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MAURITIUS

Systematic Country Diagnostic

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MAURITIUS

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ABBREVIATIONS AND ACRONYMS

ACP	African, Caribbean and Pacific
AfDB	African Development Bank
AGOA	Africa Growth and Opportunity Act
BoP	Balance of Payment
BPO	Business Process Outsourcing
CEB	Central Electricity Board
CHCL	Cargo Handling Corporation Ltd.
CHSC	Cambridge Higher School Certificate
COMESA	Common Market for Eastern and Southern Africa
CPE	Certificate of Primary Education
CPF	Country Partnership Framework
CPI	Consumer Price Index
CSC	Cambridge School Certificate
CSR	Corporate Responsibility Program
CWA	Central Water Authority
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessments
EPZ	Export Processing Zone
EU	European Union
FAD	Fishing Aggregating Devices
FDI	Foreign Direct Investment
FTTH	Fiber-to-the-home
GDP	Gross Domestic Product
GER	Gross Enrollment Rate
HBS	Household Based Survey
HIC	High Income Country
HRMIS	Human Resource Management Information System
ICT	Information and Communication Technology
IFC	International Finance Cooperation
IMF	International Monetary Fund
IOC	Indian Ocean Commission
IPP	Independent Power Producers
kWh	Kilowatt hour
LPI	Logistics Performance Index
LPG	Liquefied Petroleum Gas
MIC	Middle-Income Country
MID	<i>Maurice Ile Durable</i>
M&E	Monitoring and Evaluation
MoFED	Ministry of Finance and Economic Development

MUR	Mauritian Rupee
MW	Megawatt
NCD	Non-Communicable Disease
NEET	Not in Education, Employment or Training
NER	Net Enrolment Rate
NTA	National Transport Authority
NTB	Non-Trade Barrier
OECD	Organization for Economic Cooperation and Development
PBB	Performance Based Budget
PEFA	Public Expenditure and Financial Accountability
PDMA	Public Debt Management Act
PER	Preliminary Environmental Reports
PISA	Program for International Student Assessment
PPP	Purchasing Power Parity
RDA	Road Development Authority
ROA	Return on Assets
ROs	Remuneration Orders
Rs	Rupees
SACU	Southern African Customs Union
SADC	Southern African Development Community
SME	Small and Medium Enterprise
SOE	State-Owned Entity
SRM	Social Register of Mauritius
TEU	Twenty-foot Equivalent Unit
TFP	Total Factor Productivity
TTCI	Travel and Tourism Competitiveness Index
TVET	Technical and Vocational Education and Training
UAE	United Arab Emirates
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
USD	United States Dollar
WBI	World Bank Institute
WDI	World Development Indicators
WEO	World Economic Outlook
WGI	World Governance Indicator

Regional Vice President :	Makhtar Diop
Country Director :	Mark R. Lundell
Task Team Leader :	Rafael Muñoz Moreno

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Global Practice/Cross-cutting area	Team member
Agriculture	Yuvan A. Beejadur
Education	Cristina Isabel Panasco Santos, Andreas Blom
Energy and Extractives	Silvia Martinez Romero, Pedro Antmann
Environment and Natural Resources	Michael Vaislic, Xavier Vincent, Yuvan A. Beejadur
Finance and Markets	Steven Dimitriev, Brinda Devi Dabysing, Sindy Karberg, Douglas Zhihua Zeng
Gender	Aphichoke Kotikula
Governance	Kathrin Plangemann, Zac Mills, David Wachira, Patrick Kabuya
Health, Nutrition, and Population	Dominic Haazen
Jobs	Jennifer Keller
Macro-fiscal	Rafael Muñoz Moreno, Maria Teresa Benito-Spinetto, Sankaracharya Polodoo
MIGA	Cherian Samuel
Poverty	Victor Sulla, Toru Nishiuchi
PPP	Rui Monteiro
Social Protection and Labor	Melis Guven
Trade and Competitiveness	Steven Dimitriev, Eneida Fernandes Mateev, Gonzalo J. Varela, Mombert Hoppe, Cemile Hacibeyoglu
Transport and ICT	Anat Lewin, Mather B. Pfeiffenberger, Martin Humphreys, Atsushi Iimi, Aly Sanoh, Theresa Osborne
Urban, Rural, and Social Development	Doekle Geert Wielinga
Water	David Malcolm Lord

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Executive Summary

Introduction

1. Mauritius has been a success story since independence, moving from low income to upper middle-income status. Close public-private partnerships facilitated private sector-led growth in a stable macroeconomic and institutional environment. The government implemented an active industrial policy to support private sector competitiveness while exploiting global trade niches created by preferential access arrangements. As a result, savings were high and reinvested in diversifying the economy. Starting as a mono-cropped, inward-looking economy, Mauritius moved toward an export oriented and diversified economy producing textiles, tourism, financial and ICT services.
2. Mauritius' social contract is behind its successful inclusive economic model. At the time of independence, ethnic fragmentation, wealth concentration, mono-crop economy, high population growth and limited land and natural resources weighed heavily against the chances of the country to develop in a sustainable and equitable way. Mauritius' social contract was the response to this complex reality, and in turn it has shaped the development of the country in terms of wealth creation and shared prosperity. Ethnic tensions were strong and the political system ensured that all ethnic groups were adequately represented in the National Assembly while the public sector ensured that no ethnic group was left economically behind. A balance was struck to guarantee that owners maintained their assets to create wealth while the political system established a welfare state to redistribute wealth and respond to the needs of the majority of the population. Furthermore, close public-private dialogue allowed the government to provide the private sector with an adequate environment for reallocation of resources into new growing sectors.
3. As a result, growth was shared among the population at large. Export-led industries translated into substantial employment creation and subsequent productivity gains supported rise in salaries. Growing household income not only improved quality of life but also was substantially reinvested into human capital, through government free education and health programs. Responsive institutions ensured that public services expanded for all, and significant social protection programs supported the most vulnerable. This shared economic growth pulled the majority of the population out of poverty and created a vast middle class.
4. About a decade ago, Mauritius's economic model showed signs of distress, associated with the loss of preferential access, negative terms of trade, and growing international competition in low cost industries. With a limited number of financially sustainable alternatives, a new government received a clear political mandate to move forward with sweeping reforms. The government liberalized the economy to facilitate the transition of resources toward the expanding sectors of the economy. The labor market was reformed, sectors were opened to foreign investment, the business environment improved, tax compliance was simplified, and fiscal expenditure was reined in. The reforms paid off quickly in the form of accelerating GDP growth, employment creation, rising Foreign Direct Investment (FDI), growing private investment, and declining public debt ratios. Furthermore, the economy became more resilient which helped it to navigate the global international downturn and the subsequent European economic slowdown.

5. Results since 2010 have been less encouraging than expected, and the government is facing challenges on several fronts. GDP growth is losing steam as the positive impact of reforms wanes and the external environment remains uncertain. Employment creation remains subpar and growing inequality is slowly eroding the standard of living for the poor and the most vulnerable. The public-private dialogue that worked so well in the past is having less impact. What is more worrisome, it is becoming increasingly difficult to deliver on the social contract as signs of a strained middle class show. With this situation in mind, the government is facing mounting social and economic challenges that will make it more difficult to achieve high-income status in the medium term while ensuring broad-based prosperity.

6. Mauritius is now at a crossroads. On the one hand, it can pursue a path where reinvigorated public investment boosts economic growth and reinforced public assistance enhances redistribution. On the other hand, it can select a path where private sector identifies constraints for growth and the public sector is the enabling agent that removes them, ensuring that proceeds are adequately shared by targeted assistance and improved service delivery. While the first option is tempting it will unlikely move the country toward the kind of sustainable economic growth that would allow the country to reach high-income status. Furthermore, there are high risks that the country would get stuck in a middle-income trap of relatively low value-added growth and widening social outcomes. The second option will be harder, as it will require a careful review of the economic model that has worked successfully thus far. This review will need to acknowledge the challenges that hold back the country's potential and the limitations of the more vulnerable citizens to reap the fruits of economic growth. Yet, it is just such revival of a social contract that has worked so well in the past, one in which private and public sector dialogue works effectively and economic diversification and shared prosperity are at the core of this dialogue.

7. In this context, the Systematic Country Diagnostic (SCD) is intended to assess the priorities of Mauritius to accelerate sustainable economic growth while improving the welfare of the less well off. The SCD aims to understand why income growth among the bottom 40 percent of the population has been low relative to the average income. The SCD also addresses how the rate and structure of aggregate growth can be improved to accelerate income growth among the bottom 40 percent of the population, as well as ensure that overall growth is sustainable. The individual chapters of the SCD analyze the opportunities and challenges to meeting these objectives with respect to economic growth, inclusiveness, and sustainability. The SCD concludes with a prioritization of the key challenges.

Declining poverty, growing inequality and increasing difficulties to retain middle class status

8. Absolute poverty in Mauritius is negligible by international standards. No one lives below USD1.25 a day and less than 1 percent of the population lives below USD2 a day. Poverty is also low by national standards and it has fallen over the last five years, with the national poverty rate down from 8.5 percent in 2007 to 6.9 percent in 2012. However, poverty is higher in households headed by females and by those with education below the secondary level. Most notably, poverty is concentrated among children and youth, which has important implications for inclusion and inter-generational transmission of poverty.

