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Fiscal Policy Scoping Study

Mauritius

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LIST OF ACRONYMS

AFB	Adaptation Fund Board
AfDB	African Development Bank
CFL	Compact fluorescent lamp
EEZ	Exclusive Economic Zone
EFR	Environmental Fiscal Reform
ERCP	Economic Restructuring and Competitiveness Programme
GDP	Gross domestic product
EU	European Union
GEF	Global Environment Facility
GFS	Government Finance Statistics
GHG	Greenhouse gas
GNI	Gross National Income
IMF	International Monetary Fund
Ktoe	Kilotonnes of oil equivalent
LPG	Liquefied petroleum gas
MDGs	Millennium Development Goals
MIC	Middle-income country
MID	Maurice Île Durable
MIDPSAP	Maurice Île Durable (MID) Policy, Strategy and Action Plan
MPA	Marine Protected Area
MRA	Mauritius Revenue Authority
MSI	Mauritius Strategy for Implementation
MUR	Mauritian Rupees
OECD	Organisation for Economic Co-operation and Development
PAYT	Pay-as-you-throw
PDM	Public Debt Management
PPP	Public-Private Partnership
SIDS	Small Island Developing States
SPP	Sustainable Public Procurement
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
UNEP	United Nations Environment Programme
US$	U.S. Dollars
VAT	Value-added Tax
WEF	World Economic Forum
WEO	World Economic Outlook
WTO	World Trade Organization

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EUROPEAN UNION

EXECUTIVE SUMMARY

In 2008, the government of Mauritius elaborated an ambitious development vision, Maurice Île Durable (MID), which aims to steer the country towards a sustainable development path by promoting green economy activities through fiscal and other measures. The government also developed a Green Paper called "Towards a National Policy for a Sustainable Mauritius", which articulates its policy goals related to the MID and sustainability in general. Environmental fiscal reform (EFR), which includes taxation and pricing measures that can raise fiscal revenues while furthering environmental goals, is a potentially powerful tool for achieving Mauritius' MID vision.

This report provides an overview of the current fiscal framework in Mauritius and identifies potential areas where additional fiscal measures can be put in place for green economy activities. It also provides some policy options for EFR for the government to consider in order to green key sectors and to create income and employment generation opportunities.

A middle-income country, Mauritius has enjoyed robust economic growth, high levels of human development, prudent fiscal, exchange rate, trade, investment and monetary policies, and solid policy planning overall. Mauritius has significant and strategic natural wealth in terms of fisheries, forests, biodiversity and aesthetic landscapes, and has made laudable efforts to conserve its natural resources and meet its Millennium Development Goals (MDGs) related to the environment. However, it is dependent on imported fossil fuel for its energy needs and is therefore exposed to global fuel price shocks. Also, as a small-island developing state, Mauritius is vulnerable to the impacts of climate change, including receding coastal zones, rising sea levels and potential flooding.

Mauritius has a relatively sound fiscal position, which offers it a foundation for realizing a green economy transformation. The country has historically a fiscal deficit of between 3 and 6 per cent of GDP, but it has stabilized since the financial crisis of 2007-2008 and is expected to reach 3.7 per cent of GDP in 2013 and 3.2 per cent in 2014. Debt, at 56.1 per cent of GDP as of September 2014, is considered to be sustainable. Moreover, inflation, at less than 4 per cent in 2012, is not of significant concern.

Government revenues are derived mainly from taxation (82 per cent) and the amount of revenues collected has tripled between 2001 and 2011. Moreover, the share of tax revenue as a percentage of GDP, at approximately 25 per cent in 2013, is comparable to tax levels in OECD countries. There have been efforts to "green" the budget and green economy considerations have been included in budget documents since 2009. Moreover, the government implemented a number of changes to the tax system as part of overall structural reforms in 2006, including exempting repatriation of dividends and capital from taxes and introducing a single tax rate of 15 per cent for corporate tax, income tax and VAT. However, there is room for reforming general taxes and fees to increase government revenues.

Mauritius has undertaken a number of environmental fiscal measures and has reallocated the public budget to create the enabling conditions for a green economy transformation. Government expenditure for the environment is undertaken through a number of programs, with the bulk (50 per cent) going to wastewater management, waste management (26 per cent) and environmental protection (10 per cent). Overall, the government allocated 0.65 per cent of GDP to environmental programs. Moreover, Mauritius has a fairly robust system of environmental taxes and charges in place, which provide total revenue of MUR 8.427 billion (US$270 million) or 2.6 per cent of GDP. A number of vehicle taxes make up a large part (37 per cent) of environmental taxes' contribution to overall revenue, followed by a petroleum product excise duty (34 per cent), a road tax (11 per cent)

and others. The taxes can help discourage the consumption of environmentally harmful products and services; penalize pollutant fuels and energy products; and promote environmental conservation. There is also a Corporate Social Responsibility (CSR) Levy which requires companies to pay a 2 per cent levy on their corporate profits for environmental and social purposes, and has generated MUR 123.6 million (US$4 million) to date.

In addition to taxes, the government has put in place a number of subsidies with implications for the environment, such as the liquefied petroleum gas (LPG) subsidy and the Power Services subsidy, amounting to MUR 1.971 billion (US$60 million) in 2013, or 0.6 per cent of GDP. The government is attempting to reduce or eliminate perverse subsidies to fossil fuels. This will include a review of the LPG subsidy offered to low-income households, with the intent of replacing it with incentives and support for lowering these households' energy costs.

This report proposes and assesses a number of policy options that the government of Mauritius could consider in different sectors to enhance current environmental fiscal measures and to exploit untapped opportunities for EFR. The policy options are summarized below.

In agriculture, fisheries and forestry:

— Introduce a tax on chemical fertilizers, pesticides and/ or insecticides to encourage a shift to more benign organic products;
— Extend the current VAT refund on equipment for sugar cane planters to cover ecological inputs, such as organic fertilizers, pesticides and insecticides, in order to reduce the negative impact of chemical products on soil degradation and water pollution;
— Create fiscal incentives to reduce mono-cropping such as a small levy on agricultural products produced as mono-crops;
— Implement the proposed Fisheries National Sustainable Development Fund and use revenues to support fishing communities; and
— Strengthen the collection of penalties for off-licence forestry activities.

In the energy sector

— Consider volumetric electricity tariffs for commercial and industrial users;
— Review subsidies to Rodrigues island for electricity, cement, LPG and petroleum products; and
— Implement carbon pricing, either via a tax on emissions or on the carbon content of fuels.

In the water sector:

— Institute volumetric water charging for the commercial and industrial sectors, potentially with offsetting revenue recycling mechanisms;
— Charge industry for effluent discharge and put in place efficient monitoring mechanisms; and
— Introduce a groundwater abstraction charge for agricultural producers to ensure sustainable water resource management.

In the solid waste sector

— Extend the coverage of the charge on plastic bags to cover plastic bags without handles. Increase the charge in order to significantly decrease plastic bag use;
— Institute fees for collection and disposal of hazardous wastes; and
— Run waste services on a cost-recovery basis using a pay-as-you-throw model.

In the transport sector:

— Use taxation to raise the relative price of diesel with respect to gasoline, as diesel contributes more to GHG emissions than gasoline;
— Explore raising the already-existing taxes and charges on large engine vehicles; and
— Consider congestion charging as a means to reduce traffic and pollution in urban areas.

The macroeconomic environment – characterized by robust GDP growth, strong revenue flows and sound fiscal and monetary policy – is propitious for government to act on the policy options at its disposal for creating fiscal space for green economy and for stimulating green investment. However, experience with EFR suggests that policies designed for longer-term benefits can have negative short-term impacts. It is therefore essential that mitigation measures are taken to protect vulnerable groups from the adverse impacts of reform.

INTRODUCTION

In its path-breaking report, "Towards a Green Economy", the United Nations Environment Programme (UNEP) posited that shifting public and private investment (of 2 per cent of global GDP) to low-carbon, resource-efficient and socially inclusive sectors and activities could change the course of economic and human development towards a "green economy". UNEP defines a green economy as one that results in "improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities" (UNEP, 2011).

A forthcoming Green Economy Assessment Report of Mauritius, commissioned by UNEP with the Maurice Île Durable Commission, finds that the greatest potential for developing a green economy in Mauritius lies firstly in natural capital conservation, which can both maintain ecosystem services and enhance sectors such as agriculture, water and tourism that are reliant on natural resources. The second source of potential for a green economy in Mauritius is in improving resource efficiency in the industrial and services sectors. Modelling results undertaken in the forthcoming UNEP report show that green investment in seven key sectors would lead to better economic outcomes compared to business-as-usual (BAU) investment allocation. For instance, green investment is projected to lead to 6 per cent higher GDP compared to BAU by 2035 (UNEP, Green Economy Assessment of Mauritius, forthcoming).

Fiscal policy is one of the most important elements of an enabling environment for the green economy. It consists of five broad sets of measures: i) environmental tax reforms and instruments such as carbon taxes; charges and levies to discourage environmentally hazardous practices, such as pollution charges and levies on plastic bags; subsidies, grants and subsidized loans to reward environmental performance; reform perverse incentives, such as by removing environmentally harmful subsidies; and direct public expenditure to low-carbon infrastructure (UNEP, 2011). Because fiscal policy instruments affect pricing – through taxation and subsidies – they can impact investment decisions and consumption patterns, thereby facilitating a shift to the green economy.

This report describes the current status of fiscal policy in Mauritius, with the aim of identifying potential fiscal space for green economy initiatives, thereby supporting the transition to a more sustainable and inclusive economy. Based on the analysis of the fiscal status of the country, the report assesses a variety of reform opportunities, including the restructuring of taxes and incentives across key sectors to support the development of green businesses and the creation of income and employment opportunities.

The report is organized so as to provide a comprehensive assessment of current fiscal trends and challenges in Mauritius, followed by an analysis of potential opportunities for environmental fiscal reform (EFR). Specifically, Section 1 sets out the relevant country background, including an overview of economic, social and environmental trends, and the status of green economy initiatives in the country. Section 2 presents an overview of the current fiscal status, providing details on government expenditures and revenues. Section 3 describes the current policy context, by sector, to support a green economy transformation in Mauritius and offer policy options that could be implemented in each of the key sectors identified. Finally, Section 4 provides a conclusion and suggests some further areas for reflection and research.

1 COUNTRY BACKGROUND

1.1 SOCIOECONOMIC PROFILE

The population of Mauritius is approximately 1.29 million and growing at an estimated rate of 0.5 per cent per year. The country is expected to face an aging population in the coming years, with the population over the age of 60 increasing from 9 per cent in 2000 to 23 per cent by 2040 (Mauritius Ministry of Environment and Sustainable Development, 2013).

Since its independence in 1968, the country has developed from a low-income, agriculture-dependent economy to a middle-income diversified economy with growing industrial, financial and tourist sectors. As seen in Figure 1, from 1981 to 1995 growth was over 10 per cent and from 1996 to date, it has fluctuated between 5 and 15 per cent. This remarkable rate of sustained growth has led to more equitable income distribution, increased life expectancy, lower infant mortality and robust infrastructure (Statistics Mauritius, 2013; KPMG, 2012). However, Mauritius's relatively equitable income distribution has grown more unequal in recent years, with the Gini coefficient rising from 0.388 in 2006/2007 to 0.413 in 2012 (Statistics Mauritius, 2012).

The country's strong growth and socioeconomic development has been attributed to its prudent fiscal, exchange rate, trade, investment and monetary policies, and careful policy choices (Zafar, 2011). Robust historic levels of GDP growth and stable political institutions have helped Mauritius attain middle-income country (MIC) status according to the World Bank's classification scheme. Also according to the World Economic Forum (WEF), Mauritius has recently overtaken South Africa as the most competitive economy in Sub-Saharan Africa (WEF, 2013).

In its history, the country has seen a shift from an agriculture-based economy to one more rooted in manufacturing, with the two sectors respectively contributing 3.7 per cent and 17.7 per cent of GDP, and 7.9 per cent and 20.1 per cent to employment

FIGURE 1 NOMINAL GDP AND GDP GROWTH RATES

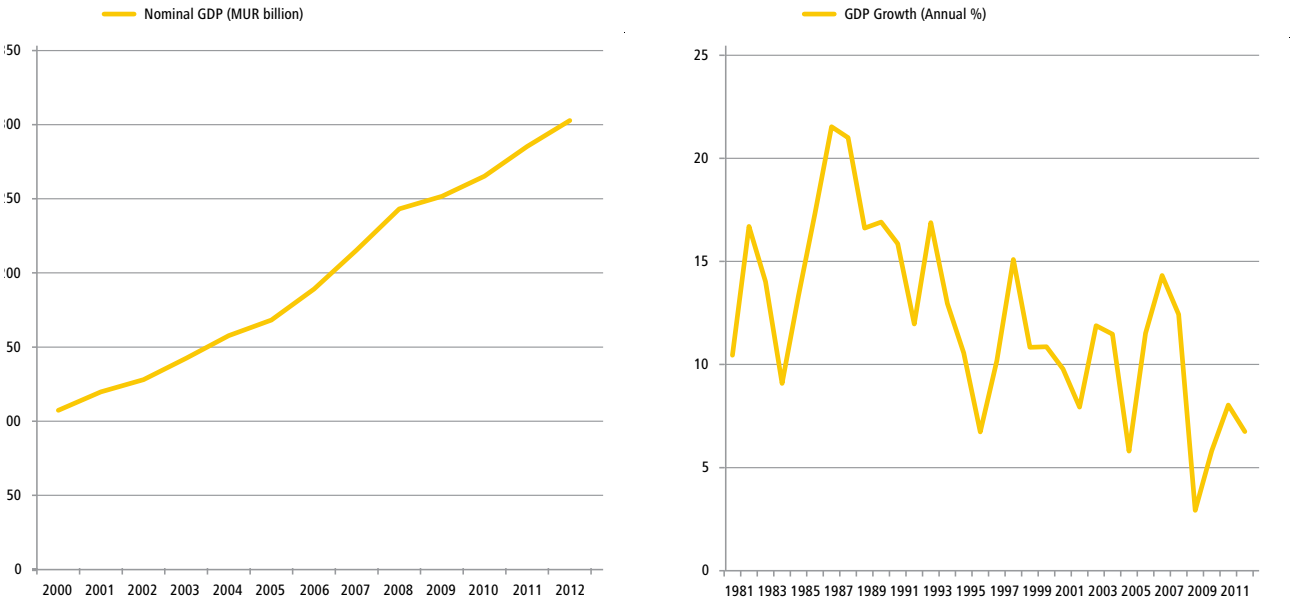
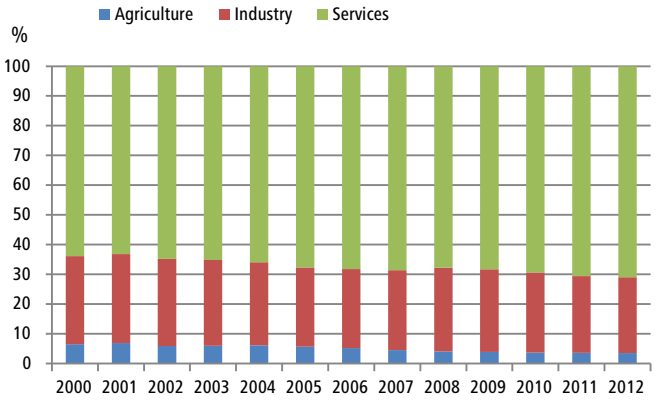


FIGURE 2 GDP COMPOSITION BY SECTOR



in 2011 (Mauritius Ministry of Environment and Sustainable Development, 2013). A transition to service sectors such as tourism and financial services has been occurring in the country's modern history, and they now contribute 70 per cent of GDP as seen in Figure 2. The country is also expanding into fish processing, information and communications technology, and hospitality and property development (KPMG, 2012; Bertelsmann Stiftung, 2012). While the economy has demonstrated strong resilience in the face of significant economic shocks (Zafar, 2011), vulnerabilities remain nonetheless. Notably, a lack of significant mineral or fossil fuel resources exposes the country to global shocks linked to fossil fuel price volatility (Mauritius Ministry of Environment and Sustainable Development, 2013).

