energy in 2015

With the coming into operation of the listed renewable energy projects, the total energy generation from renewable energy sources will rise to some 570 GWh. This would represent about 20% of the power generation in 2015 (forecasted generation 2858 GWh).

- Bagasse – 350 GWh
- Hydro – 90 GWh
- Landfill – 18 GWh
- Curepipe Point Wind Farm – 55 GWh
- Plaines des Roches Wind Farm – 16 GWh
- Solar PV farms– 40 GWh

In addition to the above schemes the following projects are under way:

- Preparation of a Grid Code, Feed in Tariffs and Model ESPA for renewable energy of capacity ranging from 50 kW to 4 MW;
- Medium Scale Decentralized Generation (MSDG): Now starting) on 22kV grid (CEB);

6.3.3 Summary of Actions

Table 16: Summary of Actions for Energy

	Action	Short/Medium/Long term	Cost Estimate	Monitoring and Evaluation	Implementing Agencies
1	Consolidation of the Energy Efficiency Management Office	On-going	Rs 3m / year	Operationalisation of the Office	Ministry of Energy and Public Utilities
2	Setting up of the Utilities Regulatory Authority	On-going	Rs 10-15m	Establishing core regulatory capacities and functions as prioritised by Prime Minister and Government	Ministry of Energy and Public Utilities
3	Renewable Energy Plan	Short	Rs 4.5 - 6.5m	Implementation of the Renewable Energy Plan	Ministry of Energy and Public Utilities
4	Renewable Energy Deployment Plan	Short	Rs 5 Billion*	Publication	Ministry of Energy and Public Utilities
a.	29.4 MW Plaine Sophie Wind Farm (PPP Project)	Short	Rs 75m/year subsidy	Operational	Ministry of Energy and Public Utilities
b.	9 MW Wind Farm at Plaine des Roches (PPP Project)	Short	Rs 32m/year subsidy	Operational	Ministry of Energy and Public Utilities

	Action	Short/Medium/ Long term	Cost Estimate	Monitoring and Evaluation	Implementing Agencies
c.	Several solar PV farms (PPP Projects)	Short	Rs 49m/year subsidy	Operational	Ministry of Energy and Public Utilities
d.	2 mini-hydro Plants by CEB (La Nicoliere and Midlands)	Commissioning stage	Midlands benefitted from a financial support of Rs 30m from MID Fund	Operational	Ministry of Energy and Public Utilities
e.	Small Scale Decentralized Generation (SSDG), 3MW - Rs 48m annually being limited to 3MW SSDG project on LV 240/415V grid (CEB) - PPP Project	Short	Rs 48m/year subsidy	Operational	Ministry of Energy and Public Utilities
f.	Landfill Gas to Energy (3MW) - PPP Project	Short	Rs 20m/year subsidy over 5 years	Operational	Ministry of Energy and Public Utilities
5	Solar PV projects in 10 schools	Short	Rs 7m	Operational and feeding into grid	Ministry of Education and Human Resources
6	Pre-feasibility study on geothermal power in Mauritius	Short	Rs 20m	Report delivered with recommendations	Ministry of Energy and Public Utilities
7	Energy Auditors – Accreditation and Certification	Short	Rs 11m	Fully qualified auditors and undertaking audits	Ministry of Energy and Public Utilities Ministry of Industry, Commerce and Consumer Protection

**The gross investment of Rs5 billion for projects on renewable energy by the Private Sector will be partly offset by a subsidy of about Rs 235 million per year by Government for the next 20 years.*

6.3.4 Terms of reference for consultancy services for the establishment of the Utilities Regulatory Authority in Mauritius

The MID Process

Sustainable development is a global objective, aiming to respond to the needs of current generations without compromising the ability of future generations to meet their own needs. The future of SIDS is particularly at risk from rising costs of imported fuels and food, declining natural environment and the impacts of climate change on water, agriculture and sea level rise.

The 2005 Mauritius International Meeting on SIDS emphasised the urgent need for greater commitment to reduce inequalities, to develop sustainable consumption and production patterns, to protect and manage natural resources sustainably for economic and social development, to safeguard health and integrate the objective of sustainable development.

Maurice Ile Durable (MID) has the vision of making Mauritius a model of sustainable development, particularly in the context of SIDS. It addresses many aspects of sustainability, centred on the five Es, namely Energy, Environment, Employment/Economy, Education and Equity.

The MID Policy, Strategy and Action Plan were completed in 2013, identifying a range of activities that would help Mauritius to realise the MID vision. This Terms of Reference is to secure one of the activities identified in the Action Plan, for which the Government of Mauritius requires the support of technical specialists.

The need for Economic Regulation of Energy and Water

Mauritius has demonstrated remarkable economic development over the course of the last four decades achieved through astute policy making by government, institutional reform and liberalisation of the economy. This has generated a sustained improvement in productivity and competitiveness of the macro-economy and has improved the standard of living for Mauritius which is now classified as an upper middle income economy by the World Bank.

To continue on this path of development, the time has now come to reflect the national success and level of Mauritius' socio-economic development in the institutional governance of the energy, water and telecommunications sectors of Mauritius, all of which have elements of natural monopolies.

The legal, regulatory and institutional framework governing matters in the energy sector is currently inadequate to support the policy options identified in the present policy attributed to energy, water and telecommunications.

The present instability in the global economy has the potential to have a profound effect on Mauritius and the implementation of regulation across the three key sectors will ensure that these operate efficiently, provide a quality service to consumers and ultimately, value for money for the people of Mauritius. This will maximise the limited resources available to provide these three essential services and enhance the international competitiveness of the economy. It will also send a global signal of Mauritius commitment to transparency and establishing a modern institutional architecture for its economy.

Overall Goal of this Project

The goal of this project is to develop a detailed implementation plan and schedule for establishing the multi-sector regulatory authority. It will update (if necessary) the legal framework and establish the regulatory and institutional framework to govern the energy, water and water disposal services. It will support the implementation of initiatives that would improve the efficiency of each sector on both the supply and demand side. The foundations of this framework will be the present policy attributed to each sector.

Objectives

1. Establish the regulatory authority with recruitment of senior staff as reflected in the URA Act; and
2. Prepare detailed action plan/blueprint for implementation of regulatory framework.

Scope of Services

The services shall be carried out in accordance with generally accepted standards of professional practice. The Consultant's scope of work is expected to cover all activities necessary to accomplish the stated objectives of these services, while adhering to recognised principles and best practices, whether or not a specific activity is cited in these Terms of Reference.

In view of the time that has passed since the URA Act was drafted and the developments in each sector during that period, the Consultant will

I. Undertake the following tasks:

- a. Review the URA Act to assess its suitability;
- b. Make recommendations on the URA Act for its alignment with present policy objectives (if applicable);
- c. Consider and outline the implications of recommended amendments to the URA Act;
- d. Undertake stakeholder consultation⁹ including workshops on recommendations to amendments in the URA Act; and
- e. Draft the agreed amendments to the URA Act.

II. Establish and plan activities for the URA including:

- a. Legal registration;
 - i. Recruit and appoint staff in accordance with the URA Act, including the development of an organigram and job specifications for staff in accordance with the URA Act; and
- b. Prepare the following procedures and general guidance:
 - i. Mission, vision and objectives;
 - ii. Strategy;
 - iii. Governance including decision making, consultation and delegation of tasks for operation (in line with URA Act);
 - iv. Human resourcing and policies;
 - v. Establishment of a five year budget and relevant finance and administration including systems, control framework, accounting policies, assets, efficiency and procurement;
 - vi. Communication strategies and functions

III. Develop a detailed plan for implementation of the regulatory framework – work with senior URA management to plan the delivery of the major elements within the regulatory framework (as reflected in the existing or amended URA Act):

- i. Licensing and permitting;
- ii. Tariffs and price control;
- iii. Technical and commercial codes of practice;
- iv. Customer protection as reflected in the URA Act; and
- v. Quality standards;

Prioritise the implementation of the above functions including timing to recognise resource and capacity constraints.

IV. Develop capacity building programme for skills development and training in line with the approach proposed above to equip the URA staff with skills and necessary knowledge for implementation.

Reports and Deliverables

⁹ as a minimum, relevant Central Government Ministries, Parastatals, subordinate agencies associated with Ministries, service providers, Attorney General, relevant industry bodies or Chambers of Commerce

Table 17: Report and Deliverables for the Establishment of the URA

SN	ITEM	SCHEDULED DELIVERY DATES
1.	Submission of Inception Report including review of policy, regulatory and sectoral environment for all three sectors (10%)	1 month from effective date of contract
2.	Review URA Act and make recommendations if applicable (10%) Stakeholder consultation and workshops	3 months from effective date of contract
3.	Legal registration of URA (10%)	6 months from effective date of contract
4.	Procedures and general guidance (10%)	9 months from effective date of contract
5.	Outline proposal for each element of the regulatory framework (20%) Detailed proposal for implementation of regulatory framework (30%)	6 months from effective date of contract 15 months from effective date of contract
6	Submission Final Report (10%)	18 months from effective date of contract
7	Progress reports	Monthly, to be submitted on first Monday of each calendar month

Duration of Consultancy

The services should take 18 months for completion: [300-400] consultant-days.

There is an additional requirement of in-country time which is considered essential to deliver a final report and an implementation plan that is adequately informed on the context, challenges and level of development in Mauritius. This will be a minimum of 150 days (inclusive of the total).

Composition of the Team of Consultants

- Expert with legal drafting skills and experience in regulatory affairs.
- Regulatory Expert in each of the sectors addressing commercial, economic, financial and some technical issues.
- Regulatory Economist(s) with experience to address the three key sectors.

6.4 Concept Plan – A Cleaner, Greener, Pollution-Free Mauritius

6.4.1 Overview of a Cleaner, Greener, Pollution-Free Mauritius

6.4.1.1 The Current Situation

The Republic of Mauritius is a beautiful territory but parts are highly urbanised, with the consequent problems of loss of the natural landscape, pollution of land and the ocean and waste management. At the same time much of the rural landscape is industrialised for intensive agriculture. Native plant species are depleted, the lagoon is suffering from excessive sediment and nutrients in the water and parts of the landscape are littered with waste.

Mauritius faces a major challenge to protect its declining biodiversity and its economy. Tourism is particularly at risk since travellers have become sensitive to the environmental management of their host nation. Agriculture and inshore fishing depend on sensitive ecosystems and will not be sustained if the environment is allowed to deteriorate further.

Recycling of solid waste is minimal because it is hindered by two barriers: the cost of setting up a system to collect and handle separated waste, and the small scale of the Mauritian economy which limits the viability of the market for recycled materials. Waste management will soon dominate the agenda in Mauritius, as alternatives to the Mare Chicose landfill site have to be found.

Over the last 25 years there have been extensive environmental education programmes, with the result that 95% of children are now aware of the environmental concerns. However, problems such as fly tipping and littering, the absence of care for derelict buildings, bare land and natural resources remain. Endemic flora and fauna continue to survive in protected areas such as national parks, nature reserves and private reserves, and alien species of flora and fauna are still a threat to the Republic's unique endemic biodiversity.

Modern life contributes significant pollution to the Mauritian environment that is affecting the longterm future of the Republic's economy. Agricultural, industrial and domestic pollution have damaged coral growth within the lagoon; past unrelenting and thoughtless sand mining has put the coast at risk of erosion; and the urban environment is affected by exhaust fumes.

6.4.2 The concept Plan for a Cleaner, Greener, Pollution-Free Mauritius

This concept plan addresses the immediate environmental priorities. Its successful completion will set the foundations for a more sustainable longterm use of environmental resources in Mauritius. However, it is important to note that the improvement of the natural environment requires the participation of all Mauritians and cannot be delivered through government projects alone.

Implementation of the plan will deliver immediate, visible, improvements to inspire the population and stimulate the national consciousness on MID – connecting the details of the local environment with the broader challenge of sustainable living. It will also deliver lasting improvements in waste generation.

6.4.2.1 Goals

The MID vision is to create a nation

- that is environmentally conscious, adopts a sustainable lifestyle and acts responsibly;
- where natural resources including biodiversity, historical and cultural heritage are effectively managed, protected, monitored and used in a sustainable manner and that enjoys security in terms of water and food and a high quality of life in a green, zero waste and pollution free environment.

6.4.2.2 Targets

- Collect data to monitor, maintain or improve performance in the international Environment Performance Indicator.
- Reduce the ecological footprint to be in the upper quartile of performance of similar income nations by 2020.

6.4.2.3 Challenges

- There will be specific challenges to delivering a longterm solution:
- Achieving a lasting change in attitudes to environmental responsibility, especially to littering. The challenge is to bring about a permanent change in attitude and a shift in the behavioural attitudes of Mauritians.

- Delivering progress on a sufficient scale. Some improvements are required on a significant scale and might be unaffordable if too much is attempted at once.

6.4.3 Scope of Actions

In consultation with the Ministry for Environment and Sustainable Development (MOESD), the MID Commission, other Ministries and outputs from the Working Groups, the following areas are proposed for immediate action:

6.4.3.1 Cleaning and Embellishment of Physical Environment

Previous projects have attempted to control dumping which is a problem on bare land, especially in urban areas, and along roads. Dumping of waste is a significant environmental problem because it risks polluting the soil and water, harming wildlife, blocking drainage channels, and polluting the lagoon. It is also unsightly and degrades the neighbourhood. There are further impacts on the economy as tourists often cite waste management, dumping and litter in their comments of Mauritius on travel review web sites.

Fly tipping and littering are illegal but legislation and the current enforcement regime alone have been insufficient to prevent these from happening. Waste collection, transport and its management at the local level are carried out by Local Authorities. The cleaning activity will be implemented by the Local Authorities and will involve the identification of priority sites as well as enhancing on-going clean-up initiatives. The focus will be on strategic sites that demonstrate the benefits of a cleaner Mauritius. Cleaning of more than 200 black spots has already started.

The project will also involve the creation and embellishment of green spaces in order to transform Mauritius into a cleaner and greener place to live. The cleaning and embellishment activity will also be accompanied by an aggressive sensitization campaign, distribution of bins, regular clean-up activities and enforcement of environmental laws.

6.4.3.2 Solid Waste Management – Waste Minimisation

(a) Sustainable Management of E-wastes in Mauritius

Waste Electrical and Electronic Equipment (WEEE) or e-waste for short, is the term used to describe End-of-Life (EoL) or discarded appliances using electricity. The amount of e-wastes generated in Mauritius is increasingly rapidly and is expected to continue along the same trend. The disposal of e-waste has become a major issue of concern in Mauritius in view of the increasing amount of e-wastes being generated and the presence of elements like lead, mercury, arsenic and cadmium, among others, beyond threshold quantities classifying them as hazardous wastes as well as the lack of appropriate legal, institutional framework and disposal infrastructure for the proper management of e-wastes in Mauritius.