9. During the last five years, there has been a remarkable increase in inequality in Mauritius and the Gini coefficient after transfers increased from 0.34 to 0.37, slowing down the pace of

poverty reduction. As a result, relative poverty¹ has increased from 8.5 percent in 2007 to 9.8 percent in 2012. More importantly, income growth of the bottom 40 percent of the population has been disappointing and increased at an annual rate of 1.8 percent compared to 3.1 percent for the population at large.

10. As a result, the middle class has shrunk during the last five years and is increasingly vulnerable to falling back into poverty, putting growing pressure on the bottom 40 percent of the population to achieve or retain their middle class status. Indeed, the most important driver of poverty reduction is employment, and widening differences in salaries across quintiles are the main explanation for the surge in inequality. Social transfers have played a central role in reducing poverty and inequality but cannot fully counteract differential labor market outcomes.

11. Poverty is expected to continue its downward trend and micro simulations indicate it could fall to around 4.9 percent by 2019 should current trends continue. However, inequality is expected to continue increasing as growth dynamics will be tilted toward high-skilled services sectors and against the most vulnerable and uneducated. Without ensuring broad-based income growth, it will be increasingly difficult to eradicate poverty and ease the pressure on the vulnerable and on the low middle class to retain their status. Furthermore, strong social discontent cannot be ruled out should broadly shared economic growth slow down. While many have escaped poverty and have progressed through the income ranks, there are still people at risk of falling back into poverty.

12. Current economic conditions are creating substantial discontent as employment and income levels remain subpar and those more vulnerable fail to obtain an equitable share of income growth. These conditions are expected to continue and could potentially be reinforced.² Failing to address the challenges identified in this SCD will send Mauritius into what is called a middle-income trap. If it is unable to move toward higher value-added sectors, the economy will face growing international competition and be unable to create sufficient employment and income, raising the dissatisfaction of the population.

Need to move from industrial policy toward innovation policy

13. The liberalization of the industrial model in the mid-2000s brought considerable diversification to the Mauritian economy. Services boomed at the expense of agriculture and industrial production. Yet, the model is affected by substantial headwinds in the form of losing preferential access in textile and sugar production and heightened international competition. Exports have also evolved toward services but overall remain below the pre-2008 global crisis levels. Economic growth has been sustained by growing private consumption at the expense of households' savings. However, in a context of declining productivity gains, the current growth model will be difficult to sustain. This is already evidenced by a wage setting mechanism that has increasingly put pressure to raise salaries above productivity gains, affecting the competitiveness of certain sectors and lowering private investment and employment creation.

¹ The relative poverty line is calculated as a share of median income, and the absolute poverty line is based on a real income (or consumption) poverty line anchored in 2007 prices.

² There are four underlying forces that will further challenge Mauritius' objectives: (i) increasing global competition; (ii) rising inequality; (iii) aging population; and (iv) extreme vulnerability to natural hazards.

14. This dynamic has set Mauritius on a low value added growth path, unable to deliver on the government's and population's aspirations. Developing a new growth model for Mauritius will require improving productivity at the firm level to raise the country's competitiveness. This SCD identifies three main areas that are holding back the potential of the economy to accelerate economic growth: limited and inadequate skills, limitations for technology absorption, and inadequate trade facilitation.

15. Exporting sophisticated products with higher added value depends upon the capability of the labor force to adopt new technologies and embrace new processes. However, half of the firms across all sectors in Mauritius note the constraint of a limited pool of workers with adequate qualifications and skills. As the technological gap between Mauritius and advanced economies narrows, the need for education and skills at all levels grows. This lack of adequate skills has a negative impact on the inclusiveness of growth, as the most vulnerable are the most affected.

16. Mauritius' innovation system ranks 76th in the 2014 global competitiveness index, far behind other middle-income countries. This undermines the country's ability to attract additional FDI and, more importantly, to absorb global knowledge and technology. As a result, economic diversification toward higher value-added sectors and links to global markets are curtailed. To address this, a better institutional framework and incentives for innovation are needed. Education and skills should be improved and realigned towards the needs of the business sector. The linkages between academia and business should be reinforced to increase R&D. A better enabling environment supported by adequate intellectual property laws would serve to protect and encourage knowledge transfer.

17. Mauritius ranks 29th in the 2014 global enabling trade index, reflecting upgrades to port and airport facilities and the expansion of ICT services. This has improved trade facilitation substantially, making Mauritius a regional hub for container transshipment and supporting the development of Information and Communication Technology/Business Process Outsourcing (ICT/BPO) services. However, current policies, such as those disallowing fifth freedom³ and foreign ownership of air carriers, undermine the management and operationalization of this infrastructure, limiting competitiveness and hampering employment creation. Further air liberalization would enhance market competition, reduce prices and stimulate growth in the tourism market by reducing airfares and increasing passenger flows by 20-30 percent. Improved operational efficiency in cargo handling would secure Port Louis as a regional transshipment hub in a context of growing regional competition. To support the ICT sector, promotion of infrastructure sharing and unbundling the local loop network would further reduce tariffs for international bandwidth connectivity.

Improving equity in public service delivery: ensuring employment opportunities for all

18. Wage income is the main driver of prosperity in Mauritius, yet the most vulnerable struggle to fully reap the benefits of economic growth because not enough employment is created and many workers lack adequate skills for today's labor market. The government has substantially invested in providing widespread and equitable access to basic services, including basic infrastructure and free health and education for the entire population. Across the board, however,

³ The fifth freedom allows an airline to carry revenue traffic between foreign countries as a part of services connecting the airline's own country. Rowell David. *Freedoms of the Air*. The travel Insider. (2012-11-12).

issues related to the quality of these public services explain diminishing opportunities for the most vulnerable and intergenerational inequality.

19. Labor market institutions constrain the capacity of the economy to create jobs, and reinforce gender inequity. The decentralized wage settling mechanism fails to accommodate salary increases with sector productivity. This is explained by spill-overs from more dynamic sectors and large public sector salary increases as well as wage growth in line with inflation rather than productivity. As a result, unit labor costs in certain sectors grow too quickly, undermining competitiveness and employment creation. Despite the low labor force participation of around 60 percent, the 8 percent unemployment rate is becoming entrenched. Labor market inequity is evidenced by substantial and persistent gender gaps in terms of low female labor force participation, higher unemployment rates, and large wage gaps. As a result, female-headed households face consistently larger poverty rates in comparison to male ones.

20. The education system as currently structured limits human capital growth and fosters intergenerational inequality. The free public education system provides all children with full access to education, but the fact that many households finance private schooling and tuition translates into highly unequal education outcomes. Not only do too many children fail to acquire the minimum level of education, partially because of failing the Certificate of Primary Education, but also the overall quality of learning does not compare well with other upper middle-income countries. The education system is failing to equip many young Mauritians with adequate skills, which is repeatedly mentioned by the private sector as one of the major constraints to creating additional employment.

21. Employment is vital in shaping household income in Mauritius. If not adequately corrected through training later on, inequity in education outcomes results in income inequality, ingraining substantial intergenerational poverty in the country. Dedicated efforts will be needed to raise the quality of the entire education system for the population at large, including a vocational stream responsive to private sector demands. In the short term, large targeted training programs could be envisaged to retooling the Mauritian labor force in line with current market requirements, boosting employment and income generation.

22. Existing social protection systems reduce the level and depth of poverty but cannot fully compensate for the level of income inequality that the labor market generates. Overall, results could be improved if spending is better targeted to reach poor households and the system is made more efficient. Furthermore, better integration of sector policies in health, education, and active labor market programs, could better tackle chronic poverty, facilitate labor market reintegration at a time of declining population growth, and promote private savings through pension reform.

Aligning resources and priorities: sustaining development

23. Mauritius is committed to sustainable development and has pioneered initiatives such as *Maurice Ile Durable* and ocean economy strategies that serve as models for other Small Island Developing States (SIDS). These initiatives are a reaction to structural factors, particularly the extreme vulnerability of the country to natural hazards, which will be further worsened because of climate change. Policies, institutions, tools and practices need to be strengthened to build resilience and mitigate natural shocks. Also, a reinforced regional approach in many areas could

not only help sustain natural resources such as fish stock, but also exploit emerging opportunities including the ocean economy.

24. Aspirations to become a high-income economy will be difficult to achieve unless certain infrastructure policies are revised and resilience is built in its infrastructure, both public and private, in terms of location, orientation, construction codes, land management and overall better public sector management of disaster risks. While water resources abound, the country faces continuous water shortages as a result of insufficient tariffs, lack of investment, and inadequate policies and sector governance. Lack of consensus about the development of the electricity sector is hampering essential investment, putting at risk the expansion of electricity generation at a reasonable cost. Also, despite substantial expansion of the road network, current transport policies cannot cope with growing congestion, particularly in the most densely urbanized areas of the country. Lack of available land will further limit the development of the road network calling for parallel interventions to manage demand so that pricing adequately reflects congestion and opportunity costs, while providing adequate public transportation.