Mauritius has a comprehensive social safety net, including free health care for children, a universal system of non-contributory pensions for the elderly, the disabled and widows, contributory pension schemes for public and private employees, government subsidies on food (rice and flour) and housing (for lower-income groups), free education and health services for all, and free transport for the elderly and students (AfDB, OECD, UNDP, & UNECA, 2012). Because of this support and the country's general economic and developmental success, Mauritius ranks relatively well on the Human Development Index at 0.745 for 2012, compared to the average of 0.475 for Sub-Saharan Africa.

Unemployment is not particularly high in the country, at between 7 and 9 per cent since 2006, and and 7.8 per cent as of the second quarter of 2014 (Statistics Mauritius, 2014). However, youth unemployment is a significant concern, having reached 24.4 per cent in 2013 – approximately three times as high as the national level (AfDB, OECD, UNDP, & UNECA, 2012; Mauritius, 2014). The problem of youth unemployment is more pronounced in the female youth population, for which unemployment is 26 per cent, compared to 19.2 per cent for its male counterpart.

In terms of poverty levels, the country has made major strides. According to government figures, less than 1 per cent of the country's population lives on less than US$1/day. Poverty is, however, more prominent on Rodrigues Island, which has a largely subsistence economy and where female labour force participation, at 38 per cent, is low (AfDB, OECD, UNDP & UNECA, 2012).

1.2 ENVIRONMENTAL PROFILE

As stated above, Mauritius has limited natural resources in terms of fossil fuels and minerals. However, the country enjoys significant natural wealth with respect to its fisheries, forests, biodiversity and overall natural beauty.

Environmental management and protection is relatively strong: as of 2008, Mauritius' natural-resource depletion as a proportion of gross national income (GNI) was negligible and its Environmental Performance Index score of 80.6 per cent in 2010 was higher than the average for any of the development categories (Yale, 2014). While Mauritius has been praised for clear regulations and institutional support for the environment, a recent assessment of the country's progress on the MDGs found that there had been a worsening situation with regards to indicators of environmental protection. On the one hand, Mauritius has achieved the goal of integrating the principles of sustainable development into national policies and programs and that of halving the proportion of people without access to safe drinking water and

TABLE 1 ENVIRONMENTAL INDICATORS FOR MAURITIUS

Indicator	Units	2003	2012[1]
1 Forest area	ha	56 608	47 143
2 Total forest area as a % of total land area	%	28.7	23.9
3 Irrigated land	ha	21 619	19 459
4 Land Protected Area	ha	13 973	14 879
5 Marine Protected Area	ha	7 216	7 216
6 Threatened plant species (NPCS)[2]	%	…	88
7 Threatened animal species (NPCS)[2]	%	…	89
8 Total fish catch	tons	9 709	4 393
9 Mean catch per fisherman day	kg	4.3	5.9
10 Total carbon dioxide emission	Gg	2 783.5	3 745.1
11 Per capita carbon dioxide emission	tons	2.3	2.9
12 Mean annual rainfall	millimetres	1 973	1 621
13 Annual fresh water abstraction	Mm^3	725	582
14 Daily per capita domestic water consumption	litres	166	160
15 Daily per capita solid waste disposed at landfill	kg	0.86	0.85
16 Total electricity generated	GWh	2 082	2 796
17 Electricity generated from renewable sources	%	27.2	20.7
18 Total primary energy requirement	ktoe	1 222.8	1 458.8
19 Primary energy requirement from renewable sources	%	21.8	15.2
20 Per capita primary energy requirement	toe	1.0	1.1
21 Per capita final energy consumption	toe	0.67	0.69
22 Energy intensity	toe per MUR 100 000 GDP at 2000 prices	0.9	0.76

Source: Mauritius Ministry of Environment and Sustainable Development, 2013.
[1] Provisional
[2] National Parks and Conservation Service

sanitation (Government of Mauritius, 2013). On the other hand, it is struggling to achieve the goal of reducing the loss of biodiversity, such as by reducing the number of species threatened with extinction. In addition, the proportion of land area covered by forests has decreased from around 30.4 per cent in 2002 to 23.9 per cent in 2012 (Government of Mauritius, 2013). Another environmental challenge is the increase in per capita GHG emissions in the period between 2002 and 2011, driven mainly by an increase in the consumption of fossil fuels (Government of Mauritius, 2013). Emissions were highest in the electricity sector, which accounted for 60.6 per cent of the country's total GHG emissions in 2011 (Government of Mauritius, 2013). Also, the government plans to significantly expand the tourism industry over the next decade, which may put some of Mauritius`s natural wealth at risk. For example, many coral reefs close to the country's beaches have already died and the increasing number of beach hotels will likely accelerate this process. Table 1 provides an overview of relevant environmental indicators for the country and underscores the country's improvements to its energy efficiency, as well as trends in increasing deforestation and increasing GHG emissions.

1.3 GREEN ECONOMY INITIATIVES

The government of Mauritius is actively responding to the need for the establishment of sound policy and regulatory measures that could enable a green economy transformation. At the national level, strong political will and commitment exists to advance the country on the path of inclusive and green growth. This intention is reflected in the country's development vision, Maurice Île Durable (MID).

The objective of MID is the "pursuit of sustainable development by all sectors, groups and individuals in the Republic of Mauritius" (Mauritius Ministry of Environment and Sustainable Development, 2013). The initiative was announced in 2008 and has its roots in the government's recognition of the need to respond to the global energy crisis of 2007. But the scope of the MID has grown beyond its initial conception to incorporate the aims of:

— Respecting the limitations of natural resources;
— Empowering the country's population to grasp the opportunities represented by a green economy; and
— Distributing wealth equitably (Mauritius Ministry of Environment and Sustainable Development, 2013).

The goal of empowerment is seen as important and the MID process has been broadly participatory, attempting to embody the aspirations of the society at large in order to create a strong sense of belonging and ownership. The aims of the MID are also taken seriously in the policy-making process: since the onset of the MID initiative in 2008, annual budget exercises have been coupled with firm public policy decisions that have provided the impetus for actively realizing sustainability goals and the transformation towards a green economy. Moreover, green economy considerations have entered budget documents since 2009 (Government of Mauritius, 2012c).

Green economy principles are central to the MID strategy and the country recognizes the green economy as an opportunity to "leapfrog in its sustainable development pathway" (Mauritius Ministry of Environment and Sustainable Development, 2013). It recognizes the Polluter Pays Principle as a guiding principle and identifies the need to increase the share of 'green jobs' and to shift employment patterns towards economic activities that have low carbon inputs per unit of value added. It also recognizes the need to explicitly define targets for policy sectors and areas such as renewable energy, sustainable agriculture, fisheries, waste, manufacturing, buildings and ecotourism; as well as to use the promotion of sustainable consumption and production patterns as a lever to accelerate a green economy transformation.

While the MID recognizes the potential that the green economy presents in terms of transforming environmental and social challenges into business and employment opportunities, it is also cognizant of the challenges and difficulties associated with doing so. It states that the challenge in the successful pursuit of MID's aims is to "identify opportunities (and) 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" (Mauritius Ministry of Environment and Sustainable Development, 2013). Lack of resources and capacity (e.g. capital, technology and expertise) is seen as a major potential barrier to the realization of green economy goals. In response to this, the MID identifies the imperative of accessing external sources of funding and overseas development assistance to help the country build the capacities necessary to achieve its goals.

Some relevant major projects proposed under the MID umbrella include the following:

— **Energy:** Improve energy conservation by setting up the Utility Regulation Authority (energy regulator) and the New Renewable Energy Procurement Framework, Master Plan and deployment plan, and increase energy efficiency and the share of renewables;

TABLE 2 GREEN ECONOMY RELEVANT ENVIRONMENTAL POLICIES AND STRATEGIES

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

— **Cleaner, Greener, Pollution-free Mauritius:** Strengthen ongoing work, focusing on waste minimization and waste treatment technologies, environment protection and biodiversity conservation;
— **Developing the Green Economy:** Bring together a range of actions to help stimulate demand and supply in the green economy; and
— **Sustainable Development of the Ocean Economy:** Ensure that the ocean economy is being developed in a sustainable manner for the benefit of all in order to maximize the opportunities it represents for the country (Mauritius Ministry of Environment and Sustainable Development, 2013).

Since 2009, over 125 sustainable projects have been proposed to government for implementation and 29 sustainability projects have been completed so far in wind turbines, solar water heaters and geothermal

power,[1] although the exploitation of geothermal power has not been positive so far. These projects are funded through the MID fund.

The MID process builds on a strong set of previous and ongoing environmentally-relevant strategies, policies and initiatives, as outlined in Table 2. These include key policies and strategies like the 2006 National Forest Policy; the 2006-2015 National Biodiversity Strategy and Action Plan; the 2007 National Environment Policy; the 2008-2015 Blueprint for a Sustainable Diversified Agri-Food Strategy for Mauritius; the 2009-2025 Long Term Energy Strategy; the 2011 Integrated Coastal Zone Management Framework; the 2011-2015 Solid Waste Management Strategy; the 2011-2021 Fisheries Master Plan; and the 2013 National Climate Change Adaptation Policy.

In addition to these various initiatives and strategies, in 2011 the government prepared a Green Paper entitled "Towards a National Policy for a Sustainable Mauritius" in order to clearly articulate its policy goals related to the MID and sustainability in general. A complementary initiative to the MID, the National Programme on Sustainable Consumption and Production for Mauritius (Government of Mauritius, 2012c), was launched in 2010, aiming to green the economy via a number of projects focusing 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 (Mauritius Ministry of Environment and Sustainable Development, 2013). Additionally, a Sustainability Index is being developed in the country to reflect the performance of the most sustainable companies trading on the Stock Exchange of Mauritius (Government of Mauritius, 2012b), and the government has instituted a national action plan on Sustainable Public Procurement (SPP). The government through the MID has also launched an Eco-Labelling project in hotels, which consists of an eco-classification of hotels based on criteria such as energy efficiency, environmental protection and best practices in hotel management. However, a planned project of setting up nine Eco-Villages intended to demonstrate new ways of life conducive to environmental protection, has been put in abeyance. (Government of Mauritius, 2012b).

Finally, the country is one of the signatories to (and the namesake of) the 30-page Mauritius Strategy for Implementation (MSI) for the Sustainable Development of Small Island Developing States (SIDS) adopted by delegates at the conclusion of the 2005 Mauritius International Meeting. The document describes the overarching concerns in the pursuit of sustainable development goals in SIDS and addresses issues such as South-South and SIDS-SIDS cooperation, culture, the role of youth and gender equality. It also examines green economy relevant thematic areas, such as climate change and sea-level rise; natural and environmental disasters; management of wastes; sustainable capacity development and education for sustainable development; sustainable consumption and production; and coastal, marine, freshwater, land, energy and biodiversity resources (UNESCO, 2005).

2 FISCAL POLICY OVERVIEW

This section gives an overview of the current fiscal status in Mauritius, including an analysis of recent trends in public revenue mobilization and expenditure. First of all, the overall fiscal status of Mauritius is briefly analyzed, including an analysis of GDP growth, debt, deficit and inflation trends. This is followed by an analysis of recent revenue trends and fiscal policies adopted in Mauritius. Finally, public expenditure is analyzed, including current environment related expenditure in the country.

The overall objective of this section is to facilitate the identification of potential opportunities to enhance fiscal space in Mauritius and create room for investments and policies that could enable a green economy transformation. In particular, attention is paid to environmentally related taxes, as well as existing capital investments and fiscal incentives/ disincentives that could influence the development of green sectors.

2.1 FISCAL STATUS

In terms of its fiscal position, as seen in Figure 3, Mauritius has carried a deficit for over a decade but it has not been particularly large, at between 3 per cent and 6 per cent of GDP, and was decreasing noticeably until 2008. It was at this point – and as a response to the 2008 economic crisis – that the government took an expansionary fiscal stance, an orientation made possible by the buildup of reserves in the early 2000s (Zafar, 2011). The deficit increased as a result but has more or less stabilized since 2008. The government expects a deficit of 3.7 per cent of GDP for 2013, much higher than its budget forecast of 2.2 per cent. However, it expects that strong economic growth will return it to 3.2 per cent in 2014.

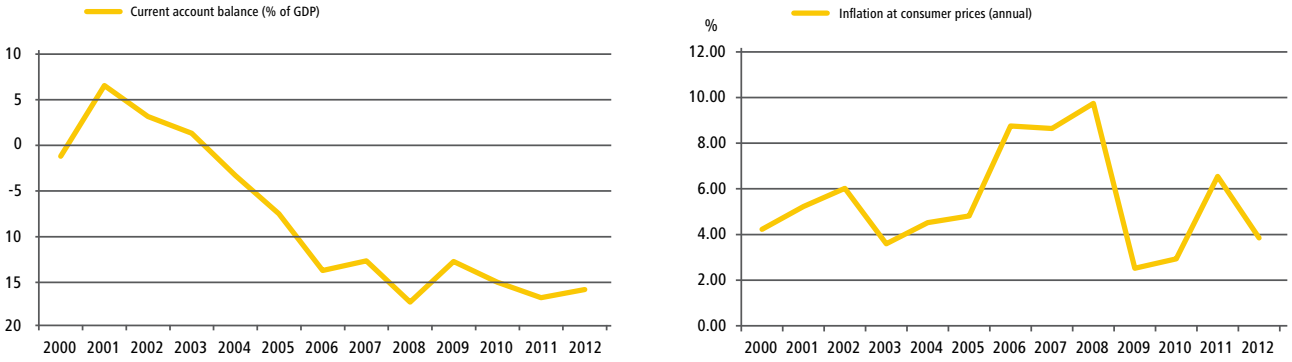
Despite the government's expansionary fiscal stance, the country's debt, at approximately 57 per cent in 2012 as seen in Figure 3, is considered to be sustainable by AfDB, OECD, UNDP and UNECA, and within the 2008 Public Debt Management (PDM) Act ceiling (AfDB, OECD, UNDP, & UNECA, 2012).

The government has been pursuing structural reforms since 2006, which have remained largely on course despite its expansionary program. An IMF assessment found that central government budget credibility in the country is strong (IMF, 2011) and the World Bank

FIGURE 3 BUDGET DEFICIT AND GROSS DOMESTIC DEBT

Source: World Bank, World Economic Outlook (WEO) database (Accessed 17 November 2013).

FIGURE 4 CURRENT ACCOUNT BALANCE AND INFLATION RATE



Source: World Bank, World Economic Outlook (WEO) database (Accessed 17 November 2013).