Given the negative environmental and health risks associated with such types of wastes and the growing amount of e-waste being generated in Mauritius, the Ministry of Local Government and Outer Islands, as enforcing agency for solid and hazardous wastes in Mauritius, recognises the urgent need for the setting-up of an appropriate framework for the Environmentally Sound Management (ESM) of e-waste in Mauritius.

There is need for appropriate national policies, strategies, legal and institutional framework as well as economic and policy instruments. This will henceforth enhance changes in current patterns of development, production, consumption and behavioural needs and which address, inter alia, reduction in the quantities of e-waste generated, re-use, recovery and safe disposal of e-waste based on the precautionary and polluter pays principles are required.

Currently, the responsibility of managing e-wastes lies with the Government. The implementation of appropriate economic instruments based on the 'polluter pays' principle will imply that generators of e-wastes would bear the cost of managing their e-wastes.

(b) Paper Recycling

Waste paper competes with other materials for the limited space in the only landfill in Mauritius. It is also an organic material and decays to pollute water and in landfill conditions, releases methane, which is a potent greenhouse gas. Therefore, there is an urgent need to reduce the amount of waste paper going to the landfill.

In most Government departments, the use of paper for printing and photocopying is common practice. The public sector is therefore a big generator of waste paper and it is committed to lead by example, by promoting recycling.

In this context, it is proposed to consolidate existing initiatives and implement waste paper recycling on a larger scale in which all Government buildings will be involved. All offices will be provided with adequate paper waste storage receptacles and the use of shredders will be optimised. It will be the responsibility of each Ministry to ensure that paper waste is being properly segregated and collected for recycling. Government will provide a package of incentives to encourage recyclers to participate in the project. At a later stage, other commercial companies and businesses will be included in the project.

Target: The target of the Ministry of Local Government is to achieve 75 % of recycling in 10 years' time.

(c) Home Composting Scheme

In 2011 the residents of Mauritius produced approximately 400,000 tonnes of household waste, which cost about Rs 2,500 per tonne to dispose of. Landfill space is running out and its cost is increasing, yet about 70% of household waste (i.e. approximately 280,000 tonnes) is organic and can be removed from the waste stream.

Organic wastes decay to pollute water and in landfill conditions release methane, which is a potent greenhouse gas. Removal of organic material from the waste stream will have significant environmental benefit as well as saving landfill space.

In some parts of Mauritius, home composting is a viable option for organic waste disposal and is already practiced to a small extent. It should be possible to reduce the volume of organic waste sent to landfill through home composting. Further reductions in waste could be achieved through education to waste less food, e.g. by preparing only the quantity of food that is required at the time. However this has to be balanced with the hygiene and health aspects of keeping food for longer in a warm climate.

A programme to promote home composting, with the following actions, is proposed:

- Procure and distribute compost bins at a subsidised cost. The MOESD has proposed an initial distribution of 10,000 bins, to be sold for a token fee of Rs 200 each. The fee will provide a minor compensation for costs but more importantly will help to secure the commitment of users.
- Work with civil society and NGOs to train users in the best practice use of home composters.
- Set up a monitoring programme to track the uptake, benefits and any problems associated with home composting. Benefits will include the reduction in volume to landfill and hence a reduction in collection costs, and a reduction in methane generation. Problems might include odour, pests and pollution from leachate if composters are not well operated.

The various modes of the implementation of the project will be looked into, including the supply to interested parties, development of master composters within the community, troubleshooting and maintenance of the composting bins by suppliers.

(d) Composting of Market Wastes

A considerable amount of market wastes is produced daily and, even for fully biodegradable waste, most is directed to the landfill. If market wastes are composted, they will reduce the cost of landfilling, while at the same time increasing the lifespan of the only landfill, which is nearing saturation point.

Since market wastes are biodegradable, it is proposed to initiate a project for composting of market wastes at transfer stations. This will be relatively easy and less costly since no sorting will be required prior to composting.

Land being available on site, the project would be started on a pilot basis at La Laura Transfer Station with the collaboration of Local Authorities.

(e) Provision of Eco-Points

About 28% of Municipal Solid Waste (MSW) consists of recyclables. Although there is a high potential for recycling, the recovery of these recyclables from households and businesses still remains a big challenge.

Since segregation at source and provision of a separate collection service only for recyclables is too costly and not feasible in the short term, it is envisaged to provide dedicated drop-off points in public places. This initiative will assume that recycling points can be positioned in such a way that additional car use is not required. Therefore, strategic locations such as filling stations and commercial centres should be targeted. These sites will have to be serviced through a partnership between the Local Authorities and the recyclers.

Householders should be sensitized and encouraged to perform more civic actions by transporting their recyclables to the drop-off points nearest to their residence. The development of drop-off points, the transfer and recycling, and sensitisation campaign will be coordinated for an effective implementation of the scheme.

(f) Selection of Appropriate Waste Treatment and Disposal Technologies

Safe disposal of Municipal Solid is a necessity in any waste management system. The Mare Chicose landfill started operations in the 1997 and the amount of waste being disposed of at the site has soared from 6,584 tonnes in 1997 to 427,000 tonnes per annum in 2010. Additional cells at the Mare Chicose landfill are being developed to ensure continuity in landfill capacity for the safe disposal of solid waste.

With a view to supporting the current planning process, a feasibility study will be initiated to provide an in-depth analysis of the various alternative treatment and disposal technologies for MSW to be carried out in the long term, including:

- Anaerobic digestion
- Thermochemical processes, such as gasification and pyrolysis

This will be followed by a recommendation of the best alternative, focusing on financial and environmental affordability criteria. It is expected that the site requirements will also be defined. Upon approval by Government, a full Request for Proposal (RFP) will be launched for the design, construction and operation of the selected treatment technology.

6.4.3.3 Environmental Protection

(a) Minimising Use of Agrochemicals and Pesticides

About 12, 000 planters are involved in production of about 115,000 tonnes of fresh vegetables annually on about 4,300 hectares of land. In order to increase crop yield, planters tend to make extensive use of agrochemicals and pesticides. As a consequence of excessive use of agrochemicals, the drinking water quality and lagoon water quality are adversely affected. On the other hand, excessive use of pesticides has resulted in human intoxication due to pesticide drifts on several occasions during the last decade. Furthermore, this irrational use of pesticides also induces development of resistance to commonly used insecticides, decimation of beneficial organisms (parasitoids, predators and honey bees) and also results in pesticide residues in agricultural produce. The public in general, is becoming increasingly concerned about environmental pollution and pesticide residues in agricultural produce.

To address this problem of excessive pesticide use by planters, Agricultural Research and Extension Unit (AREU) intends to further develop and implement Integrated Pest Management (IPM) strategies with particular emphasis on biological and non-chemical control methods and to promote agro-ecological farming among farming community in view of minimising use of agrochemicals, improving farm productivity and food safety.

The following projects are to promote sustainable crop production:

- **Promotion of biological control of key pests (leafminer, whitefly and tomato fruitworm) and mealy bugs on papaya and ornamentals**
Objective: to undertake a biological control programme to address the problem of excessive use of insecticides and also achieve a long term control of pests. This project will be implemented by AREU.
- **Development of an E-pest surveillance system in plant protection**
Objective: to establish an e-pest surveillance island wide for better pest monitoring and provision of a rapid advisory service to farmers for timely application of pesticides in field crops and hence reducing pesticide load in food crop production.

There is no proper surveillance and database on pest build up in food crop production in Mauritius. This project intends to bring ICT for the benefit of 12,000 planters through the development of an e-pest surveillance system. This system will permit quick collection of field data in a uniform way so as to develop a forewarning system for timely recommendation of control strategies. Farmers will thus get pest advisory information within the shortest possible time which will help in reducing unnecessary use of pesticides.

The e-pest surveillance system will consist of portable hand held devices preloaded with a survey application to be used for field data collection. Collected data will subsequently be uploaded to a central server. From the central server, a web server will pick the data pest wise, crop wise, region wise, date and time wise and reports generated will be interpreted by Researchers of the Entomology Division of AREU for dissemination among farmers by Extension Officers and SMS.

- **Adaptation of environment friendly techniques in the control of fruit flies and other pests**
Objective: The number of people travelling is increasing throughout the world as the latter is becoming a global village. Unknowingly pests and diseases are being carried by them through fruits and vegetables in their luggage.

Since the beginning of 2013, a new destructive fruit fly species and two new mealy bugs have been recorded. A new virus, detected recently is causing a lot of damage to tomatoes. As such, it is proposed to purchase two X-Ray machines for detection of illegal fruits and vegetables in luggage at ports of entry. This project will be implemented by the Ministry of Agro Industry and Food Security.

- **Promotion of agro-ecological and nutrition farming (Organic Farming)**
Objective: promotion of agro-ecological and nutrition farming systems to sustain long term productivity of agricultural land through integrated nutrient and water management, integrated crop management, integrated pest and disease management, rainwater harvesting, crop rotation, use of organic products,

green manuring, recycling of agricultural wastes/composting and record keeping. This project will be implemented by AREU.

This project will consist of capacity building of the farming community in agro-ecological farming and setting up of model demonstration plots in different regions of the island to sensitise farmers on minimising the use mineral fertiliser and agrochemicals while promoting nutrient recycling, soil fertility conservation and biological diversity.

(b) Protection of the Coastal Zone and Marine Ecosystem

During the last two decades, there has been a decline in the ecological health and economic productivity of our lagoons. Current surveys carried out by Japanese International Cooperation Agency (JICA) have shown that nearly 60-70% of our corals have been degraded. This can provoke rapid degradation of our lagoon and exacerbate the problem of erosion of our beaches. In order to remedy the situation, a series of initiatives is being proposed:

- Control of land based pollution: mud arrestors will be placed at some strategic places to control erosion, amongst others;
- Mangrove protection and propagation;
- Sustainable mooring;
- Sustainable fishing practices;
- Control of beach erosion;
- Coral restoration: damaged coral reef system will be rehabilitated through the promotion of coral farming at various sites around the island; and
- Creation and upgrading of marine parks through the creation of a Visitors' Centre.

Initially the focus would be on rehabilitation of the damaged coral reef system through the promotion of coral farming at various sites around the island.

(c) Creation of Sand Banks

Coral sand used to be extracted from the lagoon at the rate of 800,000 tonnes annually. Studies commissioned by the Government showed that this activity was having adverse, irreversible effects on the marine environment such as destruction of the marine habitat and coastal erosion.

In 2001, the Government of Mauritius banned lagoonal sand mining. As at present, Mauritius has only one inland sand quarry, which is nearing depletion. Severe beach erosion is anticipated and a reliable stock of sand for beach nourishment is required. The Mauritius Oceanography Institute has carried out a study on the volume of off-shore sand that could be extracted from some selected sites around the island of Mauritius. From 2010 to 2011, about 8,200m³ of sand have been used for coastal protection works around the island, with an estimated 3,500m³ for 2012.

It is proposed to consider offshore sand mining for replenishment of beaches. Additional expertise will be required in order to minimise the impacts of offshore sand mining, and to establish good practice procedures.

(d) Land Use Planning (Preparation and Implementation of Action Area Plans)

During the last ten years, lands released under the Sugar Industry Efficiency Act (SIEA) have stimulated the development of residential morcellements, resulting in urban sprawl and taking prime land from agriculture. The designs and locations of the morcellements resulted in increased use of cars and have included building techniques that are not eco-friendly.

In order to stimulate better planning and design of future, more sustainable, communities it is proposed to prepare and implement local Action Area Plans (AAP). The AAPs should be prepared in collaboration with

all stakeholders, aiming to identify sustainable modes of transport, stimulate compact development at a mixture of densities, include leisure and green spaces and mixed use areas.

As a result of the AAPs, an integrated approach to land use planning would be adopted, taking into consideration: servicing of land (a very costly process) including, for example, surveying, planning and designing, construction of roads, sewer lines and the connection of bulk services such as water, telecommunications and electricity.

6.4.3.4 Biodiversity Conservation

(a) Creation of 42 ha of Conservation Management Areas at Plaine Raoul in the Black River Gorges National Park

Less than 2% of native forests are left and they are found in an almost inaccessible area of the island i.e. in the Black River Gorges and on some mountain tops. Invasive alien species remain a threat to the Republic's native forests. Reserves have been created to conserve these forests but the invasion by introduced species continues to be the main driver of biodiversity loss.

It is proposed to restore 42ha of degraded native forest at Plaine Raoul in the Black River Gorges National Park, which if successful will increase the area under Conservation Management Areas (CMA) by 50%. This CMA will also provide a show-case for educating stakeholders on conservation of native forest and its biodiversity. The extended CMA should be designed to assist research in native forest and endemic species.

It is recommended that the project includes:

- Weeding of 42 ha of degraded native forest;
- Planting of native plant species; and
- On-going management of the CMA to protect the endemic species.

(b) Creation of 5ha of Conservation Management Areas on Gunner's Quoin Islet

Gunner's Quoin Islet has suffered severe degradation over the last 500 years, due to such factors as tortoise hunting, invasion of exotic plants and animals, poaching and deforestation. It is proposed to restore the degraded ecosystem of Gunner's Quoin to the original native palm rich community and mixed woodland ecosystem.

It is recommended that the project includes:

- Weeding of 5 ha of degraded native forest;
- Planting of native plants;
- Public awareness; and
- On-going management of Gunner's Quoin islet to protect the restored forest.

(c) Saving the Endemic Endangered Reptiles of the Mauritian Offshore Islets from Extinction

The small islands around Mauritius support many unique species that were once abundant on the main island. For example, 60% of the surviving reptile fauna became restricted to just a few of the surrounding islands as a result of habitat destruction and the introduction of invasive alien species.

It is proposed to rebuild the natural heritage of Mauritius by restoring communities of native threatened species and reducing threats to the island ecosystems. It is recommended that the project comprises such measures so as to:

- Enhance the scientific understanding of reptile distribution, survival, population growth, genetics, health and disease and impact upon ecosystems;
- Restore and manage communities of threatened reptiles through the combined use of captive breeding programmes, reintroduction and restocking and genetic management of island populations;
- Develop and implement strategies to mitigate the impact of invasive alien species by reducing invasion pathways and facilitating effective detection, control and where feasible eradication of invasive predators;
- Produce high quality promotional material on the conservation of threatened reptiles, their role in restoring island ecosystems and the threats that face Mauritian biodiversity;
- Profile the importance for restoring island communities through ecotourism and educational activities on the open nature reserve island Ile aux Aigrettes; and
- Provide in-situ and ex-situ training of Mauritian conservation practitioners to enhance skills and the future sustainability of conservation efforts.