25. The extreme vulnerability of the country and the aim to achieve high-income status in the medium term calls for a careful consideration of the public sector role. On the one hand, the government will need to ensure that adequate fiscal and monetary tools are always available to cope with any potential external shock, environmental or economic. Historical analysis indicates that cyclones alone have been responsible for about US\$85 million in damages and losses, therefore there is a need for adequate fiscal space to cope with disasters, including disaster risk financing tools and insurance. On the other hand, public resources will need to be reallocated to emerging priorities in terms of building infrastructure and human capital. This will be particularly challenging, as the public budget will be under considerable pressure as a result of the aging population and its impact on health and pension spending. Overall, this may require increasing the level of public expenditure accompanied by a careful review of policies and a consideration of trade-offs to reorient public spending toward the most critical needs.

26. Aspirations to become a high-income economy will be difficult to achieve unless modernization of the public sector accelerates. Public sector efficiency is subpar when compared with other upper middle-income countries and there are areas where the quality and equity of public service delivery is inadequate. A new wave of public sector reforms could raise accountability at all levels, improve planning, procurement, and management processes across the system, and ingrain a continuous process of monitoring and evaluation to support evidence-based policy making.

Defining the priorities for achieving the twin goals

27. The analysis presented in the SCD identifies 18 high level challenges across three thematic areas to achieving inclusive, high-income level status. These are (i) identifying the drivers of growth, (ii) supporting inclusion, and (iii) sustaining progress. The priorities identified describe the inputs and environment that will be required for Mauritius' successful economic transformation. A range of assessment criteria was used to identify the highest priority challenges, with the most important criteria focused on the potential impact to eliminating extreme poverty and ensuring sustainable employment and income for the bottom 40 percent. The prioritization process aims to balance the relevance of the interventions with a timeline that provides an

inclusive path to reaching high-income status, while reinforcing political capital to move the reform process forward.

28. In the short term, there is a need to accelerate economic growth and employment. This calls for unlocking sector specific constraints to boost domestic investment and employment creation. The government has keenly embraced reforms to support SMEs and skill development as well as removing some sector constraints to favor private investment. These measures are broadly accepted by the population at large and could translate into positive impact in a relatively short period of time. Yet, for these measures to be fully successful they need to be complemented with some additional and politically costly supply side reforms, especially to remove constraints in trade facilitation including port management, ICT connectivity, and air access. These reforms would have a significant impact on the potential for exports of services, boosting employment in ICT/BPO, tourism, and trade and absorbing losses in declining sectors such as agriculture and textiles. While the political cost of the latter reforms may be high, the large impact foreseen and the complementarity with measures already announced by the government could translate into meaningful impact that would be achieved during the current government's tenure.

29. In the medium term, there is a need to develop a more competitive economy centered on higher valued-added sectors. The government needs to establish the right incentives to support the transition toward a high-income economy, including improved innovation policies and labor market institutions. Revisiting industrial policies and improved innovation policies can pay off in the medium term in the form of higher FDI, knowledge transfer, and increased competitiveness if they are implemented in the short term, helping to overcome relatively low political capital costs. While reforming labor market institutions may be costly, it would have a large positive impact if combined with the above reforms, helping to set a more competitive economy.

30. Mauritius' aspirations will be difficult to achieve and sustain if sustainable policies for transport, electricity, water and wastewater management and the ocean economy are not put into place. This improved governance would include policies to manage demand, improve governance in utility companies, establish sustainable tariffs, and increase investment to sustain the quality of the services for the entire population. Early implementation of these reforms would help to reap their benefits during the current government's tenure.

31. There is a need to build the buffers to cope with natural hazards and design policies to mitigate their impact. Mauritius remains extremely exposed to natural hazards and this will only increase over time as climate change continues. Adequately integrating the sustainable policies of *Maurice Ile durable* will be important to build the resilience of the country. A comprehensive Disaster Risk Management and Climate Adaptation Framework can be built incrementally to mitigate the impact of future disasters at low political cost. Opportunities to exploit natural resources, from the ocean economy to the tourism industry, call for more concerted regional cooperation to ensure that these resources are sustainably preserved.

32. Improving public service delivery will require the adoption of a modern public sector approach based on continuous evaluation and strengthened accountability. Moving forward, further progress would require tackling some more politically costly reforms. Fiscal space will need to be created by increasing public resources, eliminating waste and divesting away from non-priority areas such as State Owned Enterprises (SOEs) so that public services are aligned

toward the emerging needs of the country in terms of building human capital and infrastructure. Furthermore, pension and health policies will need to be revisited to cope with growing costs related to an aging population. Implementing these policies sooner rather than later would facilitate a more even distribution of its impact among the population, which would ease resistance to policy reform in these areas.

33. The key to making Mauritius a successful inclusive high-income economy lies in improving its education system. Raising the quality of education and better aligning skills with labor market needs will help Mauritians, especially the youth, reap the benefits of economic growth in the form of expanded employment opportunities and increased income. Not only may additional public resources be needed to improve the education system but policy reforms such as implementation of nine years schooling would also serve to achieve more equitable education results so that the population at large contributes to and benefits from growing opportunities. However, efforts on this front have a high political cost and will likely pay off only in the long term. Yet, a new education system that raises quality and equity would not only help to push the country to a new development path but also break the substantial intergenerational vicious cycle of poverty that undermines opportunities for much of the bottom 40 percent of the population.

Chapter 1. Understanding poverty and vulnerabilities in Mauritius: Sustaining the middle class⁴

Main messages – Chapter 1

- *Absolute poverty in Mauritius is low and has fallen over the last five years, with the national poverty rate down from 8.5 percent in 2007 to 6.9 percent in 2012.*
- *But poverty levels are higher for female headed households as well as children and youth population. Education below secondary level is also a major explanation of poverty.*
- *Inequality has increased remarkably and the Gini coefficient after transfers increased from 0.34 to 0.37, slowing down the pace of poverty eradication. As a result, relative poverty has increased from 8.5 percent in 2007 to 9.8 percent in 2012.*
- *Income growth of the bottom 40 percent of the population has been disappointing and increased at an annual rate of 1.8 percent compared to 3.1 percent for the population at large.*
- *As a result, the middle class has shrunk and is increasingly vulnerable to falling back into poverty.*
- *The most important driver of poverty reduction is employment, and widening salaries across quintiles are the main explanation for the surge in inequality.*
- *Social transfers have been instrumental in reducing absolute poverty. Without social transfers absolute poverty would be 16.4 percent in 2012 instead of the actual rate of 6.9 percent, after social transfers.*
- *Microsimulation exercise suggests that poverty is expected to fall in the coming years, but inequality will increase.*
- *Poverty eradication and providing opportunities to gain and retain middle class status will require accelerating economic growth and a more inclusive growth path. These will require that the bottom 40 percent of the population has adequate assets and skills to benefit from growing employment opportunities.*

1.1. Overview: Poverty, shared prosperity and the middle class in Mauritius

Reductions in poverty have slowed down due to growing inequality

1. **Absolute poverty is low in Mauritius and recent economic growth has further reduced it.** Mauritius is a relatively developed economy with no people living on less than USD1.25 a day and less than 1 percent of the population living below USD2 a day. According to national statistics, absolute poverty⁵ has declined from 8.5 percent of the population in 2007 to 6.9 percent in 2012 ([Figure 1](#)). This is associated mainly with stable and relatively strong economic growth experienced over the past few years. The total number of poor individuals has also declined from 108,000 people in 2007 to 89,000 people in 2012.

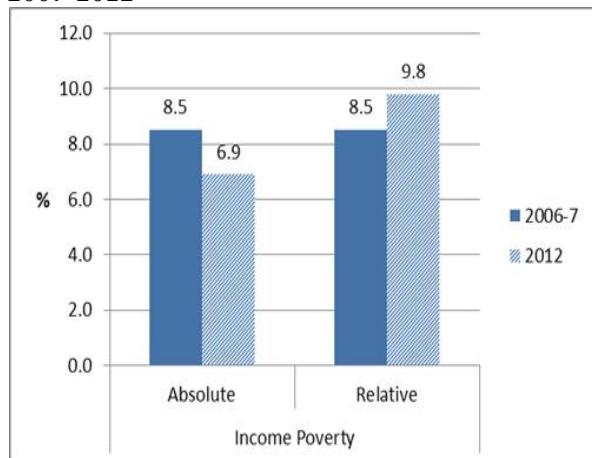
2. **Growing income inequality has increased relative poverty and slowed down poverty eradication.** In relative terms, poverty has increased from 8.5 percent in 2007 to 9.8 percent in 2012. This is associated with an increase in income disparity between those above and below the

⁴ This chapter draws primarily on the on-going work “Mauritius: Inclusiveness of growth and shared prosperity,” World Bank (2014). The work is based on the two most recent household surveys – 2012 and 2007.

⁵ Absolute poverty is defined as household living with less than 3,064 rupee per adult equivalent expressed in 2007 prices.