TABLE 3 MACROECONOMIC FIGURES OF MAURITIUS, 1990, 2000-2013 (IN CURRENT PRICES)

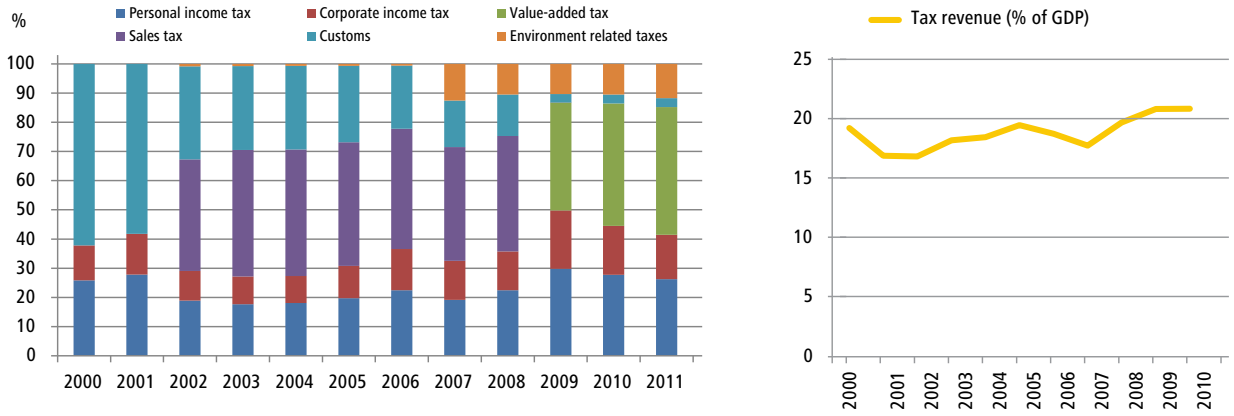
Year	TOTAL BUDGET REVENUE		TOTAL BUDGET EXPENDITURE		GDP**	BUDGET DEFICIT (-) / SURPLUS (+)		PUBLIC GROSS DEBT		INFLATION
	a) Million US$[2]	b) % of GDP	a) Million US$	b) % of GDP	Million US$	a) billion US$	b) % of GDP	a) Million US$	b) % of GDP	% change (average consumer prices)
1990	272.6*	25.48	238.0*	22.25	1 070.0	1.0674	3.23	208.6***	19.50	10.08
2000	748.4	21.53	932.9	26.83	3 476.7	-5.697	-5.31	1 796.2	51.66	4.23
2001	777.1	20.03	1 031.8	26.59	3 880.1	-7.863	-6.56	1 950.4	50.27	5.22
2002	900.0	21.71	1 157.7	27.92	4 146.3	-7.955	-6.22	2 468.4	59.53	6.02
2003	1 036.2	22.45	1 304.1	28.25	4 615.7	-8.271	-5.80	3 107.2	67.32	3.59
2004	1 129.4	22.10	1 398.6	27.37	5 109.7	-8.312	-5.27	3 029.6	59.29	4.52
2005	1 219.1	22.37	1 510.6	27.72	5 449.2	-8.996	-5.35	3 318.9	60.91	4.81
2006	1 318.2	21.52	1 621.4	26.47	6 126.5	-9.36	-4.95	3 527.3	57.57	8.75
2007	1 545.0	22.14	1 803.7	25.84	6 979.3	-7.986	-3.71	3 737.3	53.55	8.64
2008	1 869.7	23.74	2 118.2	26.90	7 875.5	-7.669	-3.15	3 907.5	49.62	9.74
2009	2 082.6	25.55	2 409.0	29.56	8 150.8	-10.07	-4.00	4 631.9	56.83	2.52
2010	2 121.1	24.69	2 431.1	28.30	8 591.4	-9.57	-3.61	4 897.3	57.00	2.93
2011	2 242.4	24.27	2 577.6	27.90	9 239.6	-10.34	-3.63	5 329.0	57.68	6.54
2012	2 389.8	24.37	2 595.2	26.47	9 805.9	-6.342	-2.10	5 613.0	57.24	3.85
2013[a]	2 682.1	25.31	2 908.7	27.45	10 598.1	-6.995	-2.14	6 119.2	57.74	5.66

[a] *Planned/projected*
Source: World Bank, World Economic Outlook (WEO) database (Accessed 17 November 2013).
**Source: International Monetary Fund, Government Finance Statistics (GFS) database (Accessed 14 November 2013).*
***Source: Statistics Mauritius, Historical Series National Accounts: Year 1976-1998, Year 1999-2010 and Year 2007-2013 (Accessed 1 November 2013).*
****Source: Abbas, S.M. & Christensen, J.E. (2007). The Role of Domestic Debt Markets in Economic Growth: An Empirical Investigation for Low-income Countries. and Emerging Markets. IMF Working Paper (figure provided is average for 1987-1995).*

has evaluated its overall fiscal discipline favourably (Zafar, 2011). Through its Economic Restructuring and Competitiveness Programme (ERCP) for the 2010-15 period, the country is managing to balance its medium-term economic growth and diversification strategy with short-term fiscal-policy response measures (AfDB, OECD, UNDP & UNECA, 2012).

Analyzing the inflation rate for the period 1990 to 2013, double digit inflation occurred only in 1990 and 1993. From 1995 to 2005, the inflation rate was rather stable, ranging from 4 per cent to 7 per cent. From 2005 to 2008, inflation increased to between 9 per cent and 10 per cent. This was due to structural reforms in the country, coupled with the rise in global

FIGURE 5 TAX REVENUE, EXPRESSED BY TYPE AS PER CENT OF TOTAL TAX REVENUE[3] (LEFT), AND AS PER CENT OF GDP (RIGHT)



Source: World Bank, World Economic Outlook (WEO) database (Accessed 17 November 2013); International Monetary Fund, Government Finance Statistics (GFS) database (Accessed 14 November 2013); Statistics Mauritius, National Accounts (Accessed 1 November 2013).

food and petroleum prices. The country's current account balance has been negative since 2004, as seen in Figure 4. Table 3 provides a general overview of the country's macroeconomic and fiscal context. As can be seen in the table, while expenditure has fluctuated around 26 per cent to 29 per cent of GDP in the past decade, revenues have climbed more or less steadily from approximately 21 to 25 per cent of GDP.

The need to raise revenues above the level of expenditures is apparent, but the long-term upward trend in revenues relative to the more or less stable level of expenditure indicates that the fiscal situation is generally stable in the country.

2.2 GOVERNMENT REVENUES

Government revenue in Mauritius is collected by the Mauritius Revenue Authority (MRA), which collects approximately 91 per cent of government revenue and administers various revenue laws including the income tax, corporate tax, Value Added Tax (VAT), customs and excise, gaming tax and billboard tax (Rambaksh & Hussen, 2013). The country's tax laws and regulations are considered by the IMF to be of generally high quality (IMF, 2011).

Total revenues collected by the government of Mauritius have increased at a remarkable pace over the last decade, more than tripling from MUR 22.63 billion (US$740 million) in 2001 to MUR 78,224 billion (US$2.4 billion) in 2013 and an estimated MUR 86,270 billion (US$2.7 billion) in 2014 (World Bank, 2014).

As seen in Figure 5, the greater share of government revenues is provided by taxes on income, a small but increasing share of environmentally related taxes and fees, and on VAT, a tax which has replaced the bulk of goods and services taxes since 2009. A minor part is collected from non-tax revenue sources, such as fees, dividends, interest and grants.

When considering only tax revenues, it is worth noting that taxation with respect to GDP grew in recent years, going from 17.7 per cent of GDP in 2007 to more than 20.8 per cent of GDP in 2010 (see Figure 5). This trend is likely attributable to the country's structural reforms instituted in 2006, notably a significant reform of the tax incentive structure (Rambaksh & Hussen, 2013). These reforms have remarkably simplified the tax system. Since (and in some cases before) the institution of these reforms: a new single tax rate of 15 per cent was introduced for the corporate tax, income tax and VAT; dividends are tax free; there is no capital gains tax; repatriation of profits, dividends and capital are not taxed; there are no estate, wealth or inheritance taxes; and there is no exchange control. A number of exemptions, deductions

TABLE 4 TAX RATES RESULTING FROM 2006 STRUCTURAL REFORMS

TAX TYPE	RATE (%)
Personal Income Tax	15
Corporate Tax	15
VAT	15
TDS (Tax Deduction at Source)	0.75 to 15
Corporate Social Responsibility – CSR Levy	2
Capital Gain Tax	Nil
Levy on banks & Telecoms	2
EPF (Environment Protection Fee)	5

Source: Rambaksh & Hussen, 2013.

TABLE 5 TAX REVENUE BY MAIN REVENUE SOURCE, 1990, 2000-2011 (IN CURRENT PRICES, US$ MILLIONS)

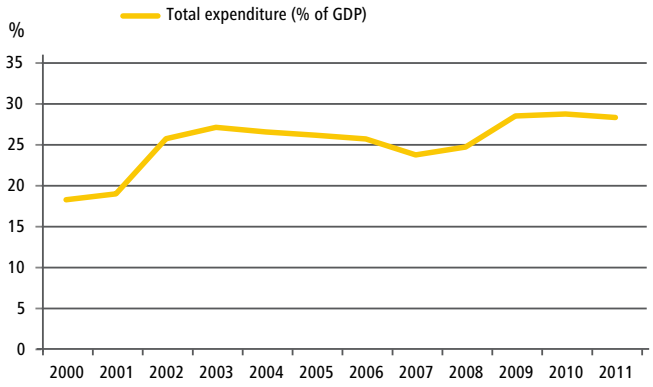
YEAR	PERSONAL INCOME TAX (PIT)	VALUE ADDED TAX (VAT)	SALES TAXES	CUSTOMS	ENVIRONMENTALLY RELATED TAXES*	OTHER	TOTAL TAX REVENUE
1990	61.5	0.0	0.0	120.0	0.0	91.1	272.6
2000	136.8	0.0	0.0	224.7	0.0	380.8	742.2
2001	147.7	0.0	0.0	205.7	0.0	379.8	733.2
2002	173.9	0.0	228.5	190.9	5.1	214.8	813.1
2003	199.8	0.0	317.9	211.3	5.5	240.5	974.9
2004	229.2	0.0	362.5	239.2	6.2	248.9	1 086.0
2005	294.9	0.0	405.9	250.4	6.8	196.4	1 154.4
2006	394.2	0.0	444.1	233.1	7.0	184.8	1 263.3
2007	417.3	0.0	501.1	204.1	161.7	81.0	1 365.1
2008	544.0	0.0	600.6	215.3	159.8	203.5	1 723.3
2009	827.8	614.8	0.0	48.6	172.3	388.4	2 051.9
2010	725.8	683.3	0.0	49.4	171.5	529.8	2 159.8
2011	695.4	735.8	0.0	50.5	197.5	563.5	2 242.4*

Source: International Monetary Fund, Government Finance Statistics (GFS) database (Accessed 14 November 2013).
**Source: World Bank, World Economic Outlook (WEO) database (Accessed 17 November 2013).*
***Source: Ministry of Finance and Economic Development, National Budgets. Environmentally related taxes calculated as the sum of the Environment Protection Fee; the Motor Vehicles and Motorcycles Excise Duty; the Petroleum Product Excise Duty (including MID levy); the PET Bottles and Other Plastic Products Excise Duty; Shooting and Fishing Leases; Reimbursement towards Cost of National Parks and Conservation Service; Permits/Fees to Operate in Marine Protected Areas; the Energy Inefficient Products levies; and Fishing Access Right fees.*

and allowances have also been eliminated. Table 4 provides an overview of some relevant taxes stemming from these reforms. The 2006 reforms build on those from the 1998-2006 period where excise duties were brought into WTO compliance and customs duties were lowered, among other actions, in order to decrease the reliance on international trade taxes that marked the 1970s, 1980s and 1990s (Zafar, 2011; Rambaksh & Hussen, 2013).

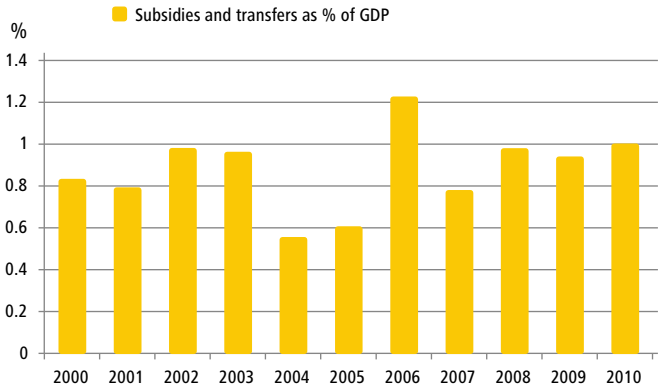
Despite the success of these reforms in broadening the tax base, tax revenue as a percentage of GDP is still relatively low, at approximately 25 per cent for 2013. This suggests that space remains for EFR and more general taxes and fees to increase government revenues. Table 5 provides a general overview of government revenue sources.

FIGURE 6 TOTAL PUBLIC SPENDING, 2000-2011



Source: World Bank, World Economic Outlook (WEO) database (Accessed 17 November 2013); Statistics Mauritius, National Accounts (Accessed 1 November 2013).

FIGURE 7 OVERALL SUBSIDIES AND TRANSFERS (PER CENT OF GDP)



Source: International Monetary Fund, Government Finance Statistics (GFS) database (Accessed 14 November 2013).

2.3 PUBLIC EXPENDITURE

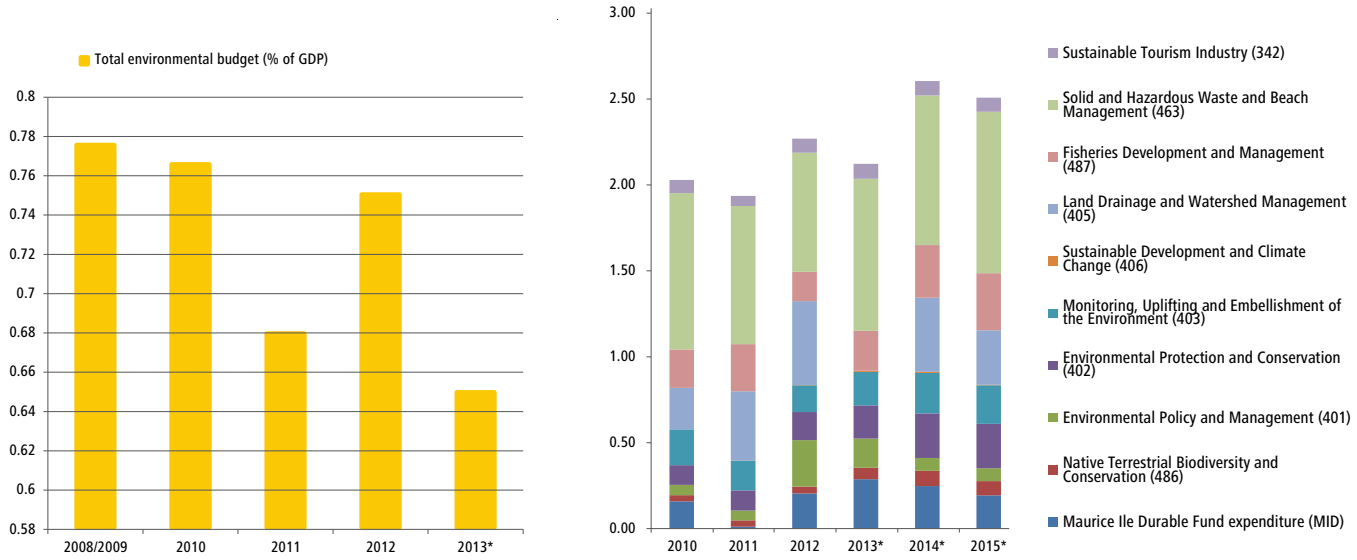
While there have been fiscal imbalances in the past, there is no history of the government borrowing from the central bank or from aid agencies, since fiscal authorities have focused on ensuring that expenditure remains linked to resource availability. Other than a period in the early 1980s and the current period of fiscal expansion in response to the 2008 crisis, expenditures have never much exceeded 20 per cent of GDP. Capital expenditure, which has averaged less than 5 per cent of GDP since independence, has been used to invest in infrastructure – especially roads – and to provide a conducive operating environment for Export Processing Zones (Zafar, 2011). This has kept total expenditure as a share of GDP near or under 25 per cent, as seen in Figure 6.

As stated in Section 2, the government maintains a robust social support system and as such, social protection, health and education expenditure form a significant part of government expenditure, at 22 per cent, 9 per cent and 13 per cent respectively of total expenditure in 2011. Transport and environment related expenditure, although historically small, have grown significantly in recent years, as seen in Table 6. Subsidies and transfers in general are relatively modest in size as seen in Figure 7 and cover a wide array of functions. Environmentally relevant subsidies are discussed in Section 3.2.

Government expenditure for the environment occurs across a number of different programs, as displayed in Figure 8. In terms of the functional distribution of this expenditure, wastewater management has received a large share in recent budget years, as Figure 9 shows, but this is expected to shrink relative to other functional categories such as waste management, protection of biodiversity and landscape, and pollution abatement with waste water management expenditure falling from MUR 1.3 billion (US$40 million) in 2012 to MUR 10 million (US$300,000) in the period 2013-2015.

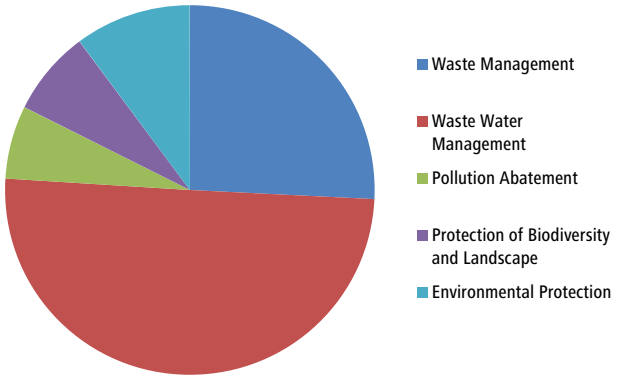
As seen in Figure 10, most of the environmental expenditure in Mauritius is the result of public investment rather than environment related contributions from donors, although these are expected to grow significantly going forward. For the budget year 2014, MUR 230.6 million (about US$7.38 million) in environment relevant grants are expected from international donors. Table 7 shows a snapshot of donor funding from the Global Environment Facility and the external funding GEF leverages.