6.4.4 Summary of Actions

Table 18: Summary of Actions for Cleaner Greener, Pollution free Mauritius

	Action	Short/ Medium/ Long term	Cost Estimate	Monitoring and Evaluation	Implementing Agencies
1	Cleaning and embellishment of physical environment	Short	Rs 180m	Number of sites cleaned Number of complaints about sites needing cleaning	Ministry of Local Government and Outer Islands
2	Creation and embellishment of green spaces	Short	Rs 75m	Number of green spaces created and embellished	Ministry of Environment and Sustainable Development
3	Sustainable management of E-wastes	Short	Rs 10m	Framework on sustainable management of E-wastes developed	Ministry of Local Government and Outer Islands
4	Waste paper recycling.	Short	Rs 500,000	Tonnes paper recycled.	Ministry of Local Government and Outer Islands
5	Home composting scheme	Short	Rs 30m	Tonnes of green wastes diverted from landfill.	Ministry of Environment and Sustainable Development
6	Market composting scheme	Short	Rs 10m	Tonnes of green wastes diverted from landfill.	Ministry of Local Government and Outer Islands

	Action	Short/ Medium/ Long term	Cost Estimate	Monitoring and Evaluation	Implementing Agencies
7	Provision of Eco-Points	Short	Rs 15m	Tonnes of waste collected for recycling	Ministry of Local Government and Outer Islands
8	Selection of appropriate waste treatment and disposal technologies	Short	Rs 20m	New technologies identified	Ministry of Local Government and Outer Islands
9	Minimising the use of agrochemicals and pesticides.	Short	Rs 45m	Tonnes of agrochemicals used each year.	Ministry of Agro Industry & Food Security Agricultural Research and Extension Unit
10	Protection of the coastal zone and marine ecosystem.	Short	Rs 60m	Ecological status of the marine and coastal zone	Ministry of Environment and Sustainable Development Ministry of Tourism and Leisure and Ministry of Fisheries
11	Creation of sand banks.	Short	Rs 20m	Tonnes of sand extracted Status of marine environmental indicators	Ministry of Environment and Sustainable Development Ministry of Housing and Lands Ministry of Fisheries
12	Preparation and implementation of Action Area Plans	Medium	Rs 500m (1 Area Plan for 3 years)	Action Area Plan implemented	Ministry of Housing and Land Local Authorities Ministry of Public Infrastructure, NDU, Land Transport and Shipping Ministry of Energy and Public Utilities
13	Creation of 42 ha of Conservation Management Areas at Plaine Raoul in the Black River Gorges National Park	Short	Rs 5.5m	Ecological status of the forest	National Parks and Conservation Service
14	Creation of 5ha of Conservation Management Areas on Gunner's Quoin Islet	Short	Rs 4.8m	Ecological status of the forest	National Parks and Conservation Service
15	Saving the endemic endangered reptiles of the Mauritian Offshore islets from extinction	Short	Rs 5m	Estimated population of reptile	National Parks and Conservation Service

6.4.5 Terms of reference for consultancy services for the development of a good practice guide for the creation of sand banks for beach replenishment in the Republic of Mauritius.

The MID Process

Sustainable development is a global objective, aiming to respond to the needs of current generations without compromising the ability of future generations to meet their own needs. The future of SIDS is particularly at risk from rising costs of imported fuels and food, declining natural environment, and the impacts of climate change on water, agriculture and sea level rise.

The 2005 Mauritius International Meeting on SIDS emphasised the urgent need for greater commitment to reduce inequalities, to develop sustainable consumption and production patterns, to protect and manage natural resources sustainably for economic and social development, to safeguard health and integrate the objective of sustainable development.

Maurice Ile Durable (MID) has the vision of making Mauritius a model of sustainable development, particularly in the context of SIDS. It addresses many aspects of sustainability, centred on the five Es, namely Energy, Environment, Employment/Economy, Education and Equity.

The MID Policy, Strategy and Action Plan were completed in 2013, identifying a range of activities that will help Mauritius to realise the MID vision. This Terms of Reference is to secure one of the activities identified in the action plan, for which the Government of Mauritius requires the support of technical specialists.

The Need for Sand Replenishment

Coral sand used to be extracted from the lagoon at the rate of 800,000 tonnes annually. Studies commissioned by the Government showed that this activity was having adverse, irreversible effects on the marine environment such as destruction of the marine habitat and coastal erosion.

In 2001, the Government of Mauritius banned lagoonal sand mining. As at present, Mauritius has only one inland sand quarry, which is nearing depletion. Severe beach erosion is anticipated and a reliable stock of sand for beach nourishment is required.

From 2010 to 2011, about 8,200m³ of sand have been used for coastal protection works around the island, with an estimated 3,500m³ for 2012.

It is proposed to consider offshore sand mining for creation of sand banks for replenishment of beaches. Additional expertise will be required in order to minimise the impacts of offshore sand mining, and to establish good practice procedures.

Overall Goal of this Project

The goal of this project is to develop guidance for sustainable exploitation of sand banks for replenishment of the beaches of Mauritius.

Scope of Services

The consultant shall carry out the following tasks:

I. A strategic environmental assessment

Such an assessment would cover the wider environmental costs and benefits of beach replenishment. This will enable the likely overall cost to be understood in terms of impacts on the marine and terrestrial environment.

II. Confirmation of the long-term quantity of sand likely to be required for beach replenishment

This step will collate existing research and ensure that the project addresses appropriate long-term quantities of sand for beach replenishment.

III. Identification of potential sites for offshore sand mining

This task should identify a selection of potential sites for sand mining. The sites (whether individually or in combination) should have the potential to supply the longterm needs for beach replenishment and be economically viable.

IV. Undertaking an environmental impact assessment

Work has already been undertaken to understand the fate of sand eroded from beaches, and the sink for this sand. It is important to understand where sand in offshore deposits has come from, and where it is moving to, since interrupting the pathway may have further upstream and downstream consequences.

Therefore, in order to compare the potential impacts of mining sand with the benefits of beach replenishment, an environmental impact assessment shall be carried out. It should cover as a minimum:

- The impact on sand migration and downstream sinks of removing sand from the locations;
- The impact of sand mining on the marine ecology at the locations;and
- The wider environmental impact of the activity, including the carbon footprint, shore-works and land-side impacts.

V. Recommend sites for sand extraction

The sites identified as potential sources of sand should be categorised according to:

- Their priority as a source, on environmental grounds;
- The practicality of access to the site and its economic suitability;
- The environmental remediation that is likely to be required; and
- The maximum volume of sand that can be removed each year, without incurring long-term environmental damage.

VI. Produce a good practice guide for the activities of sand mining and beach replenishment.

A good practice guide shall be produced for the management of sand mining and beach replenishment. It should be designed to be used by the operational staff engaged in the mining and replenishment activity. As a minimum the guide should cover:

- List of authorised sites and the maximum annual sand volume that may be mined;
- The mining technique that may be used at each site;
- Steps to be taken to protect the mining environment;
- Steps to be taken to protect the marine environment, including the management of the waste of shipsand the prevention of the introduction of alien species from imported dredging equipment;
- Steps to be taken to protect the lagoon during beach replenishment, including the protection of coral and marine life;
- Guidelines for monitoring and evaluation of the sand sources and the replenished beaches; and
- Guidelines for the provision of shore-side and marine-based support including fuel handling (if not expected to be facilitated through existing ports).

Reports and Deliverables

The following reports must be produced:

- Inception report;
- Strategic environmental risk assessment report;
- Report on sites suitable for sand mining;
- Good practice guide for offshore sand mining.

Duration of Consultancy

The project is expected to take one year from award of contract.

Composition of the Team of Consultants

General Competencies of the Core Team

The team of consultants shall demonstrate their competences and experience in previous assignments of similar nature and/or related consultancy services carried out in SIDS and/or developing countries. Overseas firms will have to team up with or have support of local counterparts.

The team of consultants shall constitute the core personnel, who shall undertake all assignments as described. Beyond organizational skills, the team of consultants shall be well versed in the 5Es of MID (Energy, Environment, Employment, Education, Equity) and sustainable development at large.

The Consultant's personnel shall be fluent in both spoken and written English with excellent report writing skills. A working knowledge in French will be an advantage. The personnel shall have high level of autonomy, initiative and creativity; have the ability to be focused and be result-oriented, even in complex stakeholder environments and under time pressure; and to work effectively with government officials, private sector, local communities and associations and shall have expertise in animation of public meetings, debates and workshops.

Team Leader

An experienced team leader will be designated within the core team. The role of the Team Leader will be to coordinate the activities of the project team and ensure proper management of the project and maintain a good liaison with relevant Ministries.

He/she will also be responsible for the technical coordination of the project as well as the submission of the deliverables.

He/she will be required to interact efficiently with government officials, private sector, civil society, local communities and associations and shall have experience in adequately facilitating stakeholder consultation in a workshop.

(i) Specialist in Marine Biodiversity

General Qualifications	At least a postgraduate degree in one of the following fields: Marine Biodiversity or Biodiversity Conservation or any other related field of study.
General Professional Experience	A minimum of 7 years of professional experience in his/her field of expertise, including biodiversity assessment, policy formulation and review, strategy and action plan formulation.
Specific Experience	He/she should have previously worked on at least one similar project. Working experience in tropical small island developing countries and experience in dealing with sustainable development issues will be an advantage.
Skills & Knowledge	<ul style="list-style-type: none">- Knowledge in general global biodiversity issues, and policy and legal review would be an advantage.- Excellent command of written and spoken English. Working knowledge in French would be an advantage

- Ability to work in a team, under pressure and ability to meet deadlines.
- Ability to work in multi-stakeholder environment.

(ii) Specialist in Environmental Management

General Qualifications	At least a postgraduate degree in one of the following fields: Environmental Management and/or Environmental Planning or any other related field of study.
General Professional Experience	A minimum of 7 years of professional experience in his field of expertise, including policy review and formulation, preparation of environmental management plans and strategies.
Specific Experience	He/she should have previously worked on at least one similar project. Working experience in tropical small island developing countries and experience in dealing with sustainable development issues will be an advantage.
Skills & Knowledge	<ul style="list-style-type: none"> - Knowledge of environmental impacts of ocean floor dredging in tropical waters. - Knowledge in policy and legal review as well as strategy and action plan formulation will be an advantage. - Excellent command of written and spoken English. Working knowledge in French would be an advantage. - Ability to work in a team, under pressure and ability to meet deadlines. - Ability to work in multi-stakeholder environment.

(iii) Specialist in Oceanography

General Qualifications	At least a postgraduate degree in one of the following fields: Oceanography, Geography, or any other related field of study.
General Professional Experience	A minimum of 7 years of professional experience in the field of expertise, including the forecasting and monitoring of sand movement on the sea bed.
Specific Experience	He/she should have previously worked on at least one similar project. Working experience in tropical small island developing countries and experience in dealing with sustainable development issues will be an advantage.
Skills & Knowledge	<ul style="list-style-type: none"> - Knowledge of the processes influencing movement of sand and gravel on the sea bed and the impacts of interrupting the flow of those materials. - Excellent command of written and spoken English. Working knowledge in French would be an advantage. - Ability to work in a team, under pressure and ability to meet deadlines. - Ability to work in multi-stakeholder environment.

(iv) Specialist in offshore materials extraction

General Qualifications	At least a degree in one of the following fields: Mining, geography or any other related field of study.
General Professional Experience	A minimum of 7 years of professional experience in the field of expertise, including the operation of offshore extractive industries and design and implementation of good practice guidance.

Specific Experience	He/she should have previously worked on at least one similar project. Working experience in tropical small island developing countries and experience in dealing with sustainable development issues will be an advantage.
Skills & Knowledge	<ul style="list-style-type: none"> - Knowledge of sand and gravel extraction, shipping, and discharge operations. - Excellent command of written and spoken English. Working knowledge in French would be an advantage. - Ability to work in a team, under pressure and ability to meet deadlines. - Ability to work in multi-stakeholder environment.

6.4.6 Terms of reference for consultancy services for the sustainable management of e-waste in Mauritius

The MID Process

Sustainable development is a global objective, aiming to respond to the needs of current generations without compromising the ability of future generations to meet their own needs. The future of SIDS is particularly at risk from rising costs of imported fuels and food, declining natural environment, and the impacts of climate change on water, agriculture and sea level rise.

The 2005 Mauritius International Meeting on SIDS emphasised the urgent need for greater commitment to reduce inequalities, to develop sustainable consumption and production patterns, to protect and manage natural resources sustainably for economic and social development, to safeguard health and integrate the objective of sustainable development.

Maurice Ile Durable (MID) is a highly consultative project which was begun in 2008. It has included inputs from technical working groups on each of the five Es, namely Energy, Environment, Employment/Economy, Education and Equity, taking account of the views and constraints of Government departments and civil society, and the review and advice of international specialists. A green paper on MID was prepared in April 2011.

The MID Policy, Strategy and Action Plan were completed in 2013, identifying a range of activities that will help Mauritius to realise the MID vision. This Terms of Reference is to secure one of the activities identified in the action plan, for which the Government of Mauritius requires the support of technical specialists.

Consultancy Services for the Sustainable Management of E-Wastes in Mauritius

Waste Electrical and Electronic Equipment (WEEE) or e-waste for short, is the term used to describe end-of-life (EoL) or discarded appliances using electricity. The amount of e-wastes generated in Mauritius is increasingly rapidly and is expected to continue on the same trend. The disposal of e-waste has become a major issue of concern in Mauritius in view of the increasing amount being generated and the presence of elements like lead, mercury, arsenic and cadmium,

among others, beyond threshold quantities classifying them as hazardous wastes as well as the lack of appropriate legal, institutional framework and disposal infrastructure for the proper management of e-wastes in Mauritius.

Given the negative environmental and health risks associated with such types of wastes and the growing amount of e-waste being generated in Mauritius, the Ministry of Local Government and Outer Islands, as the responsible authority for solid and hazardous wastes management in Mauritius, recognises the urgent need for the setting-up of an appropriate framework for the Environmentally Sound Management (ESM) of e-waste in Mauritius.

Appropriate national policies, strategies, legal and institutional framework as well as economic and policy instruments that call for changes in current patterns of development, production, consumption and behavioural need and which address, inter alia, reduction in the quantities of e-waste generated, re-use, recovery and safe disposal of e-waste based on the precautionary and polluter pays principles are required.

Overall Goal of this Project

To promote and ensure the environmentally sound management of e-waste in Mauritius, thereby contributing to the preservation of the environment, protection of human health and rational utilisation of natural resources.

Scope of Services

Specific Objectives

- a) Assess and evaluate existing e-waste policies, initiatives, gaps, challenges and opportunities in/for the management of e-waste in Mauritius.
- b) Develop comprehensive national e-waste policies, strategies and action plan for the ESM of e-waste in Mauritius.
- c) Recommend appropriate economic and policy instruments and financing mechanism which will favour the ESM of e-waste in Mauritius.
- d) Recommend appropriate legal and institutional framework for the ESM of e-waste in Mauritius.