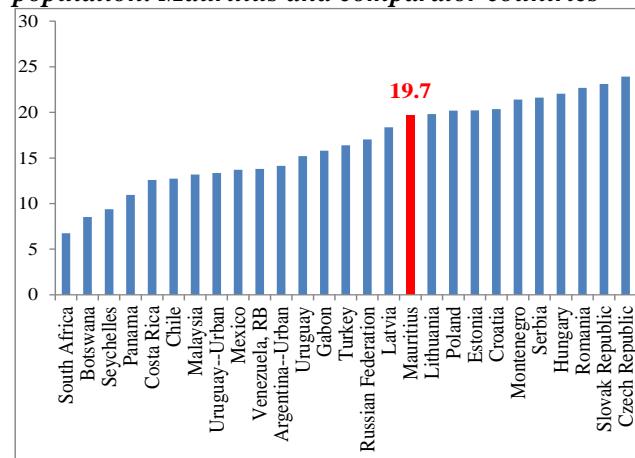
median household income.⁶ While Mauritius is among the top 25 percent in terms of Gini equality when compared to other middle-income countries, inequality has increased and the Gini index after transfers has risen from 0.34 to 0.37 between 2007 and 2012. Other inequality indices also confirm this trend. For instance, consumption among the richest 10 percent of households in Mauritius was 7.8 times that of the poorest in 2007 and increased to 8.1 times by 2012. Between 2007 and 2012, the absolute poverty headcount decreased by about 1.6 percentage points but poverty eradication would have been almost doubled had inequality remained constant during the period.

Figure 1: Income absolute and relative Poverty, 2007-2012



Source: HBS 2007, 2012.

Figure 2: Share of consumption for bottom 40% of the population. Mauritius and comparator countries



Source: Povcalnet November 2014.⁷

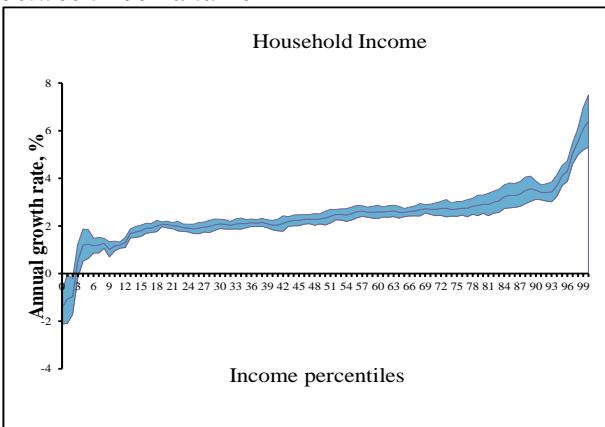
The bottom 40 percent of the population is not fully reaping the benefits of economic growth

3. Consumption for the bottom 40 percent of the population has increased at a low pace. The real consumption per adult equivalent of the bottom 40 percent of the population grew at an annual average of 1.8 percent compared to an annual average growth rate of 3.1 percent for the whole Mauritian population and stands at 19.7 percent (Figure 2). The gap between the better off and the worse off has increased over time, thus indicating that prosperity is not equally shared in Mauritius. More worryingly, those at the bottom 4 percent of the population have seen their expenditures decrease and their living standard deteriorate over time (Figure 3 & Figure 4).

⁶ The relative poverty line is calculated as a share of median income, and the absolute poverty line is based on a real income (or consumption) poverty line anchored in 2007 prices.

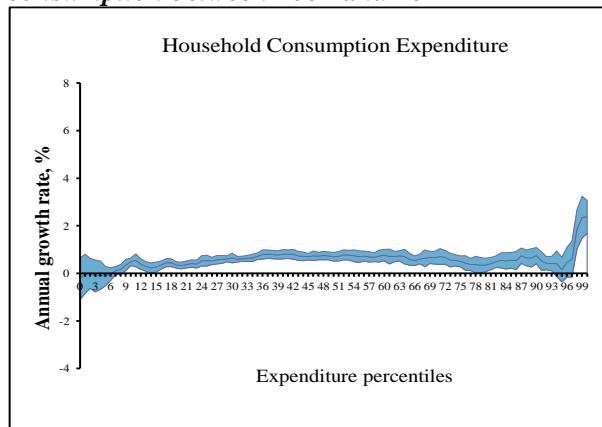
⁷ Data for Mauritius is for 2012. Latest available year for other countries from 2007.

Figure 3: Annual growth of household income between 2007 and 2012



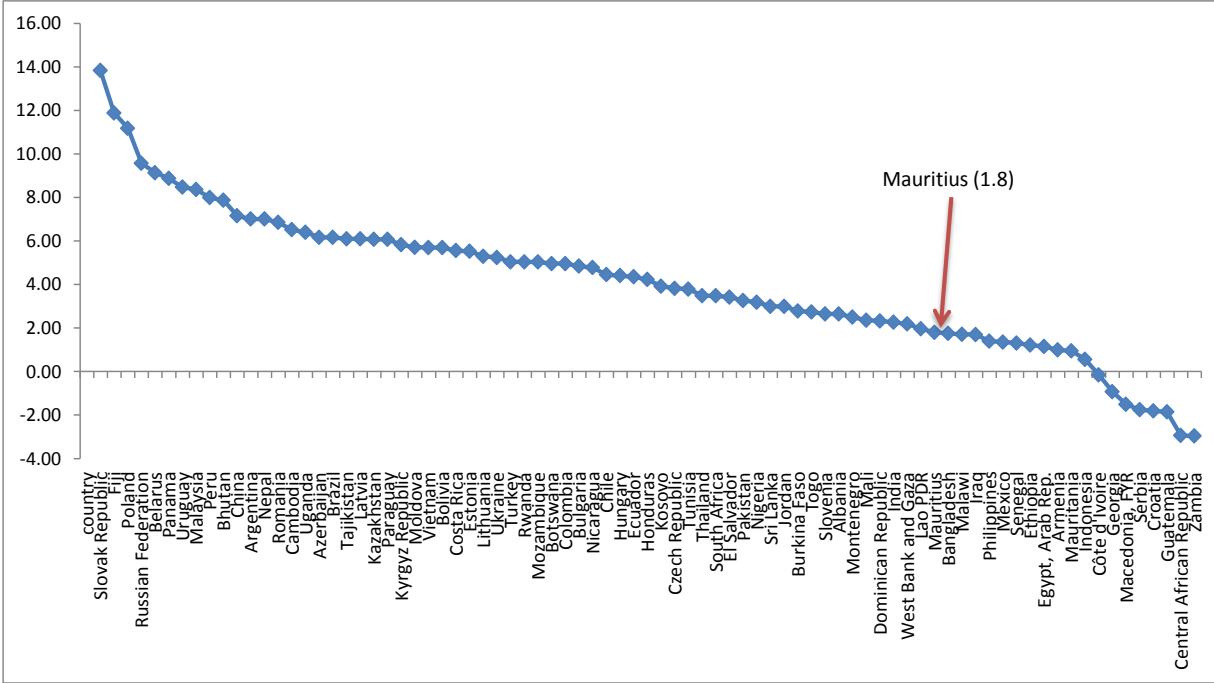
Source: HBS, 2007, 2012

Figure 4: Annual growth of household consumption between 2007 and 2012



4. **The recent limited progress of the bottom 40 percent of the population in Mauritius does not compare well internationally.** 75 percent of 81 compared countries performed better than Mauritius in terms of annual consumption growth of the bottom 40 percent of the population during the period considered. On average, the annual consumption growth of the bottom 40 percentile in Mauritius was 1.8, well below the 4.1 percent growth on average across the comparable countries with available data (Figure 5).

Figure 5: Annual consumption growth of bottom 40 percent of the population, 2007-2012

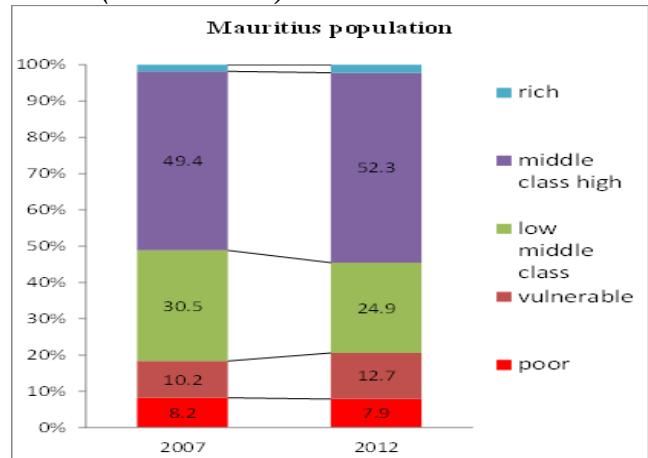


Source: Mauritius Poverty and Vulnerability Assessment, World Bank WDI and World Bank calculations. The chart shows every second country

Mauritius already enjoys a large middle class but vulnerability is growing

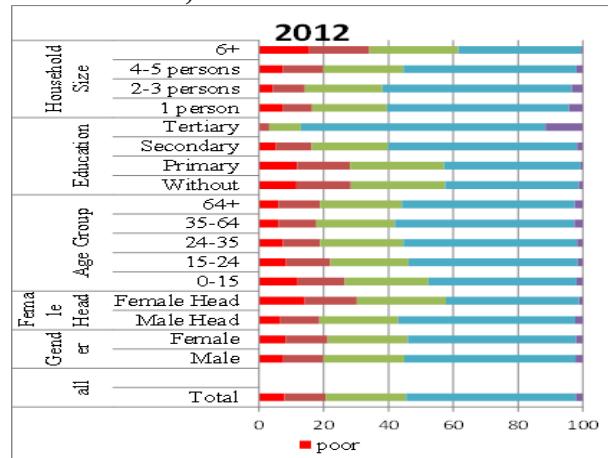
5. While a large part of the Mauritian population is considered middle class, economic vulnerability has increased. Between 2007 and 2012, the overall size of the middle class declined slightly from 79.9 to 77.2 percent of the population while the relative sizes of the rich and poor groups remained roughly the same (Figure 6). The most relevant aspect of the period is worsening income distribution among these groups. On the one hand, many Mauritians moved from the lower middle-income group into the upper middle-income group, which increased from 49.4 to 52.3 percent of the population, further consolidating their position as middle class. On the other hand, much of the population, particularly from the lower middle-income group, has moved into vulnerable groups defined as those with a 20 percent risk of becoming poor, which rose from 10.2 to 12.7 percent of the population over the same short period. More and more, those at the bottom 45.5 percent of the population (poor, vulnerable, and low middle class) strain to retain or achieve middle class status.