FIGURE 8 TOTAL ENVIRONMENTAL BUDGET AND ENVIRONMENT-RELATED PROGRAMME EXPENDITURE (MUR BILLIONS)



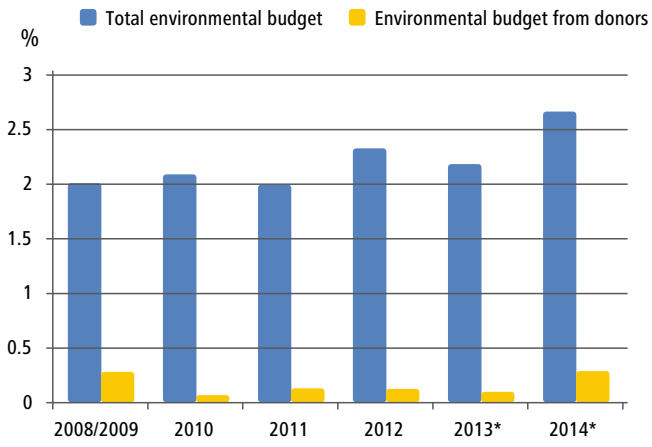
**Planned/projected*
Source: Ministry of Finance and Economic Development, National Budgets (Accessed 1 November 2013).

FIGURE 9 FUNCTIONAL DISTRIBUTION OF ENVIRONMENTAL EXPENDITURE, 2012



Source: International Monetary Fund, Government Finance Statistics (GFS) database (Accessed 14 November 2013).

FIGURE 10 BUDGET ALLOCATED TO ENVIRONMENT RELATED PROGRAMMES AND ENVIRONMENT RELATED FUNDING PROVIDED BY DONORS (MUR BILLIONS)



**Planned/projected*
Source: Ministry of Finance and Economic Development, National Budgets (Accessed 1 November 2013).

TABLE 6 EXPENDITURES BY MAIN SPENDING AREA, 1990, 2000-2011 (IN CURRENT PRICES, US$ MILLIONS)

YEAR	SOCIAL PROTECTION	HEALTH	EDUCATION	INTEREST	TRANSPORT	AGRICULTURE, FORESTRY, FISHING AND HUNTING	ENVIRONMENTAL PROTECTION	OTHER	TOTAL EXPENDITURE
1990	15.4	24.6	25.4	43.3	7.0	20.4	0.0	102.0	238.0
2000	58.7	70.5	70.5	97.6	43.7	37.2	0.0	257.5	635.6
2001	65.6	80.5	72.3	111.5	52.5	39.4	0.0	315.8	737.6
2002	217.0	93.4	154.0	147.1	28.3	41.3	40.4	346.3	1 067.8
2003	227.1	102.1	181.0	207.0	35.8	41.3	52.0	406.2	1 252.5
2004	255.5	122.0	198.7	213.3	32.4	50.9	52.3	432.1	1 357.1
2005	282.6	127.9	218.4	232.7	22.6	50.2	63.1	427.9	1 425.5
2006	333.8	136.5	222.0	238.2	43.6	46.6	74.4	481.1	1 576.1
2007	365.0	142.6	229.6	287.7	51.4	43.8	77.3	461.3	1 658.7
2008	380.5	151.6	281.9	345.8	45.3	137.0	7.3	597.0	1 946.3
2009	490.2	188.7	312.9	339.1	105.7	86.8	67.4	734.4	2 325.1
2010	548.5	250.3	326.9	317.9	138.6	94.3	84.7	708.8	2 470.1
2011	584.2	237.3	334.6	0.0	282.4	65.4	83.0	1 029.8	2 616.8

Source: International Monetary Fund, Government Finance Statistics (GFS) database (Accessed 14 November 2013).

TABLE 7 TOTAL GEF FINANCING IN MAURITIUS, US$

	NUMBER OF PROJECTS	TOTAL GEF FINANCING	TOTAL CO-FINANCING*
National Projects	16	15 644 101	79 953 301
Regional & Global Projects	21	212 832 670	293 595 467
GEF Small Grants Programme	136	4 080 273	8 427 072
Total	**173**	**232 557 044**	**381 975 840**

**Funds from other sources different from the GEF*
Source: Global Environment Facility, Country Profile Mauritius, April 2013, http://www.thegef.org/gef/country_profile/MU

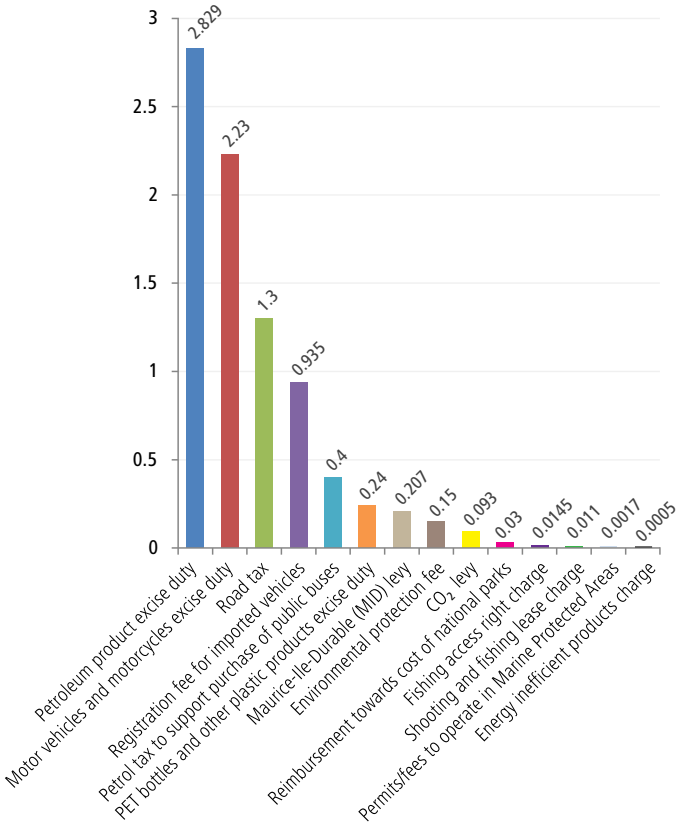
3 ENVIRONMENTAL FISCAL REFORM OPPORTUNITIES

This section deals with Environmental Fiscal Reform (EFR) in Mauritius. Section 3.1 will provide a detailed description of EFR interventions being implemented in Mauritius. The analysis in Section 3.2 will focus on reviewing the EFR status in the specific sectors of agriculture, fishery, water, forestry, energy, waste and transport.

3.1 OVERVIEW OF EFR IN MAURITIUS

Mauritius is active in EFR and is seen as a pioneer in the use of green taxes (Parry, 2011). This is reflected in its key planning documents, which refer explicitly to EFR principles and policies. In its MID strategy, the government outlines the need to implement the Polluter Pays Principle, to review and improve fiscal incentives in order to create effective green economy policies, and to use "financial incentives for green business innovation (i.e. tax breaks)" in leveraging business engagement (Mauritius Ministry of Environment and Sustainable Development, 2013). Additionally, the Action Plan for the MID strategy's implementation notes the need to make more funds available by improving funding mechanisms for environmental purposes and using green taxes and levies (Maurice Île Durable Commission, 2011b; Mauritius Ministry of Environment and Sustainable Development, 2013). The National Environmental Policy also suggests considering the use of "economic instruments to promote recycling and the introduction of fiscal measures on the use of hazardous materials" and recommends "enhanc(ing) the use of market-based instruments such as environmental taxes in order to support Sustainable Consumption and Production patterns" (Mauritius Ministry of Environment and NDU, 2007).

FIGURE 11 BREAKDOWN OF MAIN ENVIRONMENT-RELATED TAXES' CONTRIBUTION TO REVENUE (MUR BILLIONS)



Source: Author's analysis.

3.1.1 ENVIRONMENTAL TAXES AND CHARGES

The country's environmentally related taxes and charges, totalling MUR 8.427 billion (US$270 million) or 2.6 per cent of GDP in 2013,[4] are discussed in the sector-specific sub-sections below and are summarized in Table 8 in order of size of revenue contribution, with their relative sizes displayed in Figure 11.

These various taxes and levies are all environmentally based revenue generators for the government, but the transportation sector related measures are the largest by far. In addition to these charges, there is also a CSR Levy of 2 per cent on corporate profits

TABLE 8 OVERVIEW OF ENVIRONMENTAL TAXES AND CHARGES

TAX OR CHARGE	DESCRIPTION	REVENUE RAISED
Petroleum Product Excise Duty	Applies levies of MUR 10.80 per liter on MOGAS and MUR 3.30 per liter on gas oil	This excise duty generated revenues of MUR 2.83 billion (US$90 million) in 2013 and is thereby the largest environmental tax in terms of fiscal contribution
Motor Vehicles and Motorcycles Excise Duty	Charges a one-off excise duty on the car price of 55 per cent if the engine capacity is less than 1,600 cc or 100 per cent if the engine capacity is greater than 1,600 cc and 45 per cent on motorcycles over 250 cc	This excise duty raised revenues of MUR 2.23 billion (US$70 million) in 2013, making it the second largest environmental tax in terms of revenue; a breakdown of the revenue streams by engine type was not available
Road Tax	An annual per-vehicle charge of between MUR 3,500 (US$114.00) and MUR 13,000 (US$424), again depending on engine size, and is also levied on fuels at the rate of MUR 1.85 (US$0.06) per liter for gasoline and MUR 1.75 (US$0.058) per liter for diesel	This policy raised MUR 1.3 billion (US$40 million) in 2013, but a breakdown by engine size was also not available
Registration Fee for Imported Vehicles	A one-off fee of between MUR 12,500 (US$407) and MUR 150,000 (US$4,892) depending on engine size	This fee raised which raised MUR 935 million (US$30.5 million) in 2013, but a breakdown by engine size was not available
Petrol Tax (to Support Purchase of Public Buses)	Institutes a MUR 1 tax on every litre of petrol purchased as of January 2014	This petrol tax is expected to generate MUR 400 million (US$13.05 million) in revenue in 2014
PET Bottles and Other Plastic Products Excise Duty	Raises the cost of consumption of plastic products and has been complemented in the recent budget with a refund program for the reuse or export of PET bottles	This excise duty raised MUR 240 million (US$7.8 million) in revenue in 2013
Maurice-Île-Durable (MID) Levy	Collects revenues that contribute to the MID fund, which institutes sustainability-related projects in the country. The MID Levy was introduced in June 2008 at the rate of 0.15 MUR/kg of coal, 0.15 MUR/kg of liquefied petroleum gas (LPG) and 0.15 MUR/litre on MOGAS, diesel, fuel oil and jet fuel. The rates were doubled to MUR 0.30 in 2011	This levy generated funds of MUR 207 million (US$6.75 million) in 2013. The breakdown of revenue streams was as follows: Gasoline – MUR 18 million (US$590,000); Diesel – MUR 42 million (US$1.37 million); Coal – 67 million (US$2.19 million); Aviation – MUR 28 million (US$0.91 million; LPG – MUR 7 million (US$220,000); Fuel oil – MUR 45 million (US$1.47 million)
Environmental Protection Fee	Raises funds for environmental initiatives towards pollution control and taxes items such as mobile phones, batteries, tires, stone crushing plants, hotels and guest rooms	This fee generated revenue of MUR 150 million (US$4.9 million) in 2013
CO_2 Levy/Rebate Program on Motor Cars	Charges the purchaser of a vehicle an additional amount when the amount of CO_2 emission per kilometer exceeds 150 grams	This levy generated revenues of MUR 93 million (US$3 million) in 2013 but rebates totalling MUR 456 million (US$14.6 million) were distributed, meaning that despite the fiscal contribution of the levy the overall program ran at a significant loss
Reimbursement towards Cost of National Parks and Conservation Service	Funds are levied from the agricultural sector, but other that, details were not available in terms of the means of funds generation (i.e. whether they are based on an input tax, a per-hectare charge, production, etc.).	This reimbursement generated funds of MUR 30 million (US$960,000) in 2013
Fishing Access Right Charge	Will be in addition to the licence revenue from fishing boats operating in Marine Protected Areas and will apply to all fishing activities	Revenue from the fishing access right is expected to reach MUR 14.5 million (US$470,000) in 2014
Permits/Fees to Operate in Marine Protected Areas	Levied on fishing vessels that are permitted to operate in the country's marine parks	These permits and fees generated MUR 1.7 million (US$50,000) in 2013
Energy Inefficient Products Charge	25 per cent on energy inefficient household air conditioners, dryers, electric lamps, refrigerators, ovens and dishwashers	This charge generated MUR 0.5 million (US$10,000) in 2013, but this is expected to increase ten-fold in 2014

Source: Author's analysis.

TABLE 9 HISTORICAL ENVIRONMENTAL TAX REVENUE BY SOURCE, 2001/2002-2014 (US$ MILLIONS)[5, 6]

YEAR	ENVIRONMENT PROTECTION FEE	MOTOR VEHICLES AND MOTORCYCLES EXCISE DUTY	PETROLEUM PRODUCT EXCISE DUTY (INCLUDING MID LEVY)	PET BOTTLES AND OTHER PLASTIC PRODUCTS EXCISE DUTY	SHOOTING AND FISHING LEASE	AGRICULTURE – REIMBURSEMENT TOWARDS COST OF NATIONAL PARKS AND CONSERVATION SERVICE	PERMITS/FEES TO OPERATE IN MARINE PROTECTED AREAS	TOTAL ENVIRONMENT-RELATED TAX REVENUE
2001/02	5.06	0.00	0.00	0.00	0.00	0.00	0.00	5.06
2002/03	5.47	0.00	0.00	0.00	0.00	0.00	0.00	5.47
2003/04	6.17	0.00	0.00	0.00	0.00	0.00	0.00	6.17
2004/05	6.79	0.00	0.00	0.00	0.00	0.00	0.00	6.79
2005/06	7.03	0.00	0.00	0.00	0.00	0.00	0.00	7.03
2006/07	8.34	58.62	90.18	4.51	0.00	0.00	0.00	161.65
2007/08	8.72	59.35	87.16	4.56	0.00	0.00	0.00	159.79
2008/09	11.16	70.54	86.04	4.54	0.00	0.00	0.00	172.27
2010	5.22	71.12	89.30	5.87	0.00	0.00	0.00	171.52
2011	10.83	69.60	108.17	7.34	0.32	1.17	0.05	197.48
2012	4.86	78.72	104.24	8.57	0.32	1.01	0.06	197.78

Source: Ministry of Finance and Economic Development, National Budgets (Accessed 1 November 2013).

which companies are required to pay for the social and environmental development of the country. This levy generated MUR 123.6 million (US$3.97 million) in 2013 but is not listed above as currently all CSR projects (with one exception, noted in the waste sector sub-section below) are targeted at social rather than environmental outcomes, since the social sphere is the programmatic target of the program. Similarly, hotels pay a Contribution to Social Development, which amounted to MUR 17 million (US$550,000) but is not presently targeted at environmental outcomes. The contribution to social development by hotels is a one off contribution and like all other companies, hotels have to give 2 per cent of their profits for CSR.

It is also important to note that many of these taxes and levies are new, and that total revenue generation from environment-related taxes has grown in the last decade in Mauritius. Table 9 provides an overview of this historical context, demonstrating that 2013's MUR 8.427 billion (US$270 million) environment related revenue was approximately MUR 0.2 billion (US$6.4 million) just a decade ago – suggesting a forty-fold increase by 2013.

3.1.2 ENVIRONMENTAL SUBSIDES

As seen in Table 10, Mauritius also has in place a range of subsidies that have both positive and negative impacts on the environment and indirectly, on key green economic sectors in general. These subsidies totalled MUR 3.176 billion in 2013 (US$103 million) or 0.97 per cent of GDP.[7]

The Land Transport Management Subsidy, Development of Non Sugar (Crop) Sector Subsidy, Livestock Production and Development Subsidy, Power Services Subsidy, Water Resources Subsidy, and LPG Subsidy are detailed below in their respective sub-sections.