Required Outputs

- a) **Comprehensive assessment of existing e-waste policies, initiatives, gaps, challenges and opportunities in the management of e-waste in Mauritius.**
Consultants shall prepare a financial feasibility report on the recycling of e-wastes in Mauritius.
- b) **Comprehensive national e-waste policy, strategies and action plan for implementation in Mauritius**
 - The national e-waste policy, strategy and action plan shall address the management of e-waste through the value chain starting from the importation of electric and electronic products in Mauritius through point-of-sale to end-of-life, taking into account the specific challenges and opportunities of Mauritius as a SIDS.
 - The national policy and action plan shall call for significant changes in current patterns of development, consumption and behaviour and address inter alia, reduction in the quantities of e-waste generated and re-use, recovery and safe disposal of e-waste based on the precautionary and polluter pays principles.
 - The action plan for the short to medium term shall be established and shall define the responsibilities for each action.

- c) **Appropriate economic and policy instruments and financing mechanism to support the ESM of e-waste in Mauritius such as take-back schemes, levy, Extended Producer Responsibility (EPR).**

A list of priority e-waste items which are of major concern in view of their hazardousness and quantities generated shall be established and for which appropriate economic and policy instruments and financing mechanism shall be recommended.

- d) **Comprehensive national e-waste regulations and institutional framework for the ESM of e-waste in Mauritius**

The national e-waste regulations should define, inter alia, list of items classified as e-wastes, specific responsibilities of all relevant stakeholders including government, importers, distributors, retailers, consumers of electric and electronic products as well as e-waste dismantlers and recyclers for the ESM of e-waste based on the precautionary and polluter pays principles.

Reports and Deliverables

Deliverables from the Consultant shall include the following:

- a) Inception Report.
- b) Report on the assessment and evaluation of e-waste policies and activities in Mauritius and financial feasibility on the recycling e-wastes in Mauritius.
- c) Comprehensive national e-waste policies, strategies and action plan for the ESM of e-waste in Mauritius and recommendations in respect of appropriate economic and policy instruments and financing mechanism which will favour the ESM management of e-waste in Mauritius.
- d) Comprehensive national e-waste regulations and institutional framework for the ESM of e-waste in Mauritius.

Duration of Consultancy

The project is expected to take three months from award of contract.

Composition of the Team of Consultants

General Competencies of the Core Team

The Consultant team shall demonstrate its competence and experience in previous assignments of similar nature and/or related consultancy services carried out in small island states developing countries. Overseas firms will have to team up with or have support of local counterparts.

The team of consultants shall constitute the core personnel, who shall undertake all assignments as described above. Beyond organizational skills, the team of consultants shall be well versed in the 5Es of MID (Energy, Environment, Employment, Education, Equity) and sustainable development at large.

The Consultant's personnel shall be fluent in both spoken and written English with excellent report writing skills. A working knowledge in French will be an advantage. The personnel shall have high level of autonomy, initiative and creativity; have the ability to be focused and to be result-oriented, even in complex stakeholder environments and under time pressure; and to work effectively with government officials, private sector, local communities and associations and shall have expertise in animation of public meetings, debates and workshops.

The specialist resource inputs required are listed below.

Table 19: Resource Inputs for Sustainable Management of E-Waste

Expert	Output	Qualification required of the expert	Duration of the expert's mission (days/month)	Portion of the mission to be performed on site
Team Leader (International)	Outputs a) to d)	Academic and professional qualifications in hazardous waste management and more particularly in e-waste	3 months	3 months
International Expert: Environmental Economist	Outputs a) and d): Recommendations in respect of appropriate economic and policy instruments and financing mechanism which will favour the ESM of e-waste in Mauritius	Academic and professional qualifications in environmental economics	2 months	2 months
Local Expert: Legal Expert	Output c): Comprehensive national e-waste regulations and institutional framework for the ESM of e-waste in Mauritius	Legal attorney	1 month	1 month

6.5 Concept Plan – Ocean Economy

This section has been adapted from the Ocean Economy Report, “Towards an Ocean Economy: The First Steps, August 2012”, produced by the Mauritius Research Council, at the request of the PMO, and in consultation with the relevant Ministries and stakeholder institutions.

6.5.1 Overview of Ocean Economy

6.5.1.1 The Current Situation

The Republic of Mauritius aims to sustain the economic growth that has transformed the country into a resilient, diversified and responsive one for which it is internationally recognised. The challenge with the ocean economy is to shift future economic growth (and associated employment) from that founded on orthodox principles of growth through consumption to sustainable growth.

Mauritius’ vastly expanded exclusive economic zone of 2.3 million square kilometres offers significant economic opportunities. If the Republic is to continue to build on the strong economic development of the last 30 years, the ocean economy should be strengthened so as to sustain and increase its contribution to the total economy in the short, medium and long term.

As a SIDS, the marine environment is at the heart of Mauritian development. The marine environment provides a wide range of resources, and in turn, supports local livelihoods offering employment to many. However, over the last 40 years, these resources have been subject to increasing pressure from both sea-based activities such as fisheries and tourism, leisure activities as well as land-based activities leading to impacts such as untreated effluents from industry and agriculture. These pressures are further exacerbated by the impacts of climate change.

The ocean and green economy work in tandem to support the sustainable economic growth of Mauritius. As such, it is natural to explore opportunities to grow the ocean economy. The ocean economy takes into consideration: the demand side – creating the market for ocean economic growth - and the supply side – ensuring there are the skills to supply the markets. This will evolve over time and will be driven particularly by Government’s decisions on the approach to managing living and non-living marine resources. On the supply side, there is an urgent need to develop skills across many aspects of the ocean economy, including, but not limited to, marine biologist, experts in seabed exploration and exploitation, marine renewable energy, coastal/ocean engineering, marine spatial planning and management.

In this context, the Government, in its 2012-2015 programme, strongly focuses on the development of the ocean economy, with the main objective to make full use of new and existing Science, Technology and Innovation (STI) so as to ensure the sustainable exploitation and management of our coastal and marine resources.

For this purpose, a Multi-Institutional Task Force on Ocean Economy was set up in April 2012 as mandated by the Prime Minister’s Office to prepare a report and a comprehensive list of research work being carried out in this field and to propose the way forward in the short and medium term for the scaling up of the Mauritian ocean economy. The Task Force was chaired by the Mauritius Research Council. The present chapter is adapted from the Ocean Economy Report, “Towards an Ocean Economy: The First Steps, August 2012”.

Following a desktop study and wide consultations, a list of all the different ocean-related activities and project undertaken by local institutions/organisations was prepared. The study has shown that considerable amount of work has been done so far by local institutions despite limited means. However it is felt that there is still a need to reconsider the exploitation and management of the ocean and marine resources in light of the proposed ocean economy and to further develop the scientific knowledge base for creating business opportunities. Moreover, Research and Development (R&D) institutions need to accelerate their research efforts towards fundamental and applied research so as to enable commercialisation and to promote the involvement of the private sector. All efforts have to be coordinated in a planned and integrated manner, while also paying attention to the legal, regulatory and institutional framework and capacity building.

The challenge will be to undertake these activities in a sustainable manner and this will require that a robust policy and regulatory framework be in place. A good starting point towards the Mauritian ocean economy would be forming the strategic business partnerships needed for this endeavour to take off. Since time is of the essence to bring the government's vision to life, laying the foundations for such a promising future resides in the actions taken today.

6.5.2 The Concept Plan for the Ocean Economy

6.5.2.1 Goals

The goal of the ocean economy is to contribute to the MID vision of:

- A nation that is environmentally conscious, adopts a sustainable lifestyle and acts responsibly.
- Natural resources, including biodiversity, historical and cultural heritage, are effectively managed, protected, monitored and used in a sustainable manner.
- More employment opportunities are created in an economy that is green, inclusive, innovative, resilient, robust and diversified.

6.5.2.2 Targets

The targets to achieve an ocean economy are:

- To make ocean economy one of the growth pillars of the Mauritian economy, through job and wealth creation.
- Create a comprehensive and robust regulatory and legal framework for the ocean economy.
- Ensure the sustainable use and management of our ocean resources.
- Contribute to energy security through marine renewable energy.
- Protect and enhance the function of the ocean as a carbon sink.

6.5.2.3 Challenges

There will be specific challenges associated with the ocean economy:

- Financial assistance for implementing the projects;
- Coordination in conducting multidisciplinary ocean-related matters;
- Specifically tailored mechanisms to attract businesses, investors and other interested parties to develop the ocean economy;
- Improving the infrastructural support and human resources provision for the development of an ocean economy;
- Adaptation to changing practices; and
- Systematic monitoring of our marine ecosystems and state of the ocean.

6.5.3 Scope of Action

Government's vision is to make of Mauritius, within the next ten years, a nation fully conscious of its immense potential as an Ocean State and to make full use of new and existing scientific knowledge in order to ensure proper management of these resources.

The Mauritius Research Council (MRC) was mandated in April 2012 by the High Level Project Monitoring Committee, under the Prime Minister's Office (PMO), to constitute a Multi-Institutional Task Force on the Ocean Economy.

In this context, the MRC constituted a Multi-institutional Task Force on Ocean Economy in 2012 to prepare a report on ocean economy, entitled "Towards an Ocean Economy: The First Steps", August 2012, through a highly participatory approach. Most of the projects outlined below have been extracted from the report on Ocean Economy. These projects will be further developed and costed at a later stage, once approved by Government. Living resources and marine energy have been identified as being among the priority projects.

6.5.3.1 Inventory of Marine Resources

Whilst the marine environment offers a prospect for sustainable development for SIDS like Mauritius, an integrated assessment of the state of the marine environment is required. The acquisition of key scientific information on oceans is important for the development of a sound and sustainable ocean governance structure, which will in turn contribute to economic growth.

Projects, activities, partnerships and initiatives on ocean economy would generate a wealth of information and Intellectual Property Rights. This information will be stored in a National Oceanic Knowledge database managed by various stakeholders concerned with ocean economy.

The following projects are suggested in order to acquire scientific information on ocean:

- a. Scientific Oceanic Surveys.
- b. Marine Resource Mapping & Computational Modelling.
- c. National Oceanic database.

6.5.3.2 Sustainable Growth of Living Resources

Mauritius has a huge territory of over 2 million km², of which 99% is the unexplored ocean. The economic potential of the oceans covers the exploitation of living and non-living resources in our waters, on the seabed and in the subsoil.

The ocean and marine resources present an immense opportunity for the sustainable growth of Mauritius, to promote and improve economic diversification and resilience of the country. With the recent expansion of the continental shelf by 396,000 km² (jointly with Seychelles), the potential has further increased.

Mauritius is blessed with a unique fauna and flora. The Mauritius Oceanography Institute(MOI) is focusing on the anti-cancer properties of the substances found in Mauritian marine sponges. Research conducted at the MOI, has highlighted that our marine resources holds enormous potential in the treatment of human diseases. It is essential to valorize the pharmaceutical potentials of marine resources found in the EEZ of Mauritius.

As an economic business entity, the fishing industry provides important revenue for the Republic of Mauritius. The Aquaculture Master Plan 2007 has shown that the potential to develop the aquaculture industry and substantially increase fish production and promote export and economic growth exists in Mauritius. The Fisheries Master Plan prepared in 2011 by the Ministry of Fisheries has as main objective to promote sustainable fisheries development with an ecosystem approach to fisheries.

Pearl culture is a thriving business for coastal village communities in many parts of the world. However, in Mauritius, the abundance, distribution and biology of pearl oyster species are poorly understood. Preliminary studies including assessment of pearl oyster species and evaluation of their culture potential have been undertaken by the MOI. There is also a need to explore opportunities for seaweed for food items, pharmaceuticals, animal feed, and plant growth promoter based on the Seaweed Project of the MRC.

To explore the economic potential of marine resources around Mauritius, the following projects are suggested:

- a. Aquaculture
- b. Seaweed Industry
- c. Coral Farming
- d. Pearl Culture
- e. Marine Nutraceuticals (Marine Proteins, Fish Oil, Antioxidants, Immuno-polysaccharide, etc...)
- f. Marine Pharmaceuticals & Marine Biotechnology

6.5.3.3 Marine Energy

There is worldwide trend towards an increased reliance on lower-carbon fuels and the production of renewable energy. The demand for electricity generated from the oceans' dynamic systems such as marine winds, currents, tides and temperature gradients is increasing.

The creation of offshore wind farms in localised waters of Mauritius and Rodrigues will enable the generation of clean and renewable electricity. Preliminary computational simulations of offshore wind farms by the MRC on the East far coast, South far Coast and the West far Coast of Mauritius using satellite data, show that the offshore winds of Mauritius have a potentially substantial amount of clean renewable energy that can be exploited. Using a phased approach, offshore wind farms (and other forms of marine renewable energy, such as wave energy) can lead Mauritius and Rodrigues to becoming almost entirely independent of imported fossil fuel in the years to come, thereby saving the country about Rs 31 billion every year.

In order to be in line with the MID vision to reduce our carbon dioxide emissions, the following Marine Energy projects are suggested:

- a. Development of Ocean Renewable Energies Policy, Strategy and Action Plan.
- b. Deep Ocean Water Applications – Land Based Oceanic Industries.
- c. Ocean Energy: Offshore Wind Farms.

A recent development by the MRC has been the setting up of a Centre for Marine Renewable Energy Mauritius (CMREM).

6.5.3.4 Science, Research and Technology

Science, Technology and innovation hold the key to unlocking the many promises of the ocean. At the global level, intensive research is currently being carried out on a number of ocean-related themes such as ocean currents, tidal waves, benthic habitats, marine flora & fauna in order to discover another frontier of the seas.

Through research and technology, mariculture is providing food and other marine products to nations of the worlds and millions of people obtain water from desalinated ocean water. Already seabed mining for poly-metallic nodules and hydrocarbons is an established economic sector in many countries. Hydrocarbon/mineral mapping and mining will pave the way towards a new era of socio-economic development.

Mauritius should envisage using its maritime space to set up Ocean Technology Incubators whereby projects dedicated to Marine Technology would not only grow and develop, but also allow for the formation of strategic business partnerships. This would in turn enable human resources capacity building to take place, while upgrades to our existing infrastructure are made. Such incubators would also provide opportunities for the sharing of Intellectual Property Rights.

The concept of an “Ocean Technology Incubator” as proposed in the Ocean Economy Report could be adapted for different ocean related sectors such as energy, health, food, water, etc. This would be done with a view to attracting state of the art ocean technology, thereby enhancing technology transfer and Foreign Direct Investment and to provide support to the private sector.

Moreover, the precise observational data required to properly monitor and manage our oceans in relation to maritime commerce, safety at sea, weather and climate forecasts, as well as national security are all direct and indirect benefits of science, technology and innovation.