Figure 6: Distribution of population by income classes (2007 vs. 2012)



Source: HBS 2007, 2012

Figure 7: The middle class: demographic characteristics, 2012



Source: HBS 2012

Box 1: Why the middle class is important for Mauritius

The development of high-income countries is often attributed to a flourishing middle class. A number of studies have shown that economic growth is higher in countries that have a larger middle class. This class is a source of vital inputs for the entrepreneurs, who delay consumption, create employment and increase productivity for the rest of society. Also, the higher income of the middle class raises aggregate demand, which in turn increases investment with positive spillovers to further increase income levels for the entire society. The middle class also has a vested interest in a stable society that accumulates savings and invests in human and social capital. Accordingly, they advocate good governance, rule of law, and economic stability.

There is no universal consensus as to how to define and measure the middle class. Most studies define the middle class based on income or consumption and then compile characteristics of those falling into that class. Many have tried to define and characterize a global middle class and to distinguish it from the global poor. Across the globe, there is evidence that those in the middle class are more likely to hold a steady job. Also, their share of consumption spent on food is significantly lower than the poor and they spend more on consumer durables, larger houses, and more amenities. And while international evidence suggests that the share of income devoted to education remains the same as income rises, the share of income devoted to health care increases.

In this work, the Mauritian middle class is defined as those households earning above 5,821 rupees per capita, which implies that they have a 10 percent probability of falling into poverty. The vulnerable are defined as those households earning above 4,097 rupees per capita in 2007 prices, which implies that they have a 20 percent probability of falling into poverty.

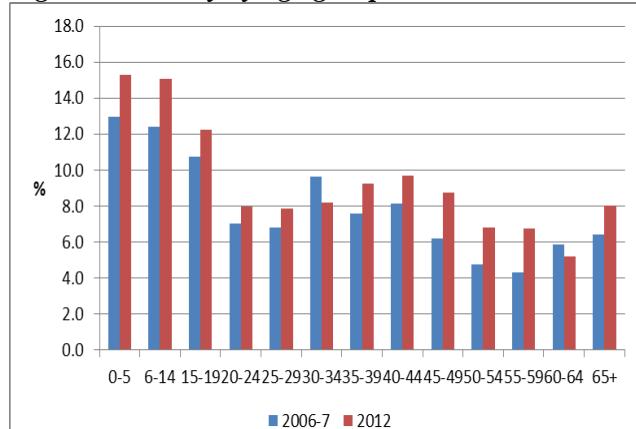
1.2. Who are the poor and the less well off in Mauritius?

Poverty is concentrated in children, large families, female-headed households, and those with low levels of education

6. **Poverty has a predominantly young face.** Poverty declines with age, and children below 15 years old experienced the highest incidence of poverty ([Figure 8](#) & [Figure 9](#)). Furthermore, poverty incidence for children has increased over time.⁸ Poverty incidence was also more evident among individuals living in households headed by younger people and it has increased substantially between 2007 and 2012, from 25.6 percent to 40.5 percent ([Figure 10](#)). Younger household heads were likely still at school, had little labor experience, and therefore had difficult access to good employment opportunities.

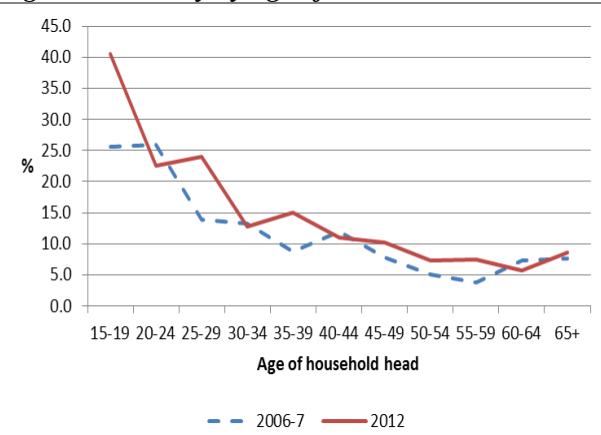
⁸ Child poverty refers to children living in poverty. This applies to children that come from poor families or orphans.

Figure 8: Poverty by age group



Source: HBS 2007, 2012

Figure 9: Poverty by age of head



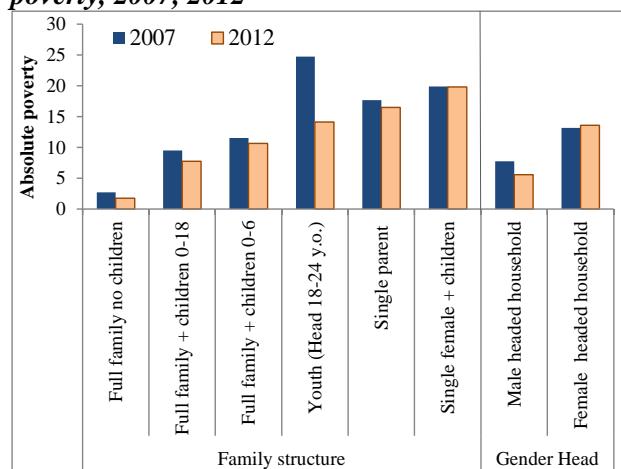
Source: HBS 2007, 2012

7. **Bigger households with larger dependency ratios are significantly more likely to be poor, particularly those living in households with seven or more members.** The poor, compared to the non-poor, lived in bigger households and with a larger number of children, i.e. they live in households with larger age-dependency ratios. In 2012, poor families had an average household size of 4.5 persons compared to 4.2 for the overall population. There was also a high share of poor people in single member households.

8. **The incidence of poverty more than doubled among people living in female-headed households and the gender gap has increased.** Poverty was reduced from 7.8 to 5.6 percent among those living in male-headed households (Figure 10). However, female-headed households saw an increase in poverty from 13.2 percent in 2007 to 13.6 percent in 2012, increasing the gap between female and male-headed households. Two factors help explain this growing disparity. First, while more than 90 percent of male heads of households are married, in female headed households that figure is only 10 percent and 60 percent of them were widowed. Second, labor participation rates among females are significantly lower than their male counterparts, which may further limit their access to labor income.

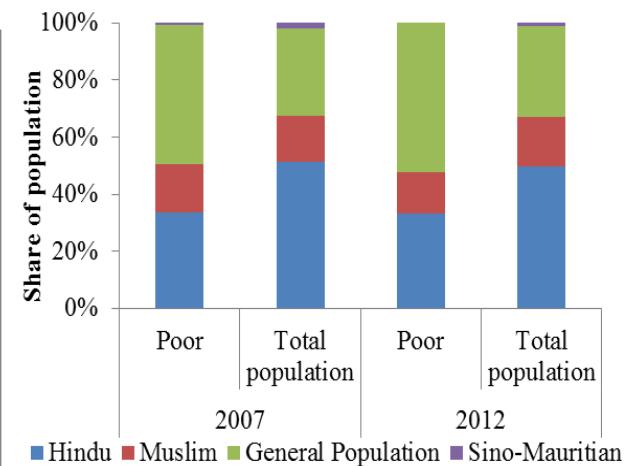
9. **Family structure also has a large and growing influence on the likelihood of being poor, with the poverty rate in single-parent families higher than that of families with both parents.** 16.5 percent of households headed by single-parent families are poor compared to just 7.8 percent of married-couple families with children. This is more critical for single mothers with children, of which 19.8 percent of them are poor. Overall, households with young children under age 6 are more likely to be living in poverty or to be low-income compared to those with children under age 18. The lowest poverty is observed among full families without children. Young families headed by 18-24 year olds have higher poverty, but their situation has improved since 2007.