Some of the subsidies help to promote the green economy, namely the power services, non-sugar crop, land transport and livestock subsidies, by inducing a shift in electricity generation, agricultural and transport practices towards low-carbon and environmentally sustainable approaches. However, the LPG subsidy is not coherent with Mauritius' green economy goals as it encourages the use of fossil fuels and their related externalities. There is room to revise this subsidy, as Section 3.3.5 describes. Lastly, another set of

TABLE 10 GREEN ECONOMY RELEVANT SUBSIDIES, 2008/2009-2014 (US$ MILLIONS)[8]

YEAR	ENERGY SERVICES SUBSIDY	LAND TRANSPORT MANAGEMENT SUBSIDY	MARITIME SAFETY AND DEVELOPMENT SUBSIDY	DEVELOPMENT OF NON SUGAR (CROP) SECTOR SUBSIDY	LIVESTOCK PRODUCTION AND DEVELOPMENT SUBSIDY	INDUSTRIAL DEVELOPMENT SUBSIDY	POWER SERVICES SUBSIDY	WATER RESOURCES SUBSIDY	LPG SUBSIDY	TOTAL GREEN ECONOMY RELEVANT SUBSIDIES
2008/ 2009	0.130	29.964	0.810	3.693	2.624	5.021	0.000	0.000	?	44.833
2010	0.486	29.025	0.000	6.932	5.572	5.442	0.000	4.049	?	55.459
2011	0.194	34.824	0.032	0.000	0.324	1.425	0.000	0.000	?	36.800
2012	2.462	33.042	0.032	0.356	0.292	1.361	0.000	0.000	23.226	65.857
2013[a]	0.000	31.811	0.032	1.911	0.356	1.458	1.069	6.479	20.732	102.883
2014[a]	0.000	35.633	0.032	1.749	0.777	0.000	3.563	6.479	?	54.228[9]

[a] *Planned/projected*
Source: Ministry of Finance and Economic Development, National Budgets (Accessed 1 November 2013).

subsidies, namely the water resources, industrial and maritime safety subsidies, have ambiguous impacts on the environment and need to be studied more closely to ensure that they are not providing perverse support to environmentally harmful activities.

3.2 SECTORAL ASSESSMENT OF CURRENT EFR INITIATIVES

GENERAL, CROSS-SECTOR ANALYSIS

Mauritius has already put in place significant environmental fiscal reforms, but more can be done to enhance the existing measures and to introduce new ones in order to accelerate progress towards the country's sustainable development goals. There is scope to work more with the private sector and to attract foreign direct investment in green sectors. For instance, as a short-term measure, the government could encourage companies to spend the funds generated by the CSR charge of 2 per cent of profits on environmental as well as social projects, as up to now, spending has only been for the latter. Moreover, investment promotion efforts should be fine-tuned to attract foreign and private investors into under-developed green sectors.

In the medium term, a smaller discount rate in Ministry of Finance project evaluation (currently 10 per cent) could be used in order to more accurately weigh the value of long-term environment-related benefits in decision-making. While earmarking is often regarded as reducing flexibility in fiscal decision-making and not leading to an efficient allocation of tax revenues, diverting funds generated by environmental taxes and charges to the Consolidated Fund can be seen as a barrier to using funds for green economy activities.[10] Moreover, earmarking environmental taxes can increase their social acceptability since tax payers clearly see the purpose and function of a given tax or charge. Also, some of the less progressive elements of the existing tax structure, most notably the flat rate income tax; tax-free dividends; zero capital gains, estate, wealth or inheritance taxes; and the tax-free repatriation of profits, dividends and capital could be reviewed to see if there is scope to increase revenue generation.

Another area to focus on is the development of green economy indicators, which are valuable for identifying priorities for the green economy and for formulating, monitoring and evaluating policy (UNEP Green Economy Indicators Report Mauritius, forthcoming). While Mauritius has not yet defined a suite of green economy indicators, the government has been working with the United Nations Statistics Division on a project on the System of Environmental-Economic Accounting (SEEA). The SEEA is an international approach to gathering and classifying statistics on the environment

and its relationship with the economy. Moreover, the MID Commission has identified a number of indicators for seven sectors – agriculture; water; waste; tourism; manufacturing; transport and energy – which could be the basis for the government to develop and apply a dedicated set of green economy indicators.

In addition to these cross-cutting measures, the government could consider targeted fiscal reforms in certain sectors of importance to the environment. These options are outlined in the following section.[11]

3.3.1 AGRICULTURE

As outlined in Section 1.1, agriculture was historically a key sector for the country, but its importance in terms of GDP and employment has declined in Mauritius' recent history as a result of the country's broader economic success and diversification. Sugar cane is the main crop, grown on about 90 per cent of the cultivated land area (which translates to approximately 40 per cent of the total land area), and accounting for 15 per cent of export earnings (KPMG, 2012; Mauritius Ministry of Finance & Economic Development, 2013). The sugar cane sector faces daunting challenges related to the dismantling of the sugar protocol, where the EU cut its guaranteed sugar import and hence reduced the price of sugar imported from Mauritius by 36 per cent over the four year period 2006-09 (Mauritius Ministry of Environment and Sustainable Development, 2013).

Moreover, the sector's viability may be even more affected by the continuing reform of the EU common agricultural policy and domestically by the constant abandonment of lands by small planters (Government of Mauritius, 2012b). Combined with urbanization and the development of industries, this abandonment has been responsible for the 6.3 per cent decrease in the proportion of land under sugar cane between 1995 and 2005 (Ministry of Environment and Sustainable Development, 2012). The trend has continued since 2005, with land under sugar cane cultivation decreasing by 4.1 per cent between 2011 and 2012 to 57,300 hectares (Mauritius Ministry of Finance & Economic Development, 2013).

Despite its declining relative economic importance, the agriculture sector remains important in terms of its environmental impact, especially with regard to water, as the sector is a relatively intensive user. In 2007, out of a total of about 880 million m^3 of water used in the country, 50 per cent was used by the agricultural sector (Mauritius Ministry of Finance & Economic Development, 2009). Water use will be an important sustainability consideration for the sector going forward.

Government planning for agriculture is focused on increasing margins in the sugar cane sector and promoting sustainable food security in general with the Sustainable Diversified Agri-Food Strategy as the overarching planning document. The Strategy's vision is for an agri-food sector that is diverse and multifunctional; modern and competitive; economically, socially and environmentally sustainable; an integrated and enhanced part of the rural/whole socio-economy; and flexible and responsive to changes in consumer demand (Mauritius Ministry of Agro-Industry and Fisheries, 2008). In order to achieve this, the government has proposed a package of priority actions that cuts across the agri-food supply chain. One of the fiscal elements in the proposed package is a full VAT refund on mechanized equipment for sugar cane planters. Introduced in the 2012 budget, the VAT Refund Scheme provides registered planters, breeders, horticulturists and apiculturists with a VAT refund on purchases of specified agricultural machinery, equipment and tools. In 2013, the amount of the refund was MUR 18 million (US$560,000). The VAT exemption applies only to mechanical equipment – no subsidies or price support are provided for pesticides and/or fertilizers, either organic or inorganic, for which farmers pay market prices. Another fiscal measure in the package is the Cane Democratization Fund, which offers bagasse producers an ownership stake in Independent Power Producer companies. However, the issue of bagasse and the price paid to sugar cane planters is currently being contested by the planters.

In addition to these measures, Mauritius subsidizes rice and flour, which are funded by the country's

fuel excise taxes. Rice is sold to wholesalers for retail at a heavily subsidized price, as is whole wheat flour, for which there is lower demand volumes. In 2011, 2012 and 2013 the total expense on these food subsidies was MUR 132.4 million (US$4.26 million), MUR 92.9 million (US$2.99 million) and MUR 96.2 million (US$3.09 million) respectively. A Livestock Production and Development Subsidy is also offered (MUR 11 million, or US$350,000 in 2013) in the form of a 50 per cent grant up to MUR 10,000 (US$321.50) to assist with livestock, fodder and shelter purchase. The program tries to encourage a shift to new types of livestock with the overall goal of improving food security.

Assistance is also provided to farmers in the form of subsidies for green certification, which the government covers in full. The Green agricultural certification process is still being finalized and as of November 2014, funding was approved for the programme. Finally, there is a Non Sugar (Crop) Sector Subsidy (MUR 24 million or US$770,000 in 2013) which is focused on increasing the share of non-sugar crops in the agricultural sector, again, with the goal of improving food security. The Ministry of Agriculture believes that such a shift will be increasingly viable as sugar prices continue to fall in the coming years.

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POLICY OPTIONS

Given its impact on agricultural equipment, the VAT refund could be expanded to ecological inputs, such as organic fertilizers, pesticides and insecticides. Doing so could stimulate a shift in consumption from chemical products, whose heavy use in Mauritius has adverse effects on soil degradation and water pollution, to organic products that have a more benign effect. This policy approach could also help develop a domestic market for organic agricultural inputs, which are currently mostly imported. In the same vein, the government could consider the introduction of a tax on chemical fertilizers, pesticides and/or insecticides, which could offer revenue generation opportunities. The tax could be anchored in legislation in order to most effectively limit the use of these products, as the Ministry of Agriculture has indicated. Additionally, economic incentives could help change agricultural practices from environmentally harmful sugarcane mono-cropping toward a more diverse mix of crops. Introducing raw water charging in the agriculture sector to cover the marginal cost of the water it consumes could also be beneficial, as is addressed in the water sector sub-section below.

3.3.2 FISHERIES

The fisheries sector, although contributing only 1.3 per cent of the country's GDP in 2010, is an important sector for Mauritius from both a trade and social viewpoint. It is also important in terms of its contribution to the MUR 40 billion (US$1.28 million) per annum tourism industry of mainland Mauritius and Rodrigues. In Rodrigues, the fisheries sector contributes an even greater share to the island's economy and is the island's largest employer.

Artisanal fishermen, who mainly fish in the lagoon areas of Mauritius and Rodrigues, are among the poorest workers in the Mauritian economy, with average earnings from fishing of around MUR 2,760 (US$88.70) per month (Government of Mauritius, 2011). There has been an overall decline of about 32 per cent in annual fish catch between 2005 and 2010, but this is believed to be driven by increased regulation in the sector (including mandated fuel carriers that have made certain types of fishing unviable) rather than collapsing stocks (Ministry of Environment and Sustainable Development, 2012). Marine aquaculture, as seen in Table 11, is also

TABLE 11 FISH PRODUCTION IN TONNES, NET-WEIGHT EQUIVALENT

SECTOR	2005	2006	2007	2008	2009	2010
Artisanal fishery						
Mauritius	947	950	640	682	820	831
Rodrigues	1 040	1 067	1 067	1 758	1 900	1 900
Agalega	30	30	30	30	30	30
Sports fishery	650	650	650	650	650	650
Amateur fishery	300	300	300	300	300	300
Barachois	5	4	2	2	0	2
Ponds (prawn & fish)	23	20	17	62	57	65
Marine aquaculture (cage)	367	447	550	181	366	499
FAD Fishery	--	214	164	167	390	330
Sub-total	**3 362**	**3 682**	**3 420**	**3 832**	**4 513**	**4 607**
Offshore demersal fishery						
Shallow water banks	2 178	3 112	2 848	2 428	2 685	1 774
Banks deep water snappers	--	0	0	285	627	451
St. Brandon inshore	414	235	*54	*173	437	415
Semi-industrial chilled fish	223	311	171	173	459	250
Tuna fishery	1 402	1 380	803	475	246	306
Semi-industrial pelagic fish	177	247	184	41	8	27
Demersal trawlers	2 584	1 112	0	0	0	0
Sub-total	**6 978**	**6 397**	**4 060**	**3 402**	**4 462**	**3 223**
Grand Total	**10 340**	**10 079**	**7 480**	**7 234**	**8 975**	**7 830**

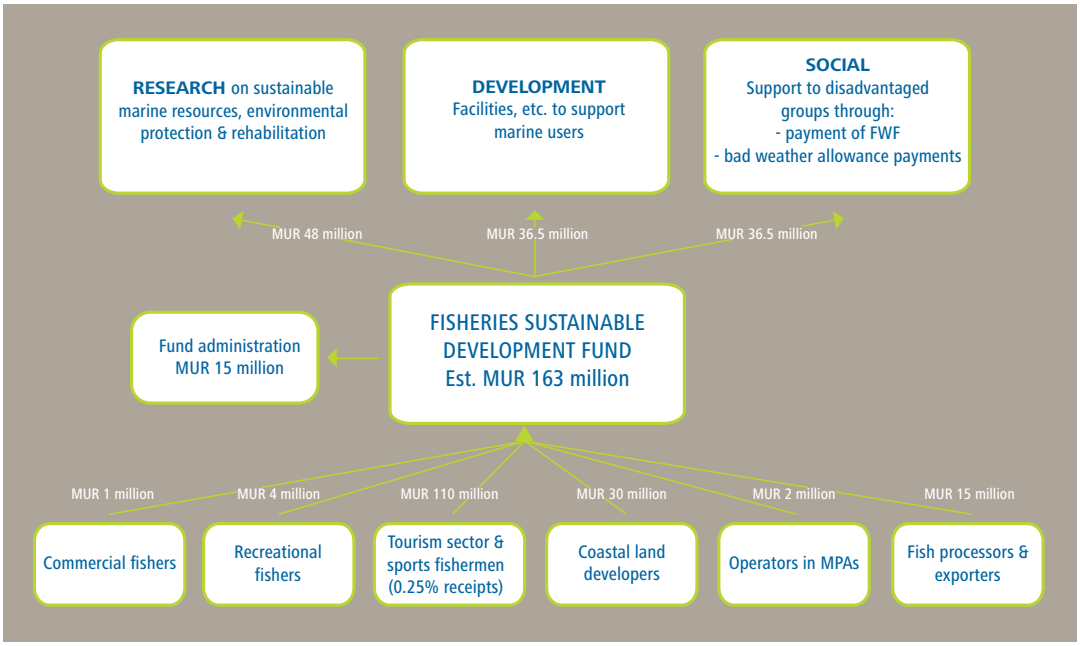
Source: Provided upon request by MID Commission, Government of Mauritius (Correspondence dated 5 June 2014).

practiced in the country. The Ministry of Fisheries believes that it does not deplete natural surrounding marine ecosystems due to its non-use of chemicals and the preservation of surrounding mangroves.

Legislation for the 2011 Fisheries Master Plan is currently being prepared. By 2015, all coastal regions will be managed using annual catch entitlements, giving each fisherman ownership of an entitlement which can be freely transferred and aggregated. These entitlements will be based on the principle of total allowable catch by species, developed by consulting fisherman associations, scientists and relevant environmental groups as well as artisanal and recreational fishermen with long experience in one locality. The new management plan is expected to lead to an increase in knowledge of fish stocks and catches per unit of effort (Government of Mauritius, 2012b).

One of the key EFR policies in the sector is the proposed Fisheries Sustainable Development Fund, whose main elements are summarized in Figure 12 (Government of Mauritius, 2011). The new fund would seek to reduce reliance on external funds and would work in parallel with the Fisheries Welfare Fund (which provides income support) and either work in parallel with or replace the Bad Weather Allowance (which is still being debated). The Fund will be consistent with one of the key principles of the Master Plan – that "where private benefits are derived from the exploitation or use of public marine resources, then the beneficiaries should share in the cost of achieving sustainable resources, addressing social issues created by re-allocation of resources and protecting the marine environment" (Government of Mauritius, 2011). Revenue would be collected for the Fund from commercial fishermen via the existing

FIGURE 12 GOVERNMENT PLANNING FOR FISHERIES SUSTAINABLE DEVELOPMENT FUND



Source: Government of Mauritius, 2011.

system of licence fees; recreational fishermen; the tourism and sports fishing industry; fish processers as a CSR payment; developers of coastal land; and operators in MPAs, with funds devoted to relevant research, development of facilities to support marine industries and social payments (Government of Mauritius, 2011).

Another fiscal policy proposal from the Master Plan is the review of licensing fees and conditions for foreign vessels fishing in the Exclusive Economic Zone (EEZ) of Mauritius and Rodrigues, in order to determine whether current licence fees sufficiently reflect the value of the fisheries that are captured by the foreign flagged vessel involved in the fishing (Government of Mauritius, 2011). Data on current and historical revenue levels from foreign access agreements, domestic licences and penalties were not available. However, the Ministry of Fisheries indicated that domestic licences are provided at low cost and hence generate little revenue, and that fishery monitoring was weak and needed strengthening, and therefore generated little revenue as well. In 2013, MUR 1.7 million (US$50,000) was generated from Marine Park activities (a breakdown was not available), but this is expected to increase significantly, reaching MUR 14.5 million (US$470,000) in 2014.