The following projects in research and technology are recommended for the development of a full-fledged ocean economy:

- a. Sea Water Desalination.
- b. Hydrocarbon/Mineral mapping and Mining.
- c. Ocean Technology Incubator.
- d. Marine Hydrodynamics Laboratory.
- e. Maritime Surveillance and Security.
- f. Naval Architecture, Ship-Building and Harbour Engineering – Oceanic Vessel.

6.5.3.5 Human Capacity Building

While the development of an ocean economy presents an added opportunity for the country to expand its spatial boundaries, develop scientific knowledge and new business opportunities, Mauritius will require significant resources and expertise to exploit its ocean and marine resources in a comprehensive and sustainable manner.

(a) Qualifications for Marine Jobs (Vocational and Technical)

To support the growth of the blue economy it is necessary to develop a suitably trained and qualified workforce, with practical skills. The following actions are recommended to develop the vocational and technical marine workforce:

- Specify the certification scheme.
- Provide the career path that will emerge.
- Identify key qualifications required for ocean economy.
- Identify training route and potential partner organisations or sponsors.
- Design new course/revise existing courses.

(b) Higher Education for Boosting the Ocean Economy

To support the growth of the ocean economy, it is necessary to develop a suitably trained and qualified workforce, with degree/postgraduate level knowledge of marine based industries. The following actions are recommended to develop a highly skilled marine workforce:

- Identify priority higher qualifications, e.g. hydrodynamic modelling, etc..
- Forecast the number of jobs that will be required in each priority area of the ocean economy, and decide which education to provide locally.
- Develop courses and start training.
- Sensitisation of the market place on the new skills on ocean economy to reduce migration.

6.5.3.6 Development of a Policy and Legal Framework on Ocean Economy

There is currently no dedicated legal instrument for the development and/or management of the ocean economy. In order to create a stronger structure for the emerging Mauritian ocean economy, efforts should be focused on the rationalization and harmonization of the Mauritian ocean-related Legal Framework with a view to developing a “Mauritius Ocean Act”. It is also proposed to set up in parallel, a Legal Task Force with a view to fast-tracking ocean-related business license awards and reviewing regulatory and enforcement mechanisms.

6.5.4 Summary of Actions

Table 20: Summary of Actions for Ocean Economy

	Action	Short/Medium/ Long term	Monitoring and Evaluation	Implementing Agencies
1	Inventory of Marine Resources			
a	Scientific Oceanic Surveys	medium	Database on non-living and living resources of the EEZ created	Mauritius Oceanography Institute
b	Marine Resource Mapping & Computational Modelling	medium	Marine resource maps and models developed	Mauritius Oceanography Institute University of Mauritius Mauritius Research Council
c	National Oceanic database	medium	Database on National Oceanic resources created	Mauritius Research Council Mauritius Oceanography Institute University of Mauritius
2	Sustainable Growth of Living Resources			
a	Aquaculture	Medium	Commercial aquaculture farms operational	Ministry of Fisheries Board of Investment Mauritius
b	Seaweed Industry	Short	Commercial seaweed farms operational	Mauritius Research Council Board of Investment University of Mauritius Ministry of Fisheries
c	Coral Farming	Medium	Coral farms operational	Mauritius Oceanography Institute Ministry of Fisheries Board of Investment
d	Pearl Culture	Medium	Commercial pearl farms operational	Mauritius Oceanography Institute Ministry of Fisheries Board of Investment
e	Marine Nutraceuticals	Long	Commercial nutraceuticals marine farms operational	Mauritius Oceanography Institute University of Mauritius Ministry of Fisheries Board of Investment
f	Marine Pharmaceuticals & Marine Biotechnology	Long	Commercial nutraceuticals marine farms operational	Mauritius Oceanography Institute University of Mauritius Ministry of Fisheries Board of Investment
3	Ocean Renewable Energy			
a	Ocean Renewable Energies	Short	Ocean renewable energies policy, strategy and action plan developed	Mauritius Research Council Board of Investment
b	Deep Ocean Water Applications – Land Based Oceanic Industries	Short	Commercial deep ocean water applications – LBOI operational	Mauritius Research Council Board of Investment Mauritius Oceanography Institute
c	Ocean Energy: Offshore Wind Farms	Short	Offshore wind farms operational in Rodrigues and Mauritius	Mauritius Research Council Board of Investment

	Action	Short/Medium/ Long term	Monitoring and Evaluation	Implementing Agencies
4	Science, Research and Technology			
a	Sea Water Desalination	Medium	Sea water desalination started	Board of Investment Mauritius Research Council
b	Hydrocarbon/Mineral mapping and Mining	Medium	Hydrocarbon/mineral mapping started	Mauritius Oceanography Institute
c	Ocean Technology Incubator	Medium	Ocean Technology Incubator operational	Mauritius Research Council Mauritius Oceanography Institute University of Mauritius
d	Marine Hydrodynamics Laboratory	Medium	Marine Hydrodynamics Laboratory operational	Mauritius Research Council Mauritius Oceanography Institute University of Mauritius
e	Maritime Surveillance and Security	Medium	Surveillance, security ongoing	Ministry of Public Infrastructure National Coast Guard
f	Naval Architecture, Ship-Building and Harbour Engineering – Oceanic Vessel	Medium	Work initiated towards Naval Architecture, Ship-Building and Harbour Engineering	Ministry of Public Infrastructure
g	Satellite Remote Data Collection and Analysis	Short	Satellite remote data collected and analysis started	Mauritius Research Council University of Mauritius Ministry of Fisheries Mauritius Meteorological Services
5	Capacity Building			
a	Human Capacity Building	Medium term	% GDP	Ministry of Tertiary Education, Science, Research and Technology
b	Marine Conservation and Education	On-going	National awareness	Ministries and NGOs
6	Development of a Policy and Legal Framework on Ocean Economy	Short term	<ul style="list-style-type: none"> Mauritius Ocean Policy and Act developed. Ocean-related business license awarded and regulatory and enforcement mechanisms reviewed. 	Prime Minister's Office Mauritius Research Council
7	Ocean Business Incentives and International Partnerships	Short term	<ul style="list-style-type: none"> Ocean Investment Plan and Ocean Economy Projects 	Board of Investment

Note: The above projects will be further developed and costed at a later stage, once approved by Government.

6.6 Concept Plan – Green Economy

6.6.1 Overview of Green Economy

6.6.1.1 The Current Situation

The Republic of Mauritius aims to sustain the economic growth that has transformed the economy into a resilient, diversified and responsive one for which it is internationally recognised. The challenge with the green economy is to shift future economic growth (and associated employment) from that founded on orthodox principles of growth through consumption to green growth.

Mauritius is seeing a greening of the employment sector. According to a study by the International Labour Organization (ILO) in 2011, green jobs in Mauritius stands at approximately 6.3% (35,160 jobs) of total employment which is estimated at 558,100 for the year 2010. Most green jobs were found in electricity generation with around 23% of jobs in areas such as the supply of bagasse derived from sugar cane to electricity plants.

In agriculture 12% of employment can be considered green as well as decent, primarily in sustainable fishing, followed by forestry. While some textile companies have been greening their processes - with, for example, solar water heating systems, grey water use and recycling and natural air-cooling, only around 5% of employment in that sector was defined as green. The same accounts for the results in the services sector where 3% of the jobs are found in high energy and waterefficient tourist resorts.

Sectors such as recycling, waste management, green recreational activities, water and renewable energy also represent green jobs, though these sectors currently have a lower employment level in Mauritius.

An ILO commissioned report was undertaken in support of the Maurice Ile Durable process to analyse the contribution that the ILO's Green Jobs Agenda can make towards the MID process. Consultation as part of the exercise on employment highlighted a need for in-depth statistics and analysis on measuring the creation of green jobs. The outputs of the study have been integrated into the MID green economy agenda to drive forward the greening of the Mauritian economy.

In support of the MID process, the ILO proceeded with a green jobs analysis and carried out four specific studies under the MID initiative, including:- a socio-economic assessment of green jobs in the country (baseline), a policy research paper to determine the needs for a greener economy, a study into the existing green initiatives undertaken by Mauritian enterprises. This analysis forms the basis for recommendations on greening the Mauritius economy.

To identify the current position of the green economy in Mauritius, three methods were used to measure existing green jobs namely:

1. Process based method (jobs in enterprises which are among the 10% most energy and water efficient);
2. Output based method, which captures employment in 'market-valued' products and processes (the characteristics the final product or service has as an objective and environmental purpose'; and
3. Natural conservation method which involves jobs providing public goods with no market value.

This differentiation has been used in compiling actions to support green jobs across all three of these green market methods. The fundamental challenge will be to make the transition to a green economy without endangering the competitiveness of the Mauritius macro economy, on which employment entirely depends. In the medium term, the greening of the economy will strengthen productivity and efficiency to accelerate the international competitiveness of the Republic. This will demonstrate to the world that green growth does not threaten, but enhances the socio-economic development of a nation.

6.6.2 The Concept Plan for the Green Economy

6.6.2.1 Goals

The goal of developing the green economy is to:

- Drive the sustainable development agenda of the Commission on MID;
- Ensure that the economy is forged so as to constantly promote green growth in line with sustainable consumption and production patterns; and
- Create more employment opportunities in an economy that is green, inclusive, innovative, resilient, robust and diversified.

6.6.2.2 Targets

The targets which will shift the pathway of development towards a greener economy are:

- Achievement of a balanced sustainable green growth economy;
- Achievement of a 10 % growth in green jobs by 2020; and
- In the short term, ensuring that the GDP growth of the country is sustained and further strengthened by developing the green economy.

6.6.2.3 Challenges

There will be specific challenges to deliver a long-term green economic solution. These pertain to:

- Developing a strong and reliable market for green products within Mauritius and its trade partners.
- Achieving equitable growth of both the demand-side and supply-side of the green economy.
- Maintaining direction and progress during a time of global economic instability.

6.6.3 Scope of Action

6.6.3.1 Inclusion of a 'green job' policy in the National Employment Policy

The National Employment Policy has been developed to unlock opportunities for employment creation and to address problems related to mismatch in the labour market and issues associated with foreign labour. A great opportunity exists to align or ensure alignment of the National Employment Policy and the MID green economy agenda. Through this synergy it is possible to directly influence the market for green jobs, through supporting employment areas which qualify as 'green' and facilitating attractive employment conditions for target growth areas.

To implement the policy review the following actions are suggested:

- Drawing together a multidisciplinary team to incorporate the existing MID knowledge into National Employment Policy.
- Review of the existing green economic documentation developed in the process of the drafting of the employment policy, MID policy strategy and action plan, documentation detailing the ILO green jobs agenda and any other relevant information.
- Subsequent to the review, formulation of recommendations and agreeing upon them.
- Circulation of proposed changes for consultation, making the necessary final amendments to policy and adopting same.

6.6.3.2 MID Green Procurement – Government and Business

Greening of a procurement process allows the provision of goods, services, utilities and works to be awarded, not purely on a financial cost-benefit analysis, but with a broader view of the net benefits of the exercise. This means taking account of externalities in services such as up-skilling or education, regeneration, technology innovation and ethical practice.

In the Mauritian context, a policy and an action plan for sustainable public procurement have recently been completed as part of the National Programme on Sustainable Consumption and Production (2008 - 2013). These provide meaningful guidance on the green procurement process that should be adopted in Mauritius.

The Mauritian government as a significant employer and funding agent in the Republic is in a strong position to implement the actions suggested in the sustainable public procurement action plan. As part of the MID process, and in support of the National Programme on Sustainable Consumption and Production, a core action should be to take action towards a sustainable procurement route for all government funded projects and internal operations.

6.6.3.3 Green Agriculture

(a) Green Agriculture Certification

In order to promote green agriculture, there is a need to create demand for green products. There are currently no clear mechanisms in place in Mauritius to identify whether a product is green and whether sustainable agricultural farming practices are being employed. It is proposed to introduce a certification scheme for eco-agricultural products. The certification system will increase the visibility of green agricultural products available on the market.

The actions proposed to implement a green agricultural certification scheme are:

- Awareness raising campaign – The green agricultural certification will be supported by an awareness raising campaign aimed at both planters and the general public which would highlight the advantages and importance of green agriculture and green products for Mauritius (this will be coupled by capacity building of farmers in green production systems along with demonstration of green agricultural systems).
- Incentives to planters – A new package of incentives will be introduced to allow planters to move toward greener processes. Some incentives already exist; however, given the low-level of sustainable practices to date, more incentives are required. For example, green loans with preferential interest rates could be provided.
- Development of grower's guide on good agricultural practices for fresh fruits and vegetables.
- Training of auditors in green agricultural audit for safe and green farming.

6.6.3.4 Green Industry

Green businesses and green employment are commonly perceived as costly to achieve. A number of initiatives have been undertaken at enterprise level to lessen the use of fossil fuel energy and to enhance the reuse of water and recycling of waste. The development of a Resource Efficient and Cleaner Production (RECP) Programme is the main driver for greening the business sector.

(a) Resource Efficient and Cleaner Production (RECP) Programme

Industrial pollution is one of the major concerns in Mauritius. Green industry is still in its infancy, meaning that the potential for growth is real. In the past, several initiatives aimed at boosting up this sector have not materialized due to poor stakeholder commitment, a lack of financial incentives and a weak institutional framework.

The unstable prices of fossil fuels, the visible effects of climate change and the highly unstable economic environment call for a more judicious use of resources as well as minimizing impacts on the environment. The development of the green industry is essential in order to enable Mauritius to become a more sustainable island.

In this context, discussions are ongoing on the feasibility of setting up a Resource Efficient and Cleaner Production (RECP) programme to promote eco-friendly practices such as efficient use of water, energy, raw materials as well as encouraging industries to reduce emissions to the environment.

This programme will enable industries/companies to use fewer resources and adopt new technologies thereby maximising profits and improving their competitiveness. Companies will also be in a better position to meet the requirements of their buyers, with respects to low carbon footprint products.

In addition, the Small and Medium Enterprises Development Authority will be supported in setting up a Research and Innovation Unit for the development of more innovative green enterprises

(b) Market Development and Financial Mechanisms for Revalorizing Local Sustainable Products

This will entail the following activities:

- Market assessment of the types of local bio-products in demand and which can be revalorized by value chain development;
- Institutional, organizational and capacity development for the bio market value chain development; and
- Development of a local quality eco-label and undertaking a promotional campaign to promote these local bio-products;

6.6.3.5 Green Hotels and Eco-Tourism

Tourism is a main pillar of the Mauritian economy and employs a large number of persons. The sector also covers a wide range of economic activities and therefore has a high greening potential. Hotels can for example become resource efficient by using solar water heater systems, recycling facilities, energy saving equipment and awareness raising.