Figure 10: Family composition and income poverty, 2007, 2012



Source: HBS 2007, 2012

Figure 11: Ethnicity and poverty, 2012



Source: HBS 2007, 2012

10. Growing poverty has not been homogeneous across ethnic groups. Mauritius has four main ethnic groups: Hindus, Muslims, Sino-Mauritians, and General Population, an official designation made up African, European, and other ethnicities. In 2012, Hindus constituted the biggest share of the population (50 percent), followed by General Population (32 percent), Muslims (17 percent), and Sino-Mauritians (1 percent) (Figure 11). Yet, Sino-Mauritians were the least poor and improved substantially between 2007 and 2012.⁹ Hindus and the General Population became slightly poorer over time and contributed most to the share of poverty. Between 2007 and 2012, the relevance of ethnic background between the three biggest ethnic groups to determine income and poverty has become less significant, although the gap of all the three ethnic groups with the Sino Mauritians has widened.

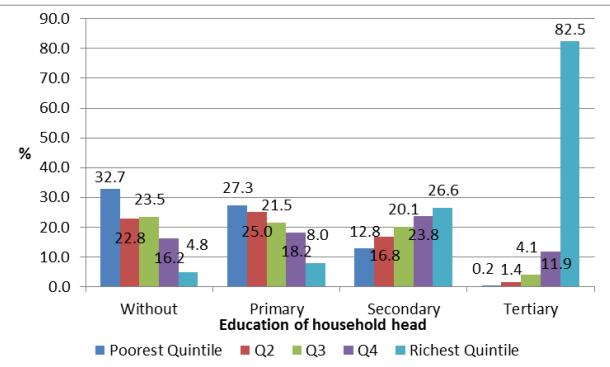
11. Poverty is concentrated among those households whose head had less than secondary education. Having a head of household with only primary school completed was not statistically different from living with an uneducated head of household. This is particularly relevant as around half of all households have a head with less than secondary education. Education only mattered for poverty reduction from secondary level and above. On the one hand, of people living with heads of household with no education, 33 percent were part of the poorest quintile while only 5 percent were part of the top quintile (Figure 12). On the other hand, of people living with heads of household who managed to complete the tertiary education level, 83 percent were part of the richest quintile. Among people living with university educated heads there was no poverty.

12. Poverty is associated with higher unemployment and lower labor force participation. The labor market participation rate tended to increase with income and so did the employment rate. For the poorest 10 percent or decile, the participation rate was 46 percent among males and

⁹ The relatively better living standards of the Sino-Mauritians may be explained by their educational attainment and labor market prospects. Sino-Mauritians had the highest share of people with secondary and tertiary education, and few had no education. They also had the highest proportion of people employed, with the highest share in managerial and professional occupations. These characteristics have put Sino-Mauritians in an advantageous position to better benefit from the effects of economic growth. As expected, median monthly earnings among this population group were the highest and observed the largest percentage increase over time.

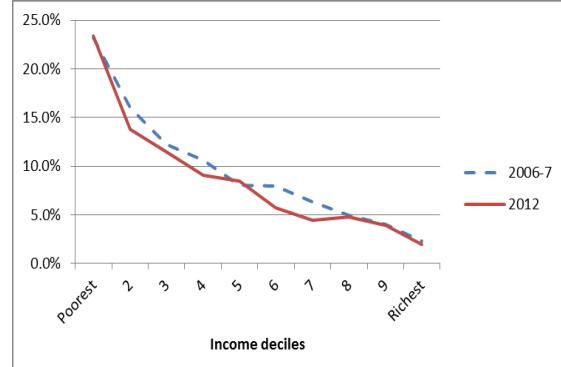
24 percent among females compared to 65 percent for males and 52 for females for the richest decile. The employment rate for the poorest decile was 26 percent in 2012 reaching 57 percent for the richest decile. The differences in unemployment rate between the bottom and top deciles are more dramatic, with 23 percent unemployment rate for those in the bottom decile compared to just 2 percent for the top income decile (Figure 13).

Figure 12: Education and income



Source: HBS 2007, 2012

Figure 13: Poverty and unemployment



Source: HBS 2007, 2012

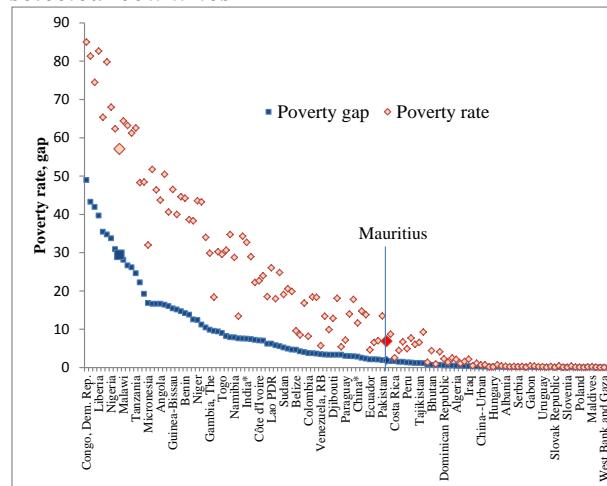
13. **Mauritius's poverty depth has decreased and remains low internationally.** Poverty gap measures¹⁰ are used to account for the depth of poverty, or how far the poor are from the poverty line. The poverty gap (in relation to the relative poverty lines) was reported at 1.7 percent in 2012, a decrease of 0.2 percentage point from 2007. Overall, the level of poverty gap and poverty headcount is significantly lower than in other African countries¹¹ (Figure 14).

14. **Regional differences are evident in households' welfare and level of poverty rates.** Figure 15 presents poverty map for Mauritius. The highest poverty prevalence is in the island of Rodrigues and Port Luis, where poverty affects more than 10 percent of the population compared to the lower levels of poverty observed in Pamplemousses and Plaines Wilhems districts, where poverty affects less than 6 percent of the population.

¹⁰ Poverty gap is the mean shortfall from the poverty line (counting the non-poor as having zero shortfall), expressed as a percentage of the poverty line. This measure reflects the depth of poverty as well as its incidence.

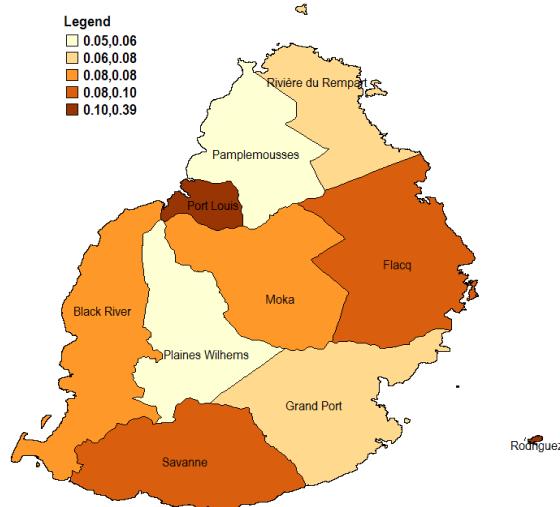
¹¹ The benchmarking aims at comparing Mauritius with countries that Mauritius emulates (i.e. Singapore, Malaysia) as well as other middle income countries. In certain instances, additional factors such as the high unit cost in the provision of infrastructure services of small island states, make relevant to compare Mauritius with middle income small island states. Also, for innovation and knowledge comparisons some comparable small states have been selected given the relatively disadvantage of small size in generating economies of scale critical to accelerate knowledge.

Figure 14: Poverty headcount and poverty gap, selected countries



Source: HBS 2012 and Povcalnet for the rest of the countries

Figure 15: Regional poverty in Mauritius



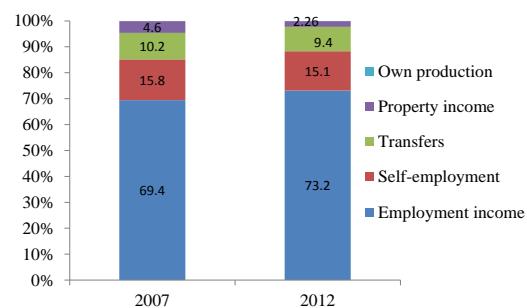
Source: HBS 2012

Employment is the most relevant factor affecting income inequality

15. Employment is the main determinant for escaping poverty and joining the middle class. Employment is the main source of wealth creation for Mauritians (Figure 16) and a key determinant for poverty reduction as 35 percent of those unemployed are poor or vulnerable compared to only 17 percent of those employed. Furthermore, employment is a major determinant for joining the middle class in Mauritius, as 83 percent of those employed belonged to the middle class.

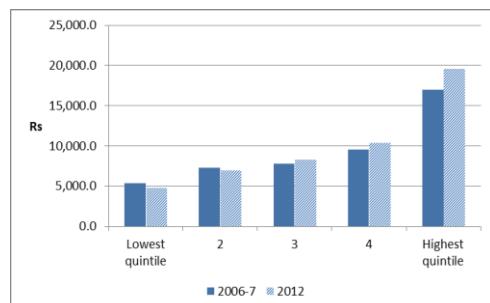
16. Salaries have become more relevant to explaining income inequality as median monthly earnings across income quintiles have tended to widen. Those in the poorest quintile received a median 5,400 Mauritian rupees (MUR) in 2007 from employment or self-employment income (Figure 17). By 2012, median monthly earnings for this population group had declined by 11.6 percent. Those in the second income quintile also experienced a decline in earnings. However, the monthly earnings of the richer population groups have increased over time. For the highest income quintile in particular, median monthly earnings have increased by 15.3 percent between 2007 and 2012.