POLICY OPTIONS

The proposed Fisheries National Sustainable Development Fund can be used to keep the total fish catch below the sustainability level, while at the same time protecting the well-being of vulnerable fishing communities, particularly on Rodrigues island. The government plans to collect fees to capitalize the Fisheries National Sustainable Development Fund[12] from commercial operators and private beneficiaries in the sector but fee levels could be calibrated to reflect the size of the environmental externality associated with operators' respective activities, such as operations in Marine Protected Areas.

3.3.3 WATER

The most water-intensive sectors in Mauritius include agriculture and electricity generation for hydro power, which together consume more than 75 per cent of total water supply.

TABLE 12 WATER TARIFF STRUCTURE IN MAURITIUS

CONSUMPTION OF WATER	FEES (US$)
1 Living quarter	
(a) consuming 10 m^3 or less	1.78 per month
(b) consuming above 10 m^3	
(i) first 10 m^3	0.24 per m^3
(ii) 11-20 m^3	0.29 per m^3
(iii) 21-50 m^3	0.65 per m^3
(iv) 51 m^3 or more	1.46 per m^3
2 Business premises	
(a) (i) for water supplied by the Central Water Authority	0.87 per m^3
(ii) for ground water abstracted	0.87 per m^3
(b) minimum fee	8.75 per month

Source: Provided upon request by MID Commission, Government of Mauritius (Correspondence dated 5 June 2014).

TABLE 13 CENTRAL WATER AUTHORITY REVENUE BREAKDOWN, 2012

TYPE OF TARIFF	2012			
	NO. OF CONSUMERS	VOLUME SOLD (THOUSAND M^3)	AMOUNT COLLECTIBLE (US$)	AVERAGE SALES PRICE PER M^3 (US$)
Domestic	310 992	72 920	22 342.50	0.306
Public Sector Agency	2 497	3 776	2 907.17	0.770
Acquired/concessionary prices	38	174	7.39	0.042
Business	1 109	6 516	7 232.64	1.110
Commercial	13 434	5 998	5 081.68	0.847
Religious	1 910	582	365.79	0.629
Industrial	625	3 866	2 259.77	0.584
Sub-total	**330 605**	**93 832**	**1 240 877**	**40 196.97**
Agriculture	3 833	1 367	0.466	0.306
Total potable water	**334 438**	**95 199**	**1 260 532**	**40 833.67**
Total non-treated water (mainly for agriculture and industry	**323**	**16 122**	**62 061**	**2 010.40**
Grand total	**334 761**	**111 321**	**1 322 593**	**42 844.08**

Source: Provided upon request by MID Commission, Government of Mauritius (Correspondence dated 5 June 2014).

In terms of domestic use, there was a decline in household water consumption from 168 liters a day in 2005 to 160 liters a day in 2008, but the rate rose to 166 liters a day in 2013. The initial fall in consumption was attributed to more water-efficient devices, severe water cuts during the dry seasons as well as national awareness campaigns on water savings (Ministry of Environment and Sustainable Development, 2012).

Government priorities for the water sector include improving water management systems; providing 24/7 potable water to all users; and reducing non-revenue water (network and commercial losses) to a minimum, a particularly important priority from an EFR perspective. At 50 per cent, non-revenue water is rather high and the government is currently working to reduce the level to 25 per cent. To promote greater efficiency, coherence and optimal use of resources in the sector, the government has decided on a major institutional reform in which all four agencies currently involved in the management of water will be integrated into a single institution. It is also investing heavily in the planning and improvement of water supply infrastructure and legislating that hotels equip themselves with their own water desalination plants (Government of Mauritius, 2012b).

Due to insufficient monitoring capacities, there is no fee for wastewater discharge in the country and only water consumption faces a fee. There are plans, however, to develop a system of fines proportionate to the concentration of pollutants in the effluents resulting from industrial processes (Maurice Île Durable Commission, 2011b). The water tariff structure is shown in Table 12. Households are charged on an incremental volumetric basis while the commercial sector is not. While the commercial sector pays higher rates overall, high-consumption households pay a higher marginal rate than the commercial sector, which effectively acts as a cross-subsidy for most households. Overall, the water utility is run on a cost recovery basis.

Table 13 provides a breakdown of the Central Water Authority revenue. Agricultural consumption of metered water is small, but overall the sector is a massive consumer of water due to its abstraction of ground water. However, unlike the commercial sector, it is not charged for its use of ground water, an exemption and right that was granted to the sector in the country's Constitution. This is problematic as the sector is not forced to pay the marginal cost of the water it uses and therefore has little incentive to conserve the resource. In addition, the cost of maintaining the integrity of the country's natural water supply and efforts to increase the supply of water through dams and other infrastructure is not recovered. This unrecovered cost is captured by the country's Water Resources Subsidy, which amounted to MUR 200 million (US$6.5 million) in 2013.

POLICY OPTIONS

The government should follow through on proposed policies for collecting fees for industry's effluent discharge by developing the necessary monitoring capacities, since this is a significant environmental cost currently only being addressed by charging for water use rather than discharge. Charging the responsible entities directly for effluent discharge would allow more effective cost recovery and would also create incentives for industry to develop and adopt cleaner production technologies.

In addition, the Central Water Authority's tariff structure could shift to an incremental volumetric basis for the commercial and industrial sector in order to raise revenue and incentivize conservation, but would need to take into account the water needs associated with the given commercial or industrial sub-sector. Also, the competitiveness impacts of volumetric pricing could be addressed to see whether higher water tariffs would be detrimental to businesses' competitiveness and if that is the case, compensation measures could be considered. However, given that companies already enjoy a favorable tax regime overall – for instance, corporate tax rates are set at 15 per cent and dividends, capital gains and repatriation of capital are exempt from tax – it is reasonable to reform the electricity rates paid by the commercial and industrial sectors.

Finally, the Water Resources Subsidy is a major expense for government and is largely driven by the fact that agricultural producers use water network infrastructure but do not have to pay for abstracted groundwater. Given the long-standing cultural and legal entitlements underpinning this practice, addressing it would be challenging, but the government could engage with agricultural producers to explain the need for groundwater abstraction charges in order to build support for reforms. In particular, highlighting the adverse impacts of climate change on agricultural productivity and showing the potential fiscal gains to be derived from the charge, could help assuage concerns about rising costs for farmers.

3.3.3 FORESTRY

The forestry sector directly and indirectly employs approximately 5000 people in forest resource and watershed management activities, biodiversity conservation, tree planting to provide soil cover in environmentally fragile areas, wood production, primary and secondary processing of wood, wildlife capture and export, deer-ranching and eco-tourism.

There are no communal forests in the country and no communities living within or dependent on forests. Forest ownership only falls into two categories in Mauritius: public and private. This presents an important constraint on government forestry policy-making since much of the country's forest cover is on privately held land over which the government has no authority. Also, because of the rising value of land in Mauritius, private forest owners are more inclined to convert their forestlands to more profitable land use. This pattern has been prevalent for much of Mauritius' history. For over three hundred years, the forests in Mauritius suffered indiscriminate deforestation and conversion for agriculture, timber exploitation, sugar cane plantation and human settlement. On Rodrigues, forests were destroyed by overgrazing and unsustainable agriculture. Therefore, only about 2-3 per cent of the native forest which originally covered most of Mauritius now remains in a few inaccessible areas and very little of it is left on Rodrigues. These areas have been converted into national parks and nature reserves or other protected areas (Mauritius Ministry of Agro-Industry and Fisheries, 2006). Non-native forest cover currently stands at approximately 25 per cent, most of which is of limited quality.

The government has the stated goal of increasing forest cover to 33 per cent by encouraging the development of endemic species (location, biodiversity, ecosystem functioning) by 2015 (Maurice Île Durable Commission, 2011a). The government has a number of strategies for achieving its forestry sector goals, as stated in its 2006 Forestry Policy. A notable EFR strategy is "ensuring the judicious use of levies and green taxes" (Mauritius Ministry of Agro-Industry and Fisheries, 2006). The private sector is an active participant in reforestation efforts, largely as a CSR measure, and plans to plant 150,000 trees in 2014. The public sector is also active, spending approximately MUR 2 million (US$65,000) on reforestation and afforestation in 2013.

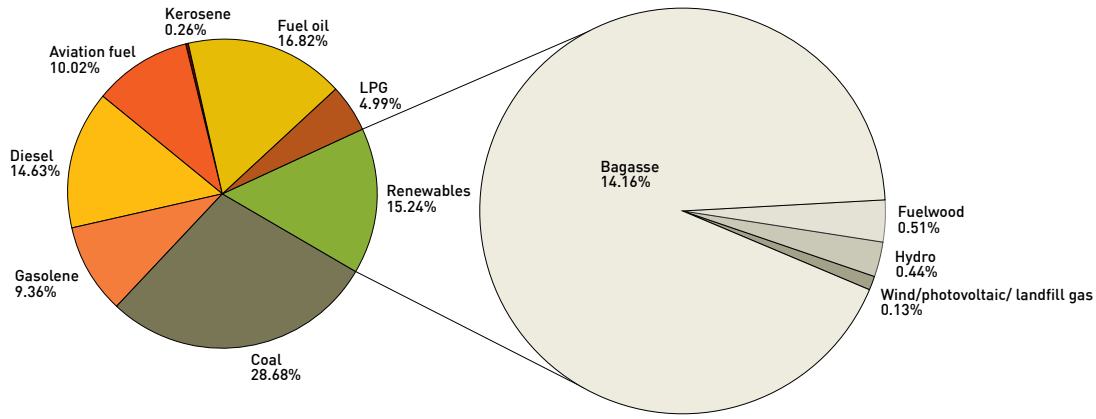
Forest-related ecotourism revenue is small, at only MUR 100,000 (US$3,268) per year. Public revenue is limited and is drawn from the country's forest sector in the form of forestry licences and penalties, although monitoring is believed to be relatively strong. The country's monkey export tax (mostly destined for use in research) is actually the sector's largest revenue generator, at MUR 23 million (US$750,000) per year.

POLICY OPTIONS

EFR measures could be considered in order to improve the performance of the forestry sector and at the same time protect natural capital and ecosystems. One promising measure is to sell carbon credits from the sector through mechanisms such as REDD+ for potential reforestation and afforestation efforts, with care taken to show the additionality of such measures.

There is good potential for scaling up forestry licence costs, in order to account for forests' valuable role in nutrient cycling, habitat provision and other important ecological services. The Ministry of Forestry believes its monitoring system for off-licence forestry activities

FIGURE 13 MAURITIUS' PRIMARY ENERGY REQUIREMENTS, 2012



Source: Mauritius Ministry of Environment and Sustainable Development, 2013.

is sufficiently robust. However, revenue from illegal forestry penalties is very low in the sector, suggesting that either the penalties are too low, monitoring is insufficient, or there is illegal activity taking place. An investigation is needed to clarify the source of the problem and to determine the best path forward for raising revenue from penalties for off-licence activity.

3.3.4 ENERGY

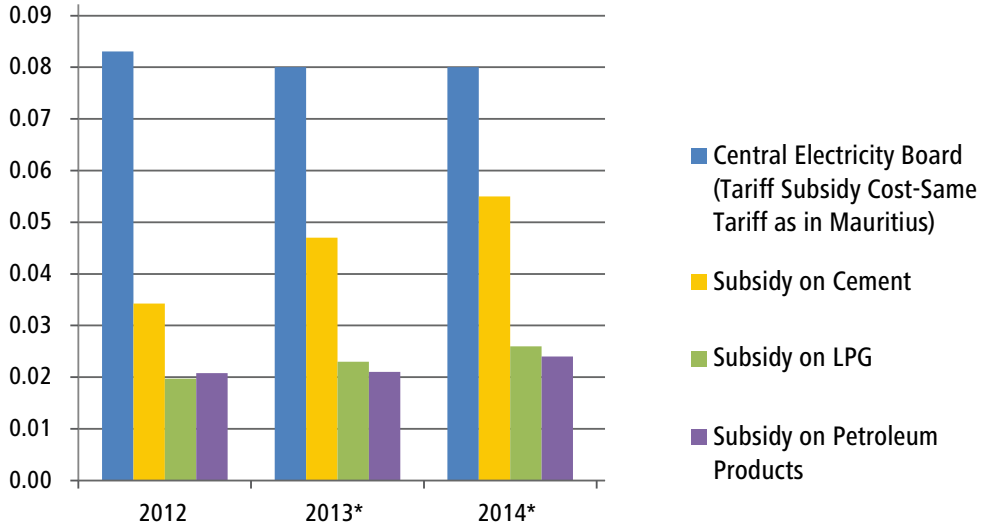
Energy is critical to the development of Mauritius. Fossil fuels remain the dominant source of primary energy for generating electricity and supplying the energy needs of the two largest consuming sectors: transportation and manufacturing. During the last decade, the national energy requirement has grown at an annual rate of nearly 5 per cent. To meet its energy needs, the country has remained heavily dependent on fossil fuels, as seen in Figure 13. Demand for energy will continue to increase as the economy grows. At the same time, world fossil fuel prices will continue to fluctuate and as global demand increases, the overall trend will be for prices to rise. Mauritius therefore needs and intends to reduce its dependence on fuel imports, helping to wean the economy from fossil fuels. To do this, the Long Term Energy Strategy calls for simultaneous action to reduce demand and to increase the proportion of renewable energy supply. The country's renewable energy targets are outlined in Table 14.

TABLE 14 TARGETS FOR RENEWABLE ENERGY OVER PERIOD 2010-2025

FUEL SOURCE	PERCENTAGE OF TOTAL ELECTRICITY GENERATION	2010 (%)	2015 (%)	2020 (%)	2025 (%)
Renewable	Bagasse	16	13	14	17
	Hydro	4	3	3	2
	Waste to energy	0	5	4	4
	Wind	0	2	6	8
	Solar PV	0	1	1	2
	Geothermal	0	0	0	2
	Sub-total	**20**	**24**	**28**	**35**
Non-renewable	Fuel oil	37	31	28	25
	Coal	43	45	44	40
	Sub-total	**80**	**76**	**72**	**65**
	Total	100	100	100	100

Source: Mauritius, 2009a.

FIGURE 14 ENVIRONMENT-RELATED SUBSIDIES TO RODRIGUES REGIONAL ASSEMBLY FROM NATIONAL GOVERNMENT (MUR BILLIONS)



*Planned/projected
Source: Ministry of Finance and Economic Development, National Budgets (Accessed 1 November 2013).

The energy sector is a major contributor to the country's GHG emissions. In 2012, it was the main source of CO_2 emissions, contributing around 61 per cent of the country's emissions (Mauritius Ministry of Finance & Economic Development, 2013). However, there is limited capacity to monitor energy sector emissions and for this reason emissions are not directly taxed and are instead addressed through per-kilogram MID levies on coal and LPG and a per-liter MID levy on fuel oil. While there is no excise duty on coal, LPG, or fuel oil, high taxes are imposed on gasoline and diesel through a combination of excise duties, MID levies and per-liter contribution to the purchase of public buses. In contrast, coal, LPG and fuel oil are relatively less taxed, as they are subject only to the MID levy. As a result, there has been a shift from consumption of gasoline and diesel towards coal, according to the Ministry of Environment, which has greater GHG impacts and air pollution impacts. LPG for household use is the only subsidized fossil fuel in Mauritius (with the exception of the Rodrigues subsidies outlined below), but this subsidy is quite costly, at MUR 717 million (US$23 million) and MUR 640 million (US$20.6 million) for 2012 and 2013 respectively. In addition, as seen in Figure 14, the central government subsidizes Rodrigues in its electricity, petroleum product, LPG and cement costs.

TABLE 15 TARIFF RATES FOR DOMESTIC ELECTRICITY CONSUMERS

Initial 25 kilowatt hours	0.200 per kWh
Next 25 kilowatt hours	0.142 per kWh
Next 25 kilowatt hours	0.154 per kWh
Next 25 kilowatt hours	0.177 per kWh
Next 100 kilowatt hours	0.199 per kWh
Next 50 kilowatt hours	0.256 per kWh
Next 50 kilowatt hours	0.256 per kWh
All additional kilowatt hours	0.284 per kWh

Source: Mauritius Central Electricity Board.