(a) Green Certification and Star Rating

A green certification system could be instated to allow hotels which are making efforts to move toward more environmentally-friendly activities to differentiate themselves and stand out from the rest. The degree of greening could also be highlighted through a 'star rating'.

(b) Green Procurement in Hotels

In order to encourage hotels and restaurants to purchase green products in their operations, a green procurement strategy should be developed.

(c) Eco-Tourism

An eco-tourism strategy could be used to attract more tourists. This would also serve to encourage the creation of more green jobs within the economy and, beyond tourism, such as forestry, fishing and recreation industries.

6.6.3.6 Capacity Building for MID

(a) MID Literacy

The MID agenda since its inception in 2008 has been widely publicised and engaged in the Mauritian population. It is important to maintain this level of engagement through to implementation. The MID literacy project aims to build on this by running a targeted campaign aimed at training key members of government staff, trade union representatives, private sector leaders and members of the community and village leaders.

The MID vision is about bringing people together towards a shared and common goal. This is a significant undertaking in any population, and it is important that MID projects are equally suitably inclusive, targeting minority groups and the socially disadvantaged.

Through the implementation of MID projects which focus on the education system, the working population, community groups and the elderly, the MID literacy will be achieved throughout the Mauritian population.

It is recommended that short courses on MID be conducted for the working population to provide the technical details behind the MID concept supported by some practical examples for implementation. The level of detailed information and contents within these courses should be relevant to the audience of these courses.

To implement the MID short courses, the following actions are suggested:

- Identify target government staff, trade union representatives, SME private sector and business leaders.
- Design MID awareness course (tailored to sector).
- Design MID champion course (tailored to sector) and roll out course initially through Government training programmes.
- Review the need for/implementing course revision. All new employees to attend course.
- Develop an MID literacy programme for learners from the pre-primary to the tertiary levels.

As part of the MID programme, a sharing of the MID message with community organisation, elders and members of the family home is essential not only to raise MID literacy but also to inspire sustainable practices in the domestic environment.

To improve community understanding of MID and the way it can be adopted in everyday life, the following actions are suggested:

- Work with MID liaison officer and key members of Women's Associations Groups to form an MID community literacy forum.
- MID community literacy forum to develop a MID course tailored for sustainable practice in the family setting.
- Identify suitable locations to hold the course taking account of childcare responsibility and other family requirements.
- Implement MID literacy course on sustainable practice in the family/home.

(b) Qualifications for Green Jobs

Training and education are vital to the emergence of a green economy. They are key elements for economic and social advancement and have always been one of the priority areas in the Mauritian National Development Strategy.

The challenge for education is to empower people of all ages to be responsible for creating a sustainable future. It thus focuses on ensuring that all learners attain high levels of achievement as the basis for lifelong learning and good citizenship.

Strengthening the green economy requires the development of green skills within the employment market as well as changes in the markets themselves. As part of the MID initiative enhancement of the vocational and technical training capacities is necessary to provide the workforce with the capacity and skill to deliver the commodity or service.

Actions to improve vocational training:

- Improve the range of technical and vocational training available for green jobs.
- Specify the approach to certification.
- Provide the career path that will emerge (including the Continued Professional Development) etc.
- Identify key qualifications required.
- Identify training routes and potential partner organisations or sponsors.
- Revise courses, design and introduce new courses.

A significant opportunity to boost the green economy agenda lies within the higher education system. Through the development of higher education courses which provide the necessary green skills, it is possible to supply the highly trained green workforce for the emerging green markets. In addition, to specific higher education courses targeting the green economy, it is recommended that opportunities to include MID or sustainable development modules within existing higher education courses be explored. Through this exercise, it may be possible to ensure that an understanding of the MID concept is shared by a greater proportion of higher education students.

Actions to improve MID education within higher education:

- Identify priority higher qualifications e.g. hydrodynamic modelling, watershed planning and management, green building design and green transport planning.
- Identify opportunities to include an MID module in existing higher education courses.
- Forecast the number of jobs that will be required in 2014 in each priority area.
- Carry open discussion with education partner countries.
- Develop courses or exchange agreements as appropriate.
- Establish the courses.
- Sensitisation of the market place to the new skills becoming available.

(c) MID Education System

The existing formal education system within Mauritius provides a significant opportunity to share the MID vision and develop future leaders in sustainable development. The National Curriculum is regularly under review to ensure alignment with emerging theory and realities.

The formal education system is an important tool in the development of MID and Mauritian sustainable development specialists. Some of the greatest opportunities lie in primary and tertiary level education, to inspire children to pursue careers and knowledge in the sustainable development field. This is fundamental to the sustainable growth both of the green economy and the MID vision.

Education in practice is an extremely valuable tool and some work is already being undertaken under the Green Schools agenda to enhance the sustainable design aspects of the existing schools.

Actions which may be undertaken to enhance the current education system are:

- Review the National Curriculum to ensure that MID is supported (at next update of National Education Strategy).
- Learning from existing green schools, publish a design standard to apply to all future school buildings.
- Apply green building concepts during the construction of new schools or upgrading of old ones.
- Develop short continuing education course in "Choosing green, Staying green, or Saving money by living green."

(d) MID Scholarship Fund

Raising the profile of Mauritius as a leader in sustainable development is an important element of the MID process. It is important for Mauritius as well as for the concept of MID and a sustainable green economy that Mauritian sustainability 'thinkers' or specialists are supported such that they may reach their full potential. It is through pioneering and inspiring people that the MID concept will evolve, and the profile of Mauritius as a leader among SIDS will be realised.

It is therefore suggested that a MID scholarship scheme should be set up for education in the green jobs sector.

Suggested actions to set an MID Scholarship Fund are:

- Identify and approach potential corporate sponsors from each market sector;
- Activate the MID Scholarships Fund, including a non-executive chair and promote same.
- Develop scholarship criteria;
- Develop a scholarship competency matrix to assess submissions and review;
- Publicise scholarship award and invite applicants for submissions;
- Review submissions against competency matrix;
- Award scholarships; and
- Hold an award ceremony and publicise scholarships.

(e) MID Extension Officers – Knowledge Sharing

There is a wealth of existing and emerging knowledge of sustainable practices within the Mauritian population. Though MID continues to move sustainable thinking forward in Mauritius, it is also important to support this with enhanced communication tools to make use of the information already available.

There are many Government officials and specialist extension workers already working hard to share best practice and innovation across their fields. This existing network should be enhanced through a short MID knowledge sharing course, thus spreading the knowledge of MID. It is the intention to use existing Government advisors such as community support officers, social workers, agricultural advisors, energy auditors and planning or building inspectors to provide broader training of the MID vision and enhance existing knowledge of sustainable practice.

In essence the aim of the MID Extension Officer Project is to introduce a skills expansion course and certificate, to allow current technical extension officers to become certified 'MID Extension Officers' to share the MID vision.

To implement this knowledge sharing initiative the following actions are suggested:

- Identify existing extension roles that are linked to MID;
- Design a short version course on "Working with MID";
- Provide training and certification to advisors;
- Design refresher course; and
- Provide refresher course to MID advisors.

6.6.4 Summary of Actions

Table 21: Summary of Actions for Green Economy

	Action	Short/Medium /Long term	Cost Estimate	Monitoring and Evaluation	Implementing Agencies
1	Include a 'green' job policy in the National Employment Policy	Medium	Rs 0.5m*	% increase in green jobs across Mauritian employment sector	Ministry of Labour, Industrial Relations and Employment (MLIRE).
2	MID green procurement	Short	Rs 2m	% of Government procurement by value meeting 'green procurement' guidelines	Ministry of Finance and Economic Development
3	Green agriculture	Short to Medium	Rs 12m per year for five years.	Number of planters shifting to green agriculture Number of products attaining green certification	Ministry of Agro Industry and Food Security Mauritius Standard Bureau
4	Green industry	Short	Rs 16m per year for three years.	Number of auditors trained in certification of eco-friendly standards Number of businesses attaining 'green' certification % decrease in consumption of energy, raw materials, waste and waste water	Ministry of Industry, Commerce and Consumer Protection
5	Green hotels and eco-tourism	Short	Rs 10m per year for two years.	Number of hotels attaining the green certification % of green procurement of total procurement of hotels	Ministry of Tourism and Leisure
Capacity Building for MID					
6	MID extension officers	Short	Rs 3m	Number of officers attending awareness and sensitization workshops/campaign	Ministry of Civil Service and Administrative Reforms
7	Qualifications for green jobs	Short to Medium	Rs 1m per year	Number of certificate delivered per year	Ministry of Tertiary Education, Science, Research & Technology Ministry of Education and Human Resources
8	MID education system	Short	Rs 1mper year	Number of people obtaining a 'green'	Ministry of Tertiary Education,

	Action	Short/Medium /Long term	Cost Estimate	Monitoring and Evaluation	Implementing Agencies
				certification through e-education.	Science, Research & Technology Ministry of Education and Human Resources
9	MID scholarship fund	Short	Rs 2m	Number of research papers released.	Ministry of Tertiary Education, Science, Research & Technology
10	MID literacy	Short to Long	Rs 2m per year	% of population who understand the MID message	Prime Minister's Office

*** To train senior employment officers and other staff on green jobs**

6.7 Summary Table showing MID Policies, Strategies and
Actions/Projects

Table 22: Overarching Policies, Strategies and Actions/Projects

Overarching						
Policy Code	Policy	Proposed Strategy	Action	Link to Concept Plan	Priority	Implementing Agencies
O1	Improved Integration: To facilitate integrated planning and implementation of legislation.	To develop an integrated planning approach with national and regional level development strategies to make best use of key regional resources to accommodate growth.	To develop an independent auditing mechanism for a set quota of planning applications at the Local Authority level.		Medium	Ministry of Housing and Lands Ministry of Environment and Sustainable Development Ministry of Local Government (Local Authorities) Ministry of Agro Industry (NPCS)
			To develop management plans at the level of Local Authority to ensure integrated planning and enforcement of legislation.			
			To review the existing planning legislation to take into consideration plan making, monitoring and implementation, institutional arrangements, compensation due to planning decisions, planning agreements with land owners and development charges.			
		To review the national guidelines on Environmental Impact Assessment (EIA) to incorporate current best practices and the MID principles.	To review existing EIA guidelines and develop new guidelines.			
		To develop one common law - 'The Biodiversity Act' to centralise and streamline all legislations relating to biodiversity.	To pass a 'Biodiversity Bill' which will streamline all legislations relating to biodiversity.			
		To review and increase the efficiency of the planning process, enforcement measures and fiscal incentives to develop a holistic mechanism.	To strengthen building inspection unit to provide guidance, manage and regulate residential and individual home development.			
Policy Code	Policy	Proposed Strategy	Action	Link to Concept Plan	Priority	Implementing Agencies
O2	Behavioural Change: To develop a mindset that creates assets, values and accepts equitable sharing; respects and complies with the law protecting the environment; responsibly pays for use of natural goods and services; and has an endemic sense of ownership and stewardship of the natural environment.	To promote MID literacy at all levels.	To undertake Resource Efficiency and Cleaner Production (RECP) programme.	Green Economy	Short to Long	Commission on MID Ministry of Industry, Commerce and Consumer Protection
			To develop and train MID Extension Officers.			
			To introduce a MID literacy campaign.			
O3	Collaboration: To promote collaborative mechanisms which bring together the public and private sectors, community, NGOs and voluntary sectors to support MID.	To explore opportunities to develop Public Private Partnership initiatives.	To conduct a review of the costs and benefits of Public Private Partnerships (PPP) and make recommendations on the way forward and likely amendments to legislation that would be required in order to progress with PPP.		Medium	Commission on MID Ministry of Finance and Economic Development
		Government will continue to make relevant policies, plans and strategies	To ensure all new and emerging policies, plans, and strategies are available for public			

Table 23: Energy Policies, Strategies and Actions/Projects

Energy						
Policy Code	Policy	Proposed Strategy	Action	Link to Concept Plan	Priority	Implementing Agencies
A1	<p>Long Term Energy Strategy:To create the enabling environment for the implementation of the Long Term Energy Strategy.</p> <p>This policy will link to the delivery of Overarching Policy O1.</p>	To develop a short scenario based energy plan for the next 30 years to maximise the security of future energy supplies, building on the Long Term National Energy Strategy.	To analyse the national energy demand profile and target high demand key sectors to reduce their consumption through financial incentives, e.g. tax reliefs.	Energy	Short	Ministry of Energy and Public Utilities
		To understand the development needs of the grid system to enable uptake of new technology in the future.	To model and study grid response to renewable energy uptake.			
		To ensure that transport and energy planning are core aspects of integrated planning within the Republic.	To implement the Energy Strategy Action Plan.			
		In all actions with longterm implications for energy, to balance the competing priorities of the holy trinity of energy policy, namely efficiency, security of supply and sustainability.				
A2	<p>Energy Efficiency Targets: To use and manage energy in an efficient way.</p> <p>Goals include:</p> <p>1. Reducing energy consumption in non-residential buildings by 10% by 2020 (in comparison to 2012)</p>	To support the activities and effective development of the Energy Efficiency Management Office (EEMO) with active participation by the CEB and MEPU.	To undertake energy audits and energy efficiency advice to offices, factories and households. To educate users and raise awareness of energy reduction targets through campaigns. To implement the Building Control Act.	Energy	Medium	Goals 1&2: Ministry of Energy and Public Utilities (EEMO) and Ministry of Public Infrastructure) Goal 3: Ministry of
		To explore demand-side management to support the control of peak energy loads.	To implement the Energy Efficiency Act and consolidate the Energy Efficiency Management Office.			