Figure 16: Inequality by income sources



Source: HBS 2007, 2012

Figure 17: Median monthly earnings (Rs.)



Source: HBS 2007, 2012

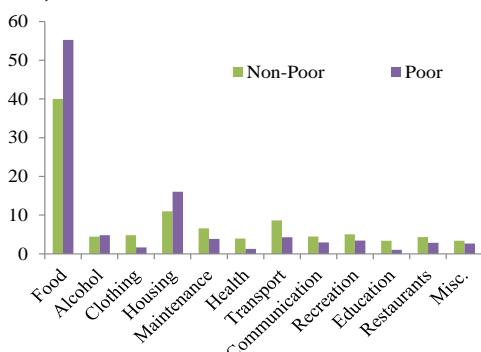
17. Being employed in growing sectors of the economy is also key to gaining middle class status. While 84 percent of those working in services are middle class, only 75 percent of those employed in agriculture or related services are in the middle class. Of those employed in agriculture, 25 percent were either poor or vulnerable, compared to only 12 percent of those in services. Those employed in trade had the largest increases out of poverty and into the upper middle classes between 2007 and 2012.

18. Overall, government transfers made an important contribution to inclusive growth in 2012. Existing social insurance and social assistance schemes have managed to decrease the poverty headcount in 2012 from 16.4 percent (without transfers) to 6.9 percent of the population (after transfers). Also, the poverty gap in 2012 was reduced from 6.5 percent (without transfers) to its actual rate of 1.7 (after transfers). It has also helped to mitigate the Gini coefficient from 0.41 that would exist in Mauritius in 2012 if no public transfer would be considered to its actual 0.37 after transfers. These social protections accounted for 18.4 percent of consumption for the bottom quintile and 2.1 percent for the top quintile.

19. Demographic factors also played an important role in reducing poverty. As a result of declining fertility, the average household size has been reduced between 2012 and 2007, primarily in poor households. Subsequently, the dependency ratio for children and elderly fell from 48 percent to 44 percent. This by itself explains around 0.2 percentage points of the poverty reduction between 2007 and 2012. Certain changes in the size and composition of the middle class over the five-year period considered also seem to be due to structural factors such as smaller families, aging of the population, and increased educational levels, or unemployment.

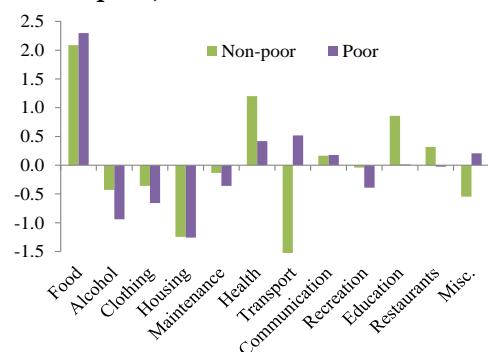
20. Other external factors, such as impact of international food prices, have affected the poor. More than half of total consumption of poor households is food consumption, a share that has increased between 2007 and 2012 ([Figure 18](#)). This increase, especially among the poor, is associated with high food price inflation, which increased by 2.3 percent between 2007 and 2012, approximately 8 percent above the average increase in the CPI ([Figure 19](#)). The poor remain sensitive to food price shocks, as they are less able to scale down or substitute their food consumption.

Figure 18: Consumption share, poor vs. non-poor, 2012



Source: HBS 2012

Figure 19: Increase in consumption share poor vs. non-poor, 2007-2012



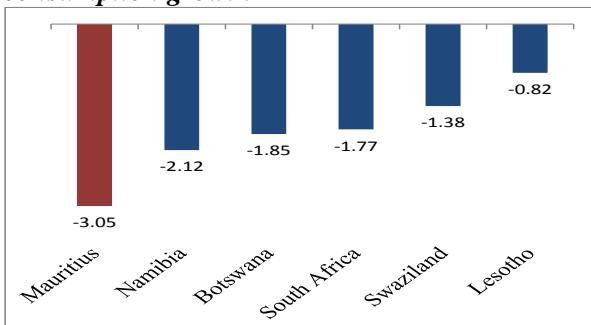
Source: HBS 2007, 2012

1.3. Looking ahead: how to tackle poverty while increasing the middle class

21. Rapid poverty reduction requires more growth and a more pro-poor pattern of growth. Mauritius has one of the highest elasticities of poverty to consumption expenditures in Africa,¹² meaning that a relatively high proportion of the population is located close to the poverty line and consumption growth rates translate into high poverty reduction (Figure 20 & Figure 21). Economic growth, however, is not sufficient to eradicate poverty in Mauritius. Inequality reducing policies in conjunction with fast economic growth would accelerate poverty reduction in Mauritius. Thus, a consumption growth rate of 4 percent per annum would take between 7 to 9 years to halve poverty, assuming no change in the distribution of aggregate consumption. However should inequality increase as it has in the recent past, it will take close to 15 years to halve poverty. In a positive scenario, halving the poverty could be achieved in a 4-year period if the growth is associated with a 2 percentage point reduction in the Gini coefficient.

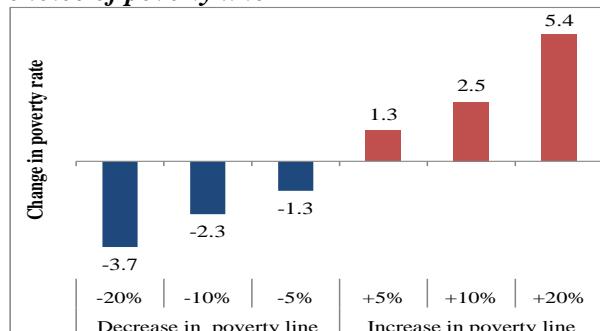
22. A substantial share of households are vulnerable should broadly-shared economic growth slows down. The high poverty to consumption expenditures elasticity in Mauritius means that relatively small adverse changes in consumption growth may also have a strong impact on poverty. The majority of households which have escaped poverty remain vulnerable and are at risk of falling back into it. Also, while the upper middle class has grown to reach 55 percent of the total population, the low middle class is struggling to retain its status and some of them are falling back into the vulnerable group. Ensuring that the progress achieved in poverty reduction and creating a middle class is not reversed will require unlocking the potential to accelerate economic growth. This will need to be complemented with policies to ensure that the bottom 45.5 percent of the population – the poor, the vulnerable and the low middle class, not only contribute more to economic growth but also benefits further of it.

Figure 20: Elasticity of poverty rate to per capita consumption growth



Source: WB calculations. Latest survey for each SACU country

Figure 21: Sensitivity of poverty rate to the choice of poverty line



¹² Overall, Africa-wide \$2.0 a day elasticity is less than 1, well below Mauritius elasticity. See Rati Ram, 2012 “Income elasticity of poverty in developing countries: updated estimates from new data” Applied Economics Letters, volume 20, Issue 6, pages 554-558.

Box 2: Analyzing alternative poverty and inequality outcomes

Alternative poverty and inequality outcomes can be associated with sector growth trajectories, changes in demographic characteristics, and labor dynamics. A summary of the assumptions is presented in the table below, mainly in terms of the continued expansion of the tertiary sector and further deterioration in primary and secondary sectors.

	2012	2015	2019
GDP cumulative growth (2012=100)	Base	10.6	29.2
GDP average yearly growth rate		3.4	3.7
Sector GDP Cumulative Growth Rates			
Primary	Base	11.7	29.5
Secondary	Base	3.2	15.0
Tertiary	Base	13.3	34.0
Sector employment shares			
Primary	7.7	6.7	5.9
Secondary	27.8	25.5	23.3
Tertiary	64.5	67.8	70.9
Total share	100	100	100
Population Growth rate	Base	0.9	2.2
Unemployment rate	8.0	8.0	8.0

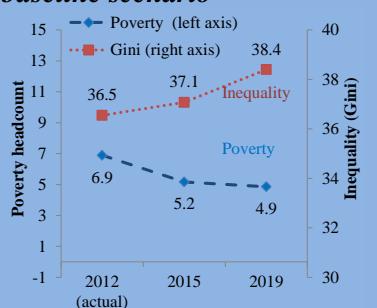
Source: World Bank calculations

In the baseline scenario poverty is expected to gradually decline while inequality will increase. Consumption poverty is expected to decline from 6.9 percent in 2012 to approximately 5.2 percent in 2015, and further fall to 4.9 percent in 2019, mainly driven by the rapid growth of tertiary sectors (Figure 22). Yet, this will be accompanied by growing consumption inequality, measured by Gini coefficients, from 0.37 in 2012 to 0.38 in 2019, mainly driven by higher disparity between sectors and continued relative deterioration of the primary sector. The projected increase in inequality will have adverse effects on the pace of poverty reduction.

Two policy interventions are analyzed for illustrative purposes: (i) a gradual expansion by 30 percent of social protection spending; and (ii) a 20 percent increase of employment productivity in the tertiary sector and related reduction in unemployment. Based on the model parameters, the most significant direct impact on poverty could be attributed to the social protection expansion (Figure 23).