The Central Electricity Board (CEB) is the country's electricity utility. Electricity is supplied on a cost-recovery basis, but there are different rates charged among user groups in order to create cross-subsidies for households, sugar factories and irrigation. The commercial sector and industrial sectors subsidize these users' lower rates. The commercial sector pays the highest rates, followed by the industrial sector, which pays differential day, peak and night rates. As seen in Table 15, a system of tariffs are in place for high-consumption households but not for the commercial or industrial sectors.

The country's MID strategy has a national target of 35 per cent renewable energy by 2025. Public investment is significant, at MUR 3.9 billion (US$125 million) in 2013. The country has a number of renewable energy fiscal incentives in place, including:

— A feed in tariff (already instituted and operational) to connect electricity produced by small independent power producers from renewable sources of energy to the grid, with annual funding of MUR 200 million (US$6.44 million) per year (Government of Mauritius, 2012c);
— A solar water heater financing scheme, which has provided subsidies totalling MUR 600 million (US$19.3 million) over three phases and has seen wide take-up on the part of consumers (20 per cent of households now have one). An independent assessment found that 53 per cent of the systems installed replaced an existing LPG or electric water heating system and 43 per cent were installed in households that previously did not have any water heating (Katevan Consulting, 2013). The assessment also found that the solar water heating systems led to significant fuel savings, offseting prior use of about 454 metric tonnes of LPG and 2,522 MWh of electricity per year. The scheme also saw economic savings of MUR 54,251 per year, of which MUR 8,301 is savings from what the government would have spent on LPG subsidies. The scheme is now implemented through a targeted approach to those at the lower rung of the ladder. However, it should be noted that the Ministry of Finance is uncertain about the cost-effectiveness of this program and is currently studying the issue via a specially designated committee;
— A Power Services Subsidy (which replaced the Energy Services Subsidy in 2013), distributing MUR 33 million (US$1.06 million) in 2013 and MUR 110 million (US$3.5 million) planned for 2014. This subsidy is globally targeted at renewable energy provision, but its specific targeting and impact are not clear;
— Subsidy of compact fluorescent lamps (CFL) lighting for hotels and rental establishments;
— Removal of VAT on photovoltaic panels;
— An accelerated capital depreciation rate of 50 per cent (compared to the usual 25 per cent) for renewable energy equipment: and
— An exemption to the land conversion tax for abandoned agricultural land to be converted for renewable energy use.

Furthermore, the Renewable Energy Deployment Plan for Mauritius (2013 -2015) details the government's plan to subsidize the renewable energy sector by funding the following projects, since current technologies are not able to produce energy at a price competitive with fossil fuels:

— 29.4 MW Plaine Sophie Wind Farm – public-private partnership (PPP) Project – MUR 75 million/year (US$2.4 million/ year) subsidy – Energy Supply Purchase Agreement (ESPA) signed – Expected commissioning: 2014.
— 9 MW Wind farm at Plaine des Roches – PPP Project – MUR 32 million/year subsidy – Negotiations on-going – Expected commissioning: 2015.
— Several solar photovoltaic (PV) farms – PPP Projects – MUR 49 million/year (US$1.6 million/ year) subsidy (negotiations with preferred bidders ongoing) – Expected commissioning: 2014-2015.

In addition, the following projects are also subsidized and are already operational:

- 2 mini-hydro Plants by the CEB (La Nicoliere and Midlands) – Partial financial support from the MID Fund;
- Small Scale Decentralized Generation (SSDG), 3MW – MUR 48 million (US$1.54 million) annually being limited to 3MW project on LV 240/415V grid (CEB) – PPP Project – MUR 48 million/year subsidy – Installation in progress; and
- Landfill Gas to energy (3MW) – PPP Project – MUR 20 million/year (US$643 million) subsidy over five years – Operational. (Mauritius Ministry of Environment and Sustainable Development, 2013).

There are a number of important EFR related measures and policies in the energy sector in Mauritius, including:

— The MID Levy, which is set at MUR 0.30 /kg for coal and LPG and MUR 0.30 /liter for fuel oil, and generated MUR 67 million (US$2.16 million), MUR 7 million (US$225,000) and MUR 45 million (US$1.45 million) in 2013, respectively (transportation fuels are covered below):
— The 25 per cent excise duty on energy inefficient products, applicable to household air conditioners, dryers, electric lamps, refrigerators, ovens and dishwashers, which generated MUR 0.5 million (US$16,100) in 2013;
— A planned shift from LPG subsidies for low-income households to assist them in permanently lowering their energy bills by promoting access to the use of CFL, low energy refrigerators and other household appliances, and the use of solar hot water systems (AfDB, OECD, UNDP & UNECA, 2012);
— Pending analysis of the national energy demand profile to target high demand sectors and reduce their consumption through financial incentives e.g. tax relief (Mauritius Ministry of Environment and Sustainable Development, 2013); and
— Revision of the Government Procurement Strategy to include energy efficiency as a key procurement principle (Mauritius Ministry of Environment and Sustainable Development, 2013).

POLICY OPTIONS

While Mauritius has a significant system of EFR policies in place in the energy sector, there is considerable potential for further measures to be introduced. Reforming fossil fuel subsidies is one of these measures. Poorly implemented energy subsidies have been shown to be economically costly to taxpayers and to damage the environment through increased GHG emissions and other air pollutants. Energy subsidies also create distortionary price signals and can raise barriers to entry for cleaner energy services. Subsidies to consumption, by lowering end-user prices, can encourage increased energy use and reduce incentives to conserve energy efficiently (World Bank, 2012). While there are no direct fossil fuel subsidies in Mauritius, there is cross-subsidization for LPG, which benefits the poorest income groups the most. However, the government is undertaking reforms to reorient LPG subsidies for low-income households towards energy-saving measures. Efficient lighting systems, solar water heaters and energy-efficient cook stoves could all be considered as alternatives to LPG and fiscal incentives could be provided for their deployment.

The Power Services subsidy should also be examined to see if it is in effect subsidizing fossil use in some areas and reformed where this is the case. Part of this review should also examine the Central Electricity Board's tariff structure to ensure it is delivering effective cost recovery. Also, a volumetric pricing structure could be introduced for high-use commercial and industrial customers, as is the case for households, in order to raise tariffs based on usage and incentivize electricity savings and a switch to renewable energy. However, the electricity needs and competitiveness impacts of higher prices should be taken into account and compensation measures considered if there is evidence that the higher electricity tariffs will be detrimental to business competitiveness.

Subsidies to Rodrigues for electricity, cement, LPG and petroleum products should be analyzed to determine whether this money is being optimally spent, or whether it might be beneficial to partially redirect these funds to the development of renewal energy infrastructure on Rodrigues or other priorities.

To incentivize the transition to renewable energy, some form of carbon taxation on power generation should also be considered. In 2011, an IMF paper recommended a carbon tax rate for Mauritius of MUR 360 (US$11.60) per tonne of CO_2 (Parry, 2011). The government could consider a similar carbon tax (or proxy), which can be raised over time. Because 61 per cent of all GHG emissions from Mauritius are attributed to electricity generation, a carbon tax, which could start low and increase gradually over

TABLE 16 SOLID WASTE INPUT BY TYPE AT MARE CHICOSE LANDFILL SITE, 2007-2013

WASTE TYPE	2007	2008	2009	2010	2011	2012	2013
Domestic	358 781	373 860	389 999	402 816	389 743	365 867	408 858
Construction	502	2 065	671	2 394	5 306	5 601	6 141
Industrial (excluding textile)	886	796	1 170	1 140	1 565	680	325
Textile	1 271	1 002	300	432	130	233	89
Tuna/sludge	13 077	12 148	9 126	10 949	10 402	7 370	6963
Poultry	3 387	6 867	7 209	6 339	5 942	6 061	5 316
Rubber tyres	223	347	365	481	447	372	315
Asbestos	260	32	26	44	15	6	50
Condemned goods	2 036	2 361	1 164	1 388	848	1 573	1 588
Difficult and hazardous	4	5	–	42	13	7	17
Paper waste	...	...	...	6	67	7	30
Others	6 648	5	5 918	1 771	65	149	243
TOTAL	387 075	399 488	415 948	427 802	414 543	387 926	429 935

Source: Provided upon request by MID Commission, Government of Mauritius (Correspondence dated 5 June 2014).

time, could incentivize less GHG-intensive electricity generation – by means of more efficient technologies (producing more electricity per unit of GHG emitted) and fuel switching (to natural gas or renewables).

The subsequent electricity price increases would incentivize greater energy efficiency and energy savings and could raise considerable amounts of revenue for facilitating a green economy transformation. If the capacity for emissions monitoring is insufficient, the government could consider a tax on the carbon content of fossil fuels as a short-term or second-best alternative since it is relatively easier to administer. This could also correct current imbalances in fuel taxation by reflecting environmental externalities in fuel prices, compared to the present state of affairs where for example diesel is taxed less than gasoline even though its environmental impact is larger and transport fuels end up heavily taxed while coal and fuel oil, both heavy polluters, are lightly taxed in comparison.

The current practice of voluntary energy audits could be made compulsory for large users and reporting and disclosure requirements could similarly be mandated. Financial penalties could be levied on firms that do not make the prescribed changes. At the user level, financial incentives could also be employed or expanded to encourage energy efficiency in industries and households. This would build on the efforts already made by the Mauritian government in raising awareness regarding energy efficiency.

3.3.5 WASTE

The waste sector in Mauritius has come a long way. In the 1970s, 80s and 90s all municipal, commercial and industrial waste was disposed of by open dumping at ten dumping sites, some of which were located near lagoons or watercourses. Fires at dumps were frequent, sites were infested by vermin and rats, debris was blown away by wind and sites were managed by local authorities themselves. This is in contract to the present situation in which there has been closure of open dumps, construction of sanitary landfills, construction of additional transfer stations, an increase in collection coverage and frequency, disposal of specific types of solid hazardous waste in specially designed cells and increased public awareness on solid waste management (Government

of Mauritius, 2012a). Table 16 provides an overview of solid waste input at the Mare Chicose landfill site as an indication of the breakdown of waste streams in the country.

Between 1999 and 2006, an increase in the household waste collected per capita was recorded and since then, it has been fluctuating around 0.3 tonnes of domestic waste per capita collected per year. Overall waste generation has largely followed the same path, but with a slight uptick in recent years. This increasing level of waste generation and its disposal are a major environmental problem for Mauritius (Ministry of Environment and Sustainable Development, 2012). To improve waste separation, the government has instituted a household composting scheme and has distributed 24,000 bins under this program. There is also a tyre and battery recycling project being instituted by Mauritius Telecom as part of its CSR Expenditure, which received funds of MUR 6.4 million (US$206,000) and MUR 4 million (US$0.12 million) in 2012 and 2013, respectively.

Waste-to-energy projects show promise in the country and a number have been funded under the Clean Development Mechanism. They have reduced energy costs and have respectively created US$35,000 and US$105,000 worth of Certified Emission Reductions for the public and private sectors. In addition, a letter of intent from the Central Electricity Board was sent to two companies willing to produce energy from waste. If these projects are implemented then 380,000 tons of waste out of a total of 420,000 tons produced will be absorbed.

EFR-related policies and measures in the solid waste sector include the following:

- The PET Bottles and Other Plastic Products Excise Duty, which raises the cost of consumption of plastic products (Government of Mauritius, 2012c);
- The Environmental Protection Fee, which raises funds for environmental initiatives towards pollution control and taxes items such as mobile phones, batteries and tyres (Ministry of Environment and Sustainable Development, n.d.);
- In 2006 the government instituted a MUR 1 tax on plastic carry bags which was scaled up to MUR 2 in 2010, plus a VAT of 15 per cent, bringing the total cost per bag to MUR 2.3. Figures for total revenue generation from this policy were not available but are not expected to be large since the charge is more about creating incentives than generating revenue. Overall, the policy has not been very effective since many retailers have simply switched to bags without handles to avoid the tax;[13] and
- In January 2014, the government instituted a graduated refund scheme for plastic bottles, with a view to encouraging recycling companies to increase the collection rate of used plastic P.E.T. bottles for export (although the government is also considering encouraging the development of a domestic recycling sector). The refund amounts for 2014 are projected to total MUR 35 million (US$1.13 million).

In addition to these policies, the government has strong EFR-based plans to reduce overall public expenditure on solid waste management on the basis of the economic value of certain waste streams and payment of fees by businesses, since municipal governments spent MUR 746 million (US$24 million) on landfilling in 2013 but collected no waste disposal fees or charges to help offset these costs.[14] The government also intends to set up a structured system for receiving, treating and/or exporting hazardous wastes that will be sustained by fees paid by generators (Government of Mauritius, 2012a).

POLICY OPTIONS

Current efforts to create a fiscal regime conducive to more sustainable waste management could be further intensified through the implementation of additional EFR interventions. An important means of doing so would be to run waste services on a cost recovery model. MUR 746 million (US$24 million) was spent on landfilling in 2013 but no waste disposal fees or charges were collected to help offset these costs. A pay-as-you-throw model could be considered, which would charge businesses and households for the

amount of wastes they discharge rather than recycle, based on a fee for each waste disposal bag. This could help run waste collection on a cost recovery basis. However, implementing this model would require a complementary system of monitoring and penalties for those who dump wastes in order to avoid these costs. To help with the social acceptability of these policies, households could be given a certain number of bags for free so that only high-waste households end up paying significant fees.

While a charge is in place for plastic bags, some retailers have exploited a loophole by providing handle-less plastic bags in order to avoid the 2 MUR charge levied on plastic bags with handles. Therefore, the government should extend the charge to cover all types of plastic carry bags. At the same time, the level of the charge could be raised, as the overall effectiveness of this charge in terms of its impact on behaviour has been limited.

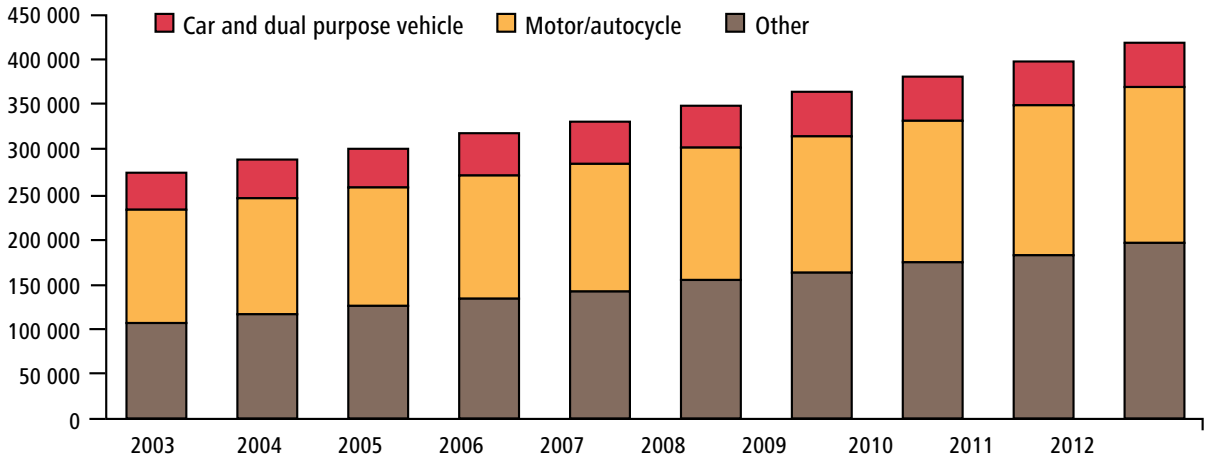
The development of a policy for collecting fees for the disposal of hazardous wastes should continue and rates should be set high enough to cover both the costs of collection and disposal as well as the associated environmental externalities. The revenue neutrality of the PET bottle deposit-and-refund scheme should also be regularly reviewed and analysis should be undertaken to determine the feasibility of developing a domestic plastic recycling sector.

Finally, the possibility of raising the Environmental Protection Fee should be explored given that the policy is currently a relatively small revenue generator.