Energy						
Policy Code	Policy	Proposed Strategy	Action	Link to Concept Plan	Priority	Implementing Agencies
	<p>comparison to 2010).</p> <p>2. Reducing public sector buildings energy consumption on average by 10% by 2020 (in comparison to 2010).</p> <p>3. Supporting industry in reducing their associated energy requirements, implementing energy efficiency measures and associated impacts of energy choices on Mauritius.</p> <p>4. Improving the efficiency of transport by delivering modal shift (mass transit) influencing behaviours and supporting the adoption of more efficient technologies (targets are established under Policy A3).</p>	To revise Government Procurement Strategy to include energy efficiency as a key procurement principle.	To mandate the use of green building standards in all new government funded projects, as a flagship energy efficient design.			<p>Industry, Commerce and Consumer Protection</p> <p>Goal 4: Ministry of Public Infrastructure, National Development Unit, Land Transport and Shipping</p>
A3	<p>Sustainable Public Transport: To develop an efficient affordable, accessible and cleaner transport system based on public transport efficient fuel use and good planning, leading to a reduction in consumption of energy in the transport sector by 35% by 2025, in comparison to 2010.</p>	To support the implementation of the Mass Transit system.	<p>To publish data on the returns on investment of different renewal energy sources.</p> <p>To estimate the likely benefits of investment in promotion or subsidising or other economic incentives for renewable energy initiatives.</p> <p>If cost-beneficial as estimated above, to promote appropriate economic incentives to increase uptake of renewable energy sources.</p>		Medium	<p>Ministry of Public Infrastructure, National Development Unit, Land Transport and Shipping</p>
		To support the use and development of low-energy modes of transport.	Local Authorities and supporting Ministries to develop pilot program for cycle lanes and explore incentives for increased car occupancy and traffic congestion management.			Local Authorities

Energy						
Policy Code	Policy	Proposed Strategy	Action	Link to Concept Plan	Priority	Implementing Agencies
A4	Renewable Energy Targets: To help the Republic meet its energy needs in locally sustainable and compatible ways and to reduce our dependence on fossil fuel sources of energy without putting prohibitive economic burdens on the nation. Our goal is to increase the share of sustainable renewable sources in electricity production of 35% by 2025.	To develop and maintain a pro-active energy supply plan in order to meet future energy demand.	To commission an innovative energy supply plan for future-proofing energy supply to the year 2025.	Energy	Medium	Ministry of Energy and Public Utilities
		To explore opportunities for providing additional economic incentives to promote renewable energy.	To undertake renewables feasibility study with a focus on solar, wind and hydro power but also including potential for lesser explored renewable sources such as geothermal and wave energy. Finalisation of the Renewable Energy Master Plan			
			To increase the diversification of power generation by focusing investment on the expansion of feasible renewable assets and infrastructure (including solar, wind and small hydro power). Responses should be tailored to unique opportunities within different sectors i.e. transportation, electricity generation etc.			
A5	Energy Security: To ensure energy security through the application of MID policies.	To reduce reliance on external (international) fuel supplies.	To develop and implement a Renewable Energy Procurement Framework	Energy	Short	Ministry of Energy and Public Utilities
A6	Power Sector Reform: To ensure power sector reform and the introduction of independent economic regulation of electricity.	To set up the energy regulator.	To set up the Utilities Regulatory Authority (URA)	Energy	Short	Ministry of Energy and Public Utilities

Table 24: Environment Policies, Strategies and Actions/Projects

Environment						
Policy Code	Policy	Proposed Strategy	Action	Link to Concept Plan	Priority	Implementing Agencies
B1	Land Use and the Environment: To ensure that sustainable land use planning takes proper account of land use impacts on the environment and efficient use of scarce land resources and public transport system.	To implement an integrated approach to sustainable land use management, balancing the needs of urban and rural development with the natural and social environment.	To adopt a sustainable land use planning process by implementing actions under O1 and O6.	Cleaner, greener, pollution-free Mauritius	Short	Ministry of Housing and Lands Ministry of Environment and Sustainable Development Ministry of Agro Industry and Food Security Local Authorities Ministry of Public Infrastructure, NDU, Land Transport and Shipping Ministry of Energy and Public Utilities
		To ensure sensitive and vulnerable ecosystems (including lagoons, national parks, and reefs systems) are not threatened by development.	To prepare and implement Action Area Plans.			
			To build capacity at the level of the Ministry of Housing, Local Authorities and other institutions in sustainable land use planning			
B2	Capacity to Increase Environmental Knowledge: To ensure there is sufficient and appropriate capacity in all aspects of environmental conservation, protection and management, including human health and to carry out research and development where required.	To enhance government capacity to manage and publicise environmental data.	Statistics Mauritius to work in partnership with other institutions to maximise the environmental data available.	Green economy	Medium	Prime Minister's Office (Statistics Mauritius)
		To continue to develop specialised knowledge in all aspects of environmental management, conservation and enhancement.	To work with academic institutions to develop new environmental courses and technologies e.g. for traffic management, waste management and pollution control.			
B3	Pollution Control: To prevent damage to the natural	To review and enforce existing environmental legislation and regulations.	To minimize the use of agrochemicals and pesticides.	Cleaner, greener, pollution	Medium	Ministry of Environment and

Environment						
Policy Code	Policy	Proposed Strategy	Action	Link to Concept Plan	Priority	Implementing Agencies
	environment by pollution, contamination of the land, atmospheric emissions (including odour), noise, solid and hazardous waste and abusive use of agrochemicals (including pesticides) and liquid effluents.		To strengthen the enforcement of current environmental protection regulations through additional resource use.	free Mauritius		Sustainable Development Ministry of Housing and Lands Ministry of Agro Industry and Food Security
B4	Water Resources: To ensure water resources are managed and used in a sustainable manner through effective watershed management, pollution control, sustainable urban drainage, demand management, rainwater harvesting and reuse of water as appropriate.	To formulate a consolidated Water Act in line with the Water Sector Reforms in order to simplify existing legislation and address issues of protecting and conserving freshwater resources.	To consolidate water resources legislation for a consolidated Water Act.		Medium	Ministry of Energy and Public Utilities
B5	Managing Wastes: To implement a sustainable solid and hazardous waste management system.	To implement best practice in biodegradable waste processing.	To initiate a home composting scheme.	Cleaner, greener, pollution free Mauritius	Short	Ministry of Local Government and Outer Islands Ministry of Environment and Sustainable Development
			To initiate a programme for composting of market waste			
		To implement the National Solid Waste Management Strategy 2011.	To undertake a feasibility study for selection of appropriate waste treatment and disposal technologies			
		To develop appropriate incentives to reduce waste at source.	To promote sustainable management of E-waste in Mauritius.			
		To develop and implement a resource recovery programme (recycling strategy for Mauritius) including setting targets for different waste streams.	To identify appropriate resources to develop a waste reduction and recycling strategy to focus on household and industry. To consider the use of eco-points as an incentive.			
			To implement a programme on Paper Recycling (starting with Government offices).			
	To develop appropriate disposal infrastructure for residual wastes in the	To identify suitable sites for disposal of waste.		Long		

Environment						
Policy Code	Policy	Proposed Strategy	Action	Link to Concept Plan	Priority	Implementing Agencies
		infrastructure for residual wastes in the long term.	To ensure construction and operation of landfill.			
B6	Environmental Health: To improve and protect the health and wellbeing of all Mauritians by providing a high quality, safe environment to live and work in, thereby ensuring an excellent quality of life is experienced by all.	To strengthen enforcement of existing legislations on land use planning and occupational health and safety.	To reinforce awareness raising and empower the Local Authorities, Ministry of Labour and other institutions to ensure an efficient licensing, monitoring and reporting mechanism.		Short	Ministry of Housing & Lands Ministry of Labour, Industrial Relations and Employment Local Authorities
		To improve personal safety and quality of life in risky and needy areas.	To ensure policing campaign in risky areas.			
			To create a "Health Observatory and Information Management" system		Long	Ministry of Health and Quality of Life
B7	Improving the Environment: To enhance the natural environment and built up areas within the Republic.	To promote the clean and green concept and minimise land use conflicts.	To clean and embellish the physical environment	Green economy Clean, Green and Pollution free Mauritius	Medium	Ministry of Environment and Sustainable Development Ministry of Housing and Lands Ministry of Public Infrastructure, NDU, Land Transport and Shipping
		To promote sustainable buildings.	To adopt the emerging sustainable design guidelines 'Brilliant Pearl Rating' system.			
			To implement the Building Control Act			
B8	Food Security: To promote food security for the Republic through sustainable agricultural practices and conservation of agrobiodiversity.	To ensure that agricultural land is not compromised through effective land use planning and pollution control.	To prepare an agricultural map to indicate highly suitable agricultural lands for crops other than sugar cane and other highly suitable lands which should be protected from development pressures.	Green economy	Medium	Ministry of Housing and Lands Ministry of Agro-Industry and Food Security
		To reduce reliance on food imports and increase self-sufficiency in major food crops without harming the environment.	To encourage and support SME's in local food production.			
		To review the Food Security Plan (2008 – 2011).	To implement the revised Food Security Plan.			

Environment						
Policy Code	Policy	Proposed Strategy	Action	Link to Concept Plan	Priority	Implementing Agencies
B9	Biodiversity Conservation: To conserve the natural assets of the Republic by adopting the ecosystem approach.	To monitor and manage the use of terrestrial and marine biodiversity to ensure that they continue to provide ecosystem services in a sustainable way.	<p>To protect existing and increase indigenous forest cover.</p> <p>To create Conservation Management Areas (starting in Black River Gorges National Park and Gunner's Quoin Islet).</p> <p>To save the endemic endangered reptiles of the Mauritian offshore islets from extinction.</p> <p>To protect the coastal zone and marine ecosystem, focusing initially on rehabilitation of damaged coral reef system through coral farming.</p> <p>To create sand banks for beach nourishment.</p> <p>To promote mangrove protection and propagation.</p>	Cleaner, greener, pollution free Mauritius	Short	Ministry of Agro-Industry and Food Security Ministry of Fisheries Prime Minister's Office (Mauritius Oceanography Institute) NPCS

Table 25: Employment/Economy Policies, Strategies and Actions/Projects

Employment/Economy						
Policy Code	Policy	Proposed Strategy	Action	Link to Concept Plan	Priority	Implementing Agencies
C1	Develop a Green Economy: To develop green key economic sectors and create green jobs.	Building on the ILO 2012 document "Mauritius building a Green Economy", to develop and implement a realistic plan for growing the green economy, ensuring that economic growth contributes to the realisation of the MID vision.	To implement the actions within the green and ocean economy Concept Plan.	Green and ocean economy	Short to medium	Commission on MID Ministry of Environment and Sustainable Development Ministry of Tourism and Leisure Ministry of Industry, Commerce and Consumer Protection
			To include a 'green' job policy in the National Employment Policy			
			To develop a Road Map for the Green Economy, which will map out the step by step activities together with a range of actions with milestones, indicators and targets, as well as mechanisms to monitor overall progress.			
			To develop and implement an ecotourism strategy			
C2	Quality of Employment: To enhance the quality of employment.	To stimulate the adoption of modern working methods to improve productivity and develop an e-economy. To develop high-quality and productive workplaces within an effective regulatory environment. To develop workforce skills for the green economy.	To increase the number of vocational green courses available on the island.	Green and ocean economy	Short to medium	Commission on MID Ministry of Education and Human Resource Ministry of Tertiary Education, Science, Research and Technology
			To provide training courses for all public sector employees sharing the principles of MID, including quality of life and work life balance practice.			
C3	Sustainable Consumption and Production: To promote Sustainable Consumption and	To ensure that businesses are aware of and adopt good environmental practice.	To implement the remaining actions proposed within the Sustainable Consumption and Production (SCP) Programme.	Green and ocean economy	Short	Commission on MID

Employment/Economy						
Policy Code	Policy	Proposed Strategy	Action	Link to Concept Plan	Priority	Implementing Agencies
	Production (SCP) patterns for a green economy.	To encourage sustainable procurement.	To adopt a green procurement strategy for government and business, including hotels.			Ministry of Environment and Sustainable Development Ministry of Finance and Economic Development
C4	Business Agenda: To promote and support the sustainability agenda in business.	To develop and implement the concept of green jobs in all sectors.	To develop market and financial mechanisms for revalorizing local sustainable products.	Green economy	Short to medium	Commission on MID Ministry of Agro Industry and Food Security Mauritius Standard Bureau
			To implement a Green Agriculture Certification scheme.			
			To encourage hotels to move towards green certification and star-rating.			
		To enhance the corporate environment and social responsibility and accountability by establishing a Sustainability Index based on Global Reporting Index (GRI).	To develop and implement a Sustainability Index for listed companies on the Stock Exchange of Mauritius.			
C5	Human Resources: To transform present and prepare future human resources in order to be aligned with green policies thereby upskilling workforce to be able to undertake green jobs.	To develop a strong programme of vocational training to support employees' transformation to be able to undertake green jobs.	To enhance the vocational support for green jobs.	Green and ocean economy	Short to medium	Ministry of Education and Human Resource Ministry of Tertiary Education, Science, Research and Technology Ministry of Civil Service and Administrative Reforms
			To introduce a skills expansion course and certificate to allow current officers to become "MID Extension Officers".			
			To establish a MID scholarship fund for education in the green jobs sector.			
C6	MID Planning: To establish a national planning framework for coordination of all economic initiatives to promote a green	To provide the necessary institutional structure to implement the MID initiative.	To implement the proposed institutional arrangement on MID.		Short	Commission on MID

Employment/Economy						
Policy Code	Policy	Proposed Strategy	Action	Link to Concept Plan	Priority	Implementing Agencies
	initiatives to promote a green economy (linked to the overarching policy O1).	To develop national indicators on green economy, green jobs and sustainability to monitor and report progress on green economy and the state of Mauritius' natural assets.	<p>To design, review, select and implement appropriate indicators of national green economic activity.</p> <p>To develop a Sustainability Index to capture the 'value added' aspects of green economy as well as reporting the value of natural assets and environmental risks.</p> <p>To work with others in the international community, especially in SIDSto exchange experience in using indicators.</p>		Medium	
C7	Ocean Economy: To exploit the living and non-living resources of the ocean in a sustainable manner. Concurrently, it is important to protect and restore the health, productivity and resilience of oceans and marine ecosystems, maintain their biodiversity and enable their conservation and sustainable use for present and future generations	<p>To create a comprehensive and robust regulatory and legal framework for the ocean economy.</p> <p>To ensure the sustainable use and management of our ocean resources.</p> <p>To contribute to energy security through marine energy.</p> <p>To support the development of scientific knowledge, research and innovation on ocean economy by strengthening education, capacity building and technology transfer.</p>	<p>To develop a "Mauritius Ocean Act".</p> <p>To promote aquaculture, seaweed industry, coral farming, pearl culture, marine nutraceuticals, pharmaceuticals and biotechnology.</p> <p>To develop an ocean renewable energy Policy. Strategy and Action Plan.</p> <p>To create offshore wind farms.</p> <p>To undertake research on hydrocarbon/mineral mapping, marine hydrodynamics.</p> <p>To enhance maritime surveillance and security.</p> <p>To set up Ocean Technology Incubators.</p>	Ocean Economy	<p>Short</p> <p>Medium</p> <p>Short</p> <p>Medium</p>	<p>Prime Minister's Office</p> <p>Mauritius Research Council</p>