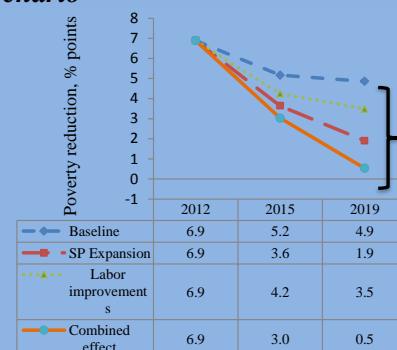
Additional economic growth would significantly accelerate the pace of poverty reduction, although the distribution of income may become more unequal due to sector reallocation. This is why both human development and redistributive policies have a substantial role to play.

Figure 22: Poverty and inequality projections, baseline scenario



Source: World Bank projections

Figure 23: Poverty simulations based on selected policy scenario



Chapter 2. Assessing the drivers of growth in Mauritius

Main messages – Chapter 2

- *Mauritius has had large and diversified economic growth with the backing of solid institutions and outward looking industrial policy.*
- *Successful liberalization policies in the 2000s facilitated resource reallocation toward the growing sectors of the economy.*
- *With the end of preferential access and declining productivity, the economy depended on private consumption to sustain growth, putting pressure on households' savings and raising doubts about the sustainability of the current economic model.*
- *The country innovation capacity is not at par with other upper middle income countries and therefore, despite growing FDI, there is limited transfer of knowledge.*
- *Skills gaps undermine the effort to move toward more value added sectors*
- *Relatively good connectivity can be at risk if management of infrastructure is not improved through better efficiency in port operations, more open air access and more competition in ICT.*
- *New opportunities in the ocean economy can revitalize economic growth and shared prosperity but will need to be accompanied with sector specific reforms.*
- *Slowdown of economic reforms undermine employment creation, especially in low skilled sectors, including hampering the opportunities of SMEs to grow.*

2.1. Mauritius growth model in perspective

A history of robust growth based on solid institutions, a strong social contract and outward looking industrial policy

23. **Mauritius has experienced substantial growth since independence.** GDP expanded at an annual average of 5.3 percent between 1969 and 2013 or 4.4 percent in per-capita terms. Such rapid growth was made possible by strong institutions created at the time of independence and practical and successful policies subsequently implemented. Mauritius' rapid growth in the 1980s and 1990s was built by industrial policies that shaped the way for economic diversification and employment creation. At the time of independence, agriculture, mainly sugar cane production, accounted for more than 22 percent of Mauritius' GDP; by 2013 economic transformation has brought it to merely 3 percent, compensated by a boom in manufacturing in the 1980s and the subsequent development of the services sector.

24. **Mauritius' social contract is behind its successful inclusive economic model.** At the time of independence, ethnic fragmentation, wealth concentration, mono-crop economy, high population growth and limited land and natural resources weighed heavily against the chances of the country to develop in a sustainable and equitable way. Mauritius' social contract was the response to this complex reality, and in turn it has shaped the development of the country in terms of wealth creation and shared prosperity. Ethnic tensions were strong and the political system ensured that all ethnic groups were adequately represented in the National Assembly while the public sector ensured that no ethnic group was left economically behind. A balance was struck to guarantee that owners maintained their assets to create wealth while the political system established a welfare state to redistribute wealth and respond to the needs of the majority of the population. Furthermore, close public-private dialogue allowed the government to provide the

private sector with an adequate environment for reallocation of resources into new growing sectors.

25. A practical industrial policy proved successful by channeling limited resources toward export-oriented sectors. Mauritius has pursued a growth strategy aimed at integrating with the global economy and diversifying its production and exports to supply the external market. Prior to the 1990s, relatively restrictive import policies complemented export-processing zones (EPZ) with duty free access for imported inputs, tax incentives, and a segmented labor market. Competitively valued exchange rates also helped to compensate for some of the import tariffs. In addition, trade diplomacy exploited substantial preferential access in textiles and sugar sectors, which resulted in rents of, respectively, 7 and 4.5 percent of GDP per annum in the 1980s and 1990s. Subsequently, a Double Taxation Avoidance Treaty with India was responsible for the development of the offshore financial sector, further supporting diversification toward the services sector.

26. Industrial policies created sustained domestic savings that translated into high investment levels, including in human capital. High levels of domestic savings have been instrumental in sustaining high levels of capital accumulation, which accounted for around 30 percent of total economic growth since 1960. When domestic savings declined, they were complemented by growing FDI inflows. Human capital explains almost half of all GDP growth since 1960, mainly through increasing education attainments supported by public and private education. Larger human capital has over time compensated for slowing labor force growth due to aging population and emerging unemployment. A conducive business environment has contributed to economic diversification and high total factor productivity, which explains on average 20 percent of economic growth in Mauritius during the last 50 years.

27. Mauritius has had high (but declining) productivity gains and total factor productivity (TFP) has contributed to growth over the past 23 years. Productivity has contributed around 2.9 percentage points to annual growth between 1990 and 2013, which represents 90 percent of total economic growth ([Figure 24](#) & [Figure 25](#) & [Figure 26](#)). Productivity growth contribution has declined slowly but steadily over this period, particularly since 2005. Demographic factors have also had a limited impact on overall growth in a context of reduced population growth. Most of this productivity growth is driven by the services sector, while manufacturing also has a positive contribution in the context of shedding jobs. Both manufacturing and agriculture have shed substantial employment at a rate of roughly 0.6 and 0.4 percent per year, respectively.

Figure 24: Decomposition of per capita value added growth, 1990-2013

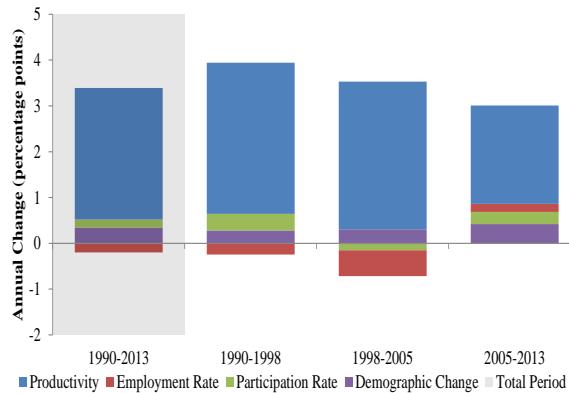
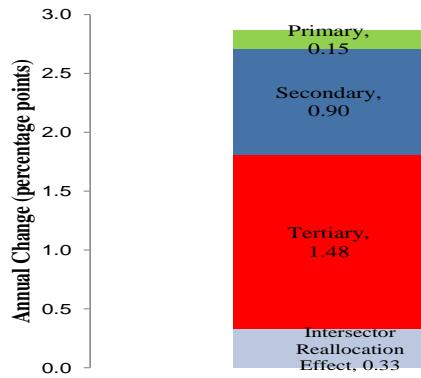


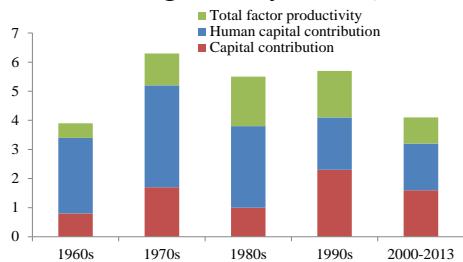
Figure 25: Decomposition of productivity growth by broad sector, 1990-2013



Sources: Various, including WDI, Statistics Mauritius. Note: Shapley decomposition analysis

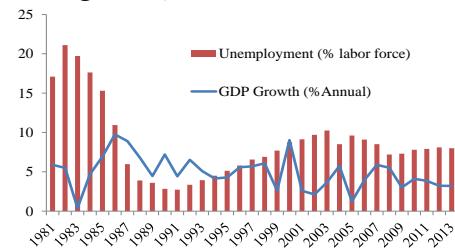
28. **By the mid-2000s, Mauritius was confronting a structural challenge to its economic model.** The rapid growth in low skill, labor-intensive exports that had powered the Mauritian miracle in the 1980s was running out of steam. Labor shortages had already emerged in the early 90s driving up real wages and undermining competitiveness in low skill sectors. Rigidities in the economy made it difficult to transfer resources to emerging sectors. From 2000, exports had stagnated, the investment rate slumped and labor market rigidities led to unemployment rising from below 3 percent in 1991 to 9.5 percent in 2005 (Figure 27). Then, in the middle of the decade, a “triple trade shock”—the loss of textile and sugar preferences and soaring oil prices—further hurt economic growth and put the balance of payments under pressure. This triggered a set of reforms to set the economy in new growth path (Box 2).

Figure 26: Average contribution to annual GDP growth by decade, 1960-2013



Source: Mauritius: the driver of Growth- can the past be extended? K. Sviridzenjka and M. Petri, IMF

Figure 27: Unemployment rate and real GDP growth, 1981-2013



Source: Statistics Mauritius

Box 3: Building consensus to accelerate reforms

The Mauritius institutional setting is prone to building large consensus at times of great need, followed by more “quiet” periods where policy making is broadly adjusted in a more technocratic way. The last such period of broad reform took place between 2006 and 2010 after the traditional growth engines, which had been declining for some time, came under additional external pressures, such as the end of the Multi