3.3.6 TRANSPORT

Industrialization, continuous economic growth and a higher standard of living have led to a rapid growth in transport services in Mauritius in recent years. From 1990 to 2008, the total number of vehicles went up from 123,545 to 351,406 – a cumulative increase of 184.4 per cent and an annual increase of 5.97 per cent. The number of private cars per 1000 people rose from 42 in 1990 to 117 in 2008, representing an increase of 178.6 per cent and an annual rate of 5.9 per cent (about 42.3 per cent of the vehicular fleet is private cars). This high level of transport sector growth has led to a number of associated environmental problems, especially emissions of carbon dioxide and other pollutants such as nitrogen oxide, volatile organic compounds, sulphur dioxide and particulates (Ministry of Environment and Sustainable Development, 2012). See Figure 15 for information on the vehicle fleet.

FIGURE 15 STOCK OF REGISTERED VEHICLES



Source: Ministry of Environment and Sustainable Development, 2012.

TABLE 17 TAXES ON FUEL USE, US$ PER LITER[15]

	GASOLINE	DIESEL
Excise	0.350	0.107
MID	0.010	0.010
Contribution to road development	0.060	0.057
Hedging	0.097	0.097
Contribution to subsidy for LPG, flour and rice	0.049	0.049
Contribution to administration of State Trading Corporation	0.011	0.013
TOTAL	0.577	0.332

Source: Parry, 2011.

The transport sector is also a heavy energy consumer, accounting for 51.8 per cent of total energy consumption. In 2012, some 458.5 ktoe of energy were used for transport; diesel oil accounted for 167.4 ktoe; aviation fuel 146.2 ktoe; gasoline 136.6 ktoe; and Liquefied Petroleum Gas (LPG) 4.7 ktoe. The transport sector is also the second biggest contributor to the country's GHG emissions after energy, at 25 per cent of total emissions (Ministry of Environment and Sustainable Development, 2012). In response, a number of policies to improve fuel efficiency and incentivize modal shifts have been introduced. The government has reduced by half the excise duties, road tax and registration fees for electric cars and hybrid vehicles (Government of Mauritius, 2009a) and plans are currently being developed to provide economic incentives for consumers who choose public over private transport (Government of Mauritius, 2009a).

Section 3.1.1 provided an overview of the different types of environmental taxes in Mauritius, including vehicle taxes (see Table 8). There is also a CO_2 levy/rebate on the purchase of cars that produce more than 150 grams of CO_2 per kilometer driven (National Budget, 2014). The CO_2 system was intended to be revenue neutral, with the rebate granted on the car offset by the excise duty payable. However, in 2013 the levy collected from the scheme amounted to MUR 93 million whereas the rebate granted was MUR 456 million, resulting in a significant revenue loss. The Ministry of Finance has indicated that the CO_2 rebate (see Table 8 in Chapter 3.1.1) policy has proven to be administratively complex given the different evaluation standards applied by the countries from which Mauritius imports vehicles and that this is driving much of the losses. Further, the level of GHG abatement the policy has delivered at this point is unclear. For these reasons the government is currently re-evaluating this policy.

As seen in Table 17, the main taxes on fuel are the excise duty, MID levy and the road tax. In addition, a MUR 1 per liter tax on gasoline and diesel to help fund the purchase of public buses was instituted in January 2014 and is expected to generate MUR 400 million (US$12.9 million) in 2014. Fuel taxes are also levied to help fund the subsidies for LPG, rice and flour. Government correspondence indicates that these funds form the basis of the Land Transport Management Subsidy expenditure, which is expected to amount to MUR 1.1 billion (US$35.4 million) in 2014. This subsidy is meant to fund a free transport scheme for students and the elderly. However, it is not clear if this subsidy has other revenue streams associated with its funding, nor whether it is partially allocated to cover the losses of the National Transport Corporation, a State-Owned Enterprise which runs at a deficit.

POLICY OPTIONS

A tax on fuels based on their carbon content and an increase in levies on diesel fuel are two options to consider for reducing the environmental impact of the transport sector, as well as the energy sector. Moreover, the implicit subsidy on diesel should be phased out but the impact on low-income populations needs careful consideration and mitigation measures such as concessionary public transport fares may be necessary.

Public transportation needs to be made competitive with private alternatives, which will require fiscal measures as well as investment by government in public transport infrastructure. Additionally, the government could consider congestion charging as a means to further reduce traffic and pollution, particularly in urban areas and to slow growth in traffic

TABLE 18 SUMMARY OF ENVIRONMENTAL TAXES AND SUBSIDIES IN MAURITIUS BY SECTOR

SECTOR	TAXES AND OTHER REVENUE SOURCES	SUBSIDIES AND OTHER EXPENDITURES
Agriculture	Reimbursement towards Cost of National Parks and Conservation Service	Livestock Production and Development Subsidy
		Non Sugar (Crop) Sector Subsidy
		Subsidies for Green Certification
		Rice and Flour Subsidy
Fisheries	Fishing Access Right Charge	Fisherman Welfare Fund and Bad Weather Allowance
	Shooting and Fishing Lease Charge	
	Permits/Fees to Operate in Marine Protected Areas	
	Penalties for Off-Licence Activities	
Water	Volumetric Pricing for Households	Water Resources Subsidy
Forestry	Ecotourism Revenue	
	Penalties for Off-Licence Activities	
Energy	Energy Inefficient Products Charge	LPG Subsidy
		Power Services Subsidy
	MID Levy on Coal, LPG and Fuel Oil	Energy Subsidies to Rodrigues Regional Assembly
	Volumetric Electricity Pricing for Households	FIT Program and Other Renewable Energy Subsidies
Waste	PET Bottles and Other Plastic Products Excise Duty	Refund Scheme for Plastic Bottles
	Environmental Protection Fee	
	Plastic Carry Bags Excise Duty	
	Gas-to-Energy Project Revenue	
Transport	Motor Vehicles and Motorcycles Excise Duty	Land Transport Management Subsidy
	Registration Fees for Imported Vehicles	
	Road Tax	
	CO_2 Levy/Rebate Program on Motor Cars	
	Petroleum Product Excise Duty	Hybrid and EV Incentives, CO_2 Rebate
	MID Fuels Levy	
	Petrol Tax to Support Purchase of Public Buses	

volumes while incentivizing greater use of public transport, thus enhancing sustainability in the sector.

An assessment of taxes and charges on vehicles that are specific to engine size, namely the Motor Vehicles and Motorcycles Excise Duty, the Registration Fees for Imported Vehicles and the Road Tax should be undertaken to see the possibility of raising the rates charged for large-engine vehicles, both to raise revenues and encourage a shift to smaller, more efficient vehicles.

The taxes and charges on vehicles that are specific to engine size, namely the Motor Vehicles and Motorcycles Excise Duty, the Registration Fees for Imported Vehicles and the Road Tax should all be explored in terms of raising the rates charged for large-engine vehicles, both to raise revenues and encourage a shift to smaller, more efficient vehicles.

TABLE 19 SUMMARY OF EFR OPPORTUNITIES AT SECTOR LEVEL

SECTOR	UNEP ENABLING CONDITIONS*: FISCAL POLICIES	REFORM OPPORTUNITIES	EXPECTED BUDGET IMPACTS
Agriculture	– Market price premium – Elimination of perverse subsides (e.g., pesticides and fossil fuels) – Organic agriculture incentives	– Extend the VAT exemption to organic inputs (S-T) – Tax chemical pesticides and insecticides (M-T) – Create fiscal incentives to reduce mono-cropping (M-T)	Likely increase in budget expenditure due to the introduction of incentives
Fisheries	– Environmental Fiscal Reform – Redirection of harmful subsidies to green activities	– Calibrate fees on operators in and beneficiaries of the sector to reflect the size of environmental externalities (S-T) – Target fishery sector subsidies to support sustainability of the fish stock and encourage fisher livelihood diversification (M-T) – Increase monitoring to enhance penalty revenue from off-licence activity (M-T)	– Expanded fiscal space for green policy interventions
Water	– Removal of harmful subsidies and policies – Fiscal measures (e.g. tax revenues, tariffs, etc.) to finance water infrastructure – Fiscal measures (e.g. tax revenues, tariffs, etc.) to finance water infrastructure	– Institute volumetric water charging for commercial and industrial sector, potentially with offsetting revenue recycling mechanisms (S-T) – Charge industry for level of effluent discharge (M-T) – Charge the agricultural sector for the groundwater it abstracts, or otherwise recover the expenditure represented by the Water Services Subsidy (M-T)	– Fiscal space created for sustainable water management
Forests	– Payments for environmental services (PES) – Incentives for certified activities	– Consider scaling up forestry licence costs (S-T) – Review monitoring and enforcement capacities to increase penalty revenue (M-T)	– Increased fiscal space due to increased revenues from sector (credits, PES, etc.)
Energy	– Phasing out of subsides for fossil fuel – Feed-in tariffs – Public Financing mechanisms	– Review the Central Electricity Board's tariff structure and perhaps institute volumetric pricing for commercial and industrial sectors (S-T) – Review subsidies to Rodrigues for electricity, cement, LPG and petroleum products (M-T) – Implement carbon pricing, either via a tax on emissions or on the carbon content of fuels (M-T)Make energy audits compulsory and penalize firms that do not follow through on prescribed changes (M-T)	– Expanded fiscal space from further subsidy reform, incentive programs raise costs
Waste	– Volumetric landfill taxes – Pay-as-you-throw (PAYT) – Recycling credit	– Tax all types of plastic bags, not just those with handles; raise the tax in order to start changing behavior (S-T) – Regularly review revenue neutrality of the PET bottle deposit-and-refund scheme (S-T&M-T) – Run waste services on a cost-recovery basis using a pay-as-you-throw model (M-T) – Institute fees for collection and disposal of hazardous wastes (M-T)	– Expanded fiscal space from the introduction of waste levy system
Transport	– Taxes on fossil fuels – Congestion charges – Subsidies for low carbon vehicles and transport modes	– Use taxation to raise the relative price of diesel with respect to gasoline (S-T) – Provide financial incentives for use of public transport and invest in public transport capacity (M-T) – Explore raising the already-existing taxes and charges on large engine vehicles (M-T) – Consider congestion charging (M-T)	– Increased revenue from higher taxes but also raised expense due to incentives expenditure and public transport subsidies

Source: UNEP, 2012.

4 CONCLUSION

Mauritius is experiencing robust economic growth that can create the budgetary and fiscal conditions to support the shift to a green economy. On the other hand, the country is running a budget deficit due to the expansionary stance it adopted in response to the 2008 crisis and fiscal space needs to be created to fund these green economy policies and interventions.

The removal of harmful subsidies could contribute to reducing public spending and improving macro-economic stability in Mauritius. Moreover, a reduction in public spending on these subsidies would open up additional fiscal space for the introduction of targeted EFR interventions in all key sectors. As an example, the government has been reviewing the LPG subsidies it offers to low-income households and is considering replacing them with incentives and support for lowering these households' energy costs. LPG subsidy reform represents a significant EFR advancement for Mauritius and bears considerable potential for the creation of fiscal space for green economy.

With respect to implementation, experience in other countries with fossil fuel subsidy reform highlights that policies designed with longer term benefits can have negative impacts in the short-term. Accordingly, mitigation actions to protect vulnerable parties and to ensure political acceptance may be necessary in order to realize the long term benefits of reform. At the household level, such actions could include cash transfers or reduced user charges for the poorest households. Finally, any direct assistance measures can be usefully complemented with projects in support of a green economy transformation over the longer term such as using tax revenues to invest in infrastructure.

Mauritius already has significant environmental taxation policies in place to incentivize more sustainable consumption choices, such as its petroleum and plastic product excise duties. Incentive schemes could also help enable the shift towards more sustainable agricultural practices (e.g. crop diversification and organic farming) and fishing activities (e.g. through livelihood diversification programmes for fishing communities). As a result, the reorientation of public expenditure towards sustainable consumption and production would be expected to enhance environmental protection, while ensuring sustainable and inclusive economic growth.

The sector assessments set out in Section 3 offer a range of possible policy interventions. Further research into aspects of Mauritius' current EFR landscape, such as an analysis of the system of subsidies and whether they help meet the country's sustainability goals, as articulated in the MID, could help to identify additional policy interventions or those in need of improvement. Further analysis of this set of options could be the first step in the development of a reform program to support a green economy transformation. Moreover, although it is beyond the scope of this paper to do so, the use of fiscal incentives to attract private and foreign direct investment in green sectors should be considered.

The government of Mauritius, through its MID process and its long-standing innovation in certain areas of EFR policy, has already demonstrated its commitment to reform national fiscal policies in order to enable a green economy transformation. Mauritius therefore needs to continue on its present path of including sustainable development objectives in policy planning processes and of applying well-conceived, well-targeted consumption subsidies, taxes and incentives to facilitate its green economy transformation. Moreover, as a forthcoming UNEP Report on Green Economy Indicators for Mauritius highlights, Statistics Mauritius is expanding the development of sustainable development indicators,

which encompass social, environmental and economic themes. Developing and improving indicators on green economy could highlight areas where fiscal measures could be deployed to enhance green economy activities and sectors. However, it will be important for the government to partner with private companies and academic and research institutions to build a robust database that can facilitate monitoring and evaluation of EFR, and of progress towards the green economy in general. Also, review and measurement of the efficacy of existing policies, especially with respect to subsidies, will be particularly important for Mauritius. Continued subsidy review and reform and the intelligent application of new environmental taxes and levies where they are presently lacking will help the country ensure that its green economy transformation occurs as cost-effectively as possible from a fiscal perspective.

Lastly, EFR should be undertaken as part of a broader effort on green economy. A Green Economy Action Plan is expected to be released soon by the Maurice Île Durable Commission, with the support of the United Nations Environment Programme. The Action Plan will lay out a series of government actions that will drive economic, social and environmental potential in key sectors of the green economy. As much as possible, EFR should be integrated in the Green Economy Action Plan and in broader development planning processes in Mauritius.

5 NOTES

1 According to the website of the MID Commission, accessed 31 October 2014: http://www.gov.mu/portal/sites/mid/MIDFComProj.htm

2 At the time this table was compiled (August 2014) 1 USD = 30.8699 MUR.

3 Includes only the most prominent revenue sources; excludes 'other' taxes

4 With the exception of the petrol tax, which takes effect in 2014 but was included in the 2013 total to provide a clear picture of the overall level of environmental taxation.

5 A change in budget accounting methods occurred in 2009; the values from the six-month budget for July to December 2009 were therefore omitted in order to display annual values only.

6 Historical figures were not available for all above-described environmentally relevant taxes and charges and therefore totals are likely underestimated.

7 Information on the composition of some of these subsidy expenditures was difficult to obtain. Examples include the Maritime Safety and Development Subsidy and the Industrial Development Subsidy, for which little information could be gathered. Further research should undertake to assess the degree to which these subsidies are being optimized with respect to the goals of the MID strategy document, EFR in general, and overall green economy policy making efforts.

8 A change in budget accounting methods occurred in 2009; the values from the six-month budget for July-December 2009 were therefore omitted in order to be able to display annual values only.

9 This is likely underestimated given that LPG subsidy estimates were not available for 2014.

10 The Ministries met with included the Ministry of Finance and Economic Development, the Ministry of Environment and Sustainable Development, Statistics Mauritius, the Ministry of Fisheries, the Ministry of Agro-Industries and Food Security, and the Ministry of Energy and Public Utilities, as well as IMF Africa office, CEDREFI, Agence Française de Développement, the Board of Investment, and the Indian Ocean Commission.

11 At the request of the Ministry of Finance, the proposed policy options are denoted with short-term (S-T), medium-term (M-T) or long-term (L-T) implementation horizons, to align with the country's policy making and planning processes – the annual budget, Blueprint 2020, and Special Planning Unit, with 1-3, 5-10, and 10-20 time horizons respectively.

12 The Fisheries National Development Fund was a proposal made by the Minister of Fisheries, Mr Von Mally, in 2011. See, for example, this exchange in the National Assembly on the subject: http://desassemblage/English/questions/Documents/ans2011/pnqans05july11.pdf

13 The island of Rodrigues has learned from this experience and banned plastic bags altogether.

14 Which are underrepresented in the MUR 746 million figure since this does not include waste transportation costs.

15 These fuels are also subject to the country's 15% VAT, and not included in this view is the country's new MUR 1 per liter tax to support the purchase of public buses (instituted 2014).

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