Table 26: Education Policies, Strategies and Actions/Projects

Education						
Policy Code	Policy	Proposed 10-year Strategy	Action	Link to Concept Plan	Priority	Implementing Agencies
D1	Lifelong Learning: To achieve poverty reduction through improved access to lifelong learning and employment opportunities for all groups.	To improve access to education for students of all ages and groups in and out of school.	To implement the recommendations in the green economy concept plan to enhance the MID education system.	Green economy	Short	Commission on MID Ministry of Education and Human Resources Ministry of Tertiary Education, Science, Research and Technology
		To develop and mainstream programs to promote environmental literacy at all levels.				
		To encourage the development of family literacy programs.				
D2	Sustainable Lifestyles: To promote healthy and sustainable lifestyles.	To use education and training/agricultural extension advisors to promote and develop green agricultural practice.	To upskill agricultural extension advisors to promote and develop green agricultural practice through implementing the actions in the Green economy.	Green economy	Short	Ministry of Education and Human Resources Ministry of Tertiary Education, Science, Research and Technology Commission on MID
		To use education and training to raise awareness of and encourage healthy life choices for all age groups.	To include 'quality of life/healthy choices' in the national curriculum.			
			To promote MID literacy by undertaking a public awareness campaign, publicising quality of life/healthy choices'.			
			To implement "Green Campus" project to transform the Reduit University campus into a Green Campus.			
	To develop an incentive regime to reward sustainable agricultural practice.	To consider a Bonus Scheme for good sustainable practice, e.g. financial.		Short	Agricultural Research and Extension Unit	
D3	Natural Disaster and Climate	To develop and implement an action plan	To develop a public awareness campaign.		Medium	Disaster

Education						
Policy Code	Policy	Proposed 10-year Strategy	Action	Link to Concept Plan	Priority	Implementing Agencies
	Change Awareness: Promote critical consciousness with regard to disaster risk reduction, climate change adaptation and mitigation.	on awareness of disaster risk reduction.	To undertake an education sector diagnosis and vulnerability analysis for a disaster risk reduction action plan for the education sector.			Management Centre (PMO) Ministry of Environment and Sustainable Development Ministry of Education and Human Resources Ministry of Tertiary Education, Science, Research and Technology
D4	Access to post-secondary education: Increase access to post-secondary education through multiple pathways.	To promote consistency between formal and non-formal education pathways in mainstream and vocational system.	To implement the actions identified to support the improved qualifications for green jobs.	Green economy	Short	Ministry of Tertiary Education, Science, Research and Technology Commission on MID

Table 27: Equity Policies, Strategies and Actions/Projects

Equity						
Policy Code	Policy	Proposed Strategy	Action	Link to Concept Plan	Priority	Implementing Agencies
E1	Support Vulnerable Groups: To ensure effective support is provided to those most in need.	To promote energy equity through dedicated programmes with respect to disconnection, low-income groups and women participation.	To offer energy efficiency advice and implementation schemes targeted to low-income groups. To consider the use of social tariffs or community energy schemes to reduce the cost of energy to those most in need.	Green economy	Medium	Ministry of Social Integration and Economic Empowerment
		To ensure legislation supporting equity is properly enforced.	To review regulatory system for reporting inequity and make recommended changes.			
		To improve equity of access to public infrastructure.	To review current equity of access to public infrastructure in order to identify the most important access problems.			
E2	Excluded Groups: Through sustainable development and the green economy, to increase resources to alleviate poverty, reduce exclusion and promote social entrepreneurship.	To ensure there is suitable training available, for people moving from usual work into the green economy.	To train MID Extension Officers in line with actions identified in green economy.	Green economy	Short	Commission on MID Ministry of Social Integration and Economic Empowerment
		To review the measure used to define poverty and ensure collection of the appropriate data.	To include definition of poverty in the MID realisation indicators			
		To promote social entrepreneurship in all levels of society.	Through MID Extension Officers,to work with the community in support of social entrepreneurship.			
E3	Institutional and Legislative Framework: To foster an institutional and legislative framework conducive to the promotion of equal opportunities, non-discrimination, gender equality, good governance, women	To improve coordinated access to social services, using a one-stop-shop approach.	To conduct a trial of the one-stop shop approach, on a pilot scale, in order to monitor its effects and assess its costs and benefits. To review the outcome of the trial and implement lessons learnt across Mauritius, with the extent of the adoption of the one-stop-shop approach depending on the costs and benefits revealed.		Medium	Ministry of Social Integration and Economic Empowerment

Equity						
Policy Code	Policy	Proposed Strategy	Action	Link to Concept Plan	Priority	Implementing Agencies
	good governance, women empowerment, maternal health and anti-corruption measures.		To make background checks for all social work professionals mandatory.			
E4	Support Disadvantaged Groups: To continue to provide adequate support for and care to children, youth, women, families, elderly, socially disadvantaged groups and disabled people.	To develop capacity for welfare and protection services for all targeted groups.	To develop guidelines for the required level of capacity. To commission capacity development for a trial area. To roll-out the programme to the whole of the Republic.		Medium	Ministry of Gender Equality, Child Development and Family Welfare Ministry of Social Security, National Solidarity and Reforms Institutions
E5	Transparency Index: To enable a sustained improvement in the Transparency Index of Mauritius, especially with regard to promoting input from all sections of society.	To ensure equity of access to and inclusion in Government processes.	To monitor the level of engagement across all sectors of society and develop action plans for those least engaged.		Medium	Prime Minister's Office Ministry of Social Integration and Economic Empowerment
E6	Individual rights: To ensure that in all sectors of activity the rights of individuals and workers are appropriately protected.	To enforce the Equal Opportunities Act and improve the transparency of employment conditions.	To brief Mauritian employers, starting with the 10 largest ones on the Equal Opportunities Act and the importance of transparency of employment. To develop and implement an information campaign on the Equal Opportunities Act for use in briefing all employers.		Medium	Equal Opportunities Commission
E7	Equal Access to Infrastructure: To provide equal access to high quality health care, leisure, sports, law and order (safety and security and culture).	To continue to improve the inclusivity of welfare facilities in the Republic of Mauritius by identifying vulnerable groups and opportunities for improvement.	To conduct a survey of vulnerable groups to identify the variability in current equity of access to health and leisure infrastructure, in order to identify priority areas for improvement. To design and implement solutions to the issues identified in the survey of vulnerable groups.		Medium	Ministry of Social Integration & Economic Empowerment
E8	Arts and Culture: To ensure access to artistic and cultural infrastructure and activities.	To develop a white paper on arts and culture.	To develop a white paper on arts and culture To include consideration of cultural infrastructure in land use planning guidance		Medium	Ministry of Arts and Culture

Equity						
Policy Code	Policy	Proposed Strategy	Action	Link to Concept Plan	Priority	Implementing Agencies
E9	Healthy Living: Promote healthy living at the individual, family, community and national level.	To promote activities like 'inter générationnelles' meetings, 'Comité des Sages' and 'associations troisième âge'	To develop a Health Observatory and Information Management Centre to carry out research and development for aspects of human health and ensure there is sufficient and appropriate resource capacity.		Long	Prime Minister's Office Ministry of Health and Quality of Life

7. Part Four – Measuring Progress

The most valuable input to the development of policy, strategy and action is the information that guides it. Information is the principal tool for understanding how effective a policy process has been in contributing to the Government objectives and in turn the development of Mauritius.

In order to deliver a comprehensive policy, strategy and action plan, consideration must be given to its implementation and the monitoring of the policy success.

Two mechanisms have been set up to measure the implementation of MID namely, a MID Compliance Process that filters policies, strategies and actions at the conceptual or developmental phase (input); and the MID Realisation Index that monitors the macro-level goals of sustainable development progress (outputs).

7.1 Checking that Future Activities Comply with MID

MID is an all-encompassing concept, which will need to be adopted by all sectors. Some of the commitments required are significant and where they bring change, they may even be considered disruptive.

As Government develops new legislation or implements policies, it will be important to check that those activities support or comply with the aspiration of MID. In this way, the day-to-day work of the Government will in itself contribute to realisation of the MID vision, even before the MID Action Plan is implemented. A MID compliance checklist will be developed to help Ministries check that their proposed activities are in line with MID.

As the MID policies and strategies are adopted through actions, it will be important to check that the benefit is being realised, i.e. that progress is being made towards the MID vision. In the event that actions are not yielding benefits, the actions may be reviewed and amended or re-prioritised.

The MID Compliance Checklist has been developed for use by all Ministries or other agencies to check the compliance of future policies/strategies or action plans with MID policies and strategies.

The compliance check process is based on the international best practice Sustainability Appraisal (SA) process.

7.1.1 MID Compliance Checklist – Process

It will be essential to check that any developing policy, strategy or action plan contributes to MID. The MID Compliance Checklist will be an essential part of the planning and budgeting process of Government. It is based on good practices, Sustainability Appraisal techniques, which are currently used by the UK Government to appraise local development plans.

The aim of the MID Compliance Checklist is to improve the sustainability performance of future Government actions. This will be achieved by influencing the development plan or intervention by considering and testing options against the MID policies and strategies.

Where the proposed Government action is not compliant with MID, then two options exist:

1. Option 1: Make changes to the proposed actions to make them more aligned to meet the requirements of MID.
2. Option 2: Consider why it is strategically important to accept that a non-MID-compliant action is allowed and decide whether this is acceptable or necessary. If it is, then agree that it is an

acceptable activity even though it is not MID compliant. This will involve the Cabinet determining the acceptability of such actions, rather than individual Government agency.

It must be borne in mind that non-compliant actions which are accepted, may reduce the overall MID Realisation Index and will therefore have to be compensated by other actions.

Typical changes that might arise from Option 1 above include the following:

- Changes in components or statements within a policy to enhance or improve sustainability performance of the action plan.
- The removal of components or statements that are not sustainable.
- The addition of new components or statements, including 'protective' statements to avoid the policy, strategy or action being misused to justify wider unsustainable Government action.
- Requirements to substitute or offset for certain types of effects, for instance, through compensation projects that replace any benefits lost through other projects (e.g. a new park near an area of open space that is being developed).

The MID Compliance Check will be integrated into planning at all stages of policy development through to the annual budgeting process. It will provide an evidence base, help in testing the evidence and assist in developing future options.

7.1.2 When would the Compliance Check take place

The MID compliance checks will take place whenever a new policy, strategy or action is planned or submitted for approval. The check will have to be carried out by the host Government Agency and submitted to the Ministry of Finance and Economic Development and to the Prime Minister's Office to demonstrate that it has been completed.

The Prime Minister's Office will review the compliance check. It will comment on its appropriateness and may also suggest remedial actions, for any significant item that cannot demonstrate substantial compliance with MID.

MID compliance checks will be audited annually, to ensure that the process is properly applied and is delivering benefit to the realisation of the MID vision.

7.1.3 Application of the MID Compliance Check process

Any future policy, strategy or action plan will undergo a MID Compliance Check to test the proposed government interventions or action plans against the MID vision, policy and strategies.

To ensure that MID is compatible with international best practice, Government will check any proposed changes to MID against the Rio Principles.

In both cases, a tabular compliance check will be used to test the proposed interventions against the MID objectives, as illustrated below.

Table 258: Example Layout of Compliance Check for New Government Policies, Strategies, and Action Plans

Proposed Intervention	MID Policy		
	Energy Policy 1 Energy plan	Energy Policy 2 Energy efficiency targets	Energy Policy 3 Cleaner transport system
Policy 1 – A 1.1	[Level of compliance]	[Level of compliance]	[Level of compliance]
Policy 2 – A 1.2	[Level of compliance]	[Level of compliance]	[Level of compliance]
Policy 3 – A 1.3	[Level of compliance]	[Level of compliance]	[Level of compliance]
Policy 4 – A 1.4 (etc)	[Level of compliance]	[Level of compliance]	[Level of compliance]

7.1.4 Proposed Compliance Check Criteria

In completing the table, a traffic light system will be used to indicate compliance or non-compliance using the criteria shown below.

Table 29: Compliance Check Criteria

Colour	Meaning
++	Intervention Plan policy directly supports or promotes MID objective
+	Intervention Plan policy indirectly supports or promotes MID objective
	Intervention Plan policy has no direct link to MID objective
-	Intervention Plan policy indirectly contradicts or conflicts with MID objective
--	Intervention Plan policy directly contradicts or conflicts with MID objective
?	Potential links to MID depend on the implementation of the plan objective

Outcomes from the Compliance Check may be positive, neutral, or negative/conflicting. The aim is to achieve consistency between the proposed Government interventions and the MID objectives but this will not always be possible.

Where conflicts between objectives arise, the Government (led by the Prime Minister’s Office) will decide where the priority lies. The final decision and justification should be recorded via formal Government process.

Where there is incompatibility or poor performance, or a conflict between the Government interventions and MID, there will be a need to modify the proposal or to apply actions to improve sustainable development performance. The actions will be recorded via formal Government process.

7.2 The MID Realisation Indicators

The MID Realisation Indicators monitor the progress of the MID initiative towards achieving the MID vision.

The indicators have been selected to support the robust collection of sustainable development data, for publication both as stand-alone indicators recognised within each discipline as well as indicators which when considered together illustrate the progress of MID.

A second function of the MID Realisation Indicators is to maximise the opportunity for international reporting e.g. Mauritian ranking in WAVES.

Communication on the success and progress is a vital part of the reporting process to provide feedback to all those who have been involved by sharing knowledge and best practices with the international community.

7.2.1 Measure – Progress in Achieving Overall Aims

The success of MID will be achieved through Mauritius delivering sustainable economic growth. The ultimate MID measure will therefore be to assess the progress of the Republic in realising the MID vision. It will be independent of the action plan, providing strong feedback on the extent to which the planned actions and other features of MID are delivering benefits. The proposed MID Realisation Indicators are given in Table 30.

Table 30: MID Realisation Indicators

Indicator	Rationale
1. Overarching	
▪ Corruption Index(World bank)	Measures the transparency of governance.
2. Energy	
▪ Energy Consumption Index(ktoe/GDP)	Amount of energy use normalized by GDP.
▪ Carbon Footprint	Total carbon footprint for the Republic. Reflects changes in the energy mix and sustainable energy practice.
3. Environment	
▪ WAVES	Provides a robust accounting system for Mauritian environmental systems.
▪ Ecological Footprint	Reflects progress on Biodiversity.
4. Employment/Economy	
▪ Gross Domestic Product (GDP)	The overall size of the economy (and its level of growth) demonstrates progress towards the economic development goals.
▪ % green jobs	Enables growth of the green economy to be tracked, relative to the overall size of the economy.
5. Education	
▪ MDG (Universal Education) –percentage of children completing primary education.	To ensure access to education for all.
▪ National MID survey	Undertake a national annual to assess MID understanding.
6. Equity	
▪ Gini Coefficient	Measure of income inequality.
▪ MDG (Gender Equality) – percentage of girls vs. boys who complete primary and secondary education	Ensure fair level of education for both girls and boys.

A priority action will be to confirm the applicability of the proposed indicators to be used in developing the MID Realisation Index. A trial check will have to be run to find whether the indicators provide the appropriate level of detail without being too burdensome to compile. The index should be confirmed within the first year of the action plan. The most important features to test are:

- Whether the proposed measures are practicable, being both straightforward to compile and meaningful in the Mauritian context; and
- Whether appropriate resources are available to collate the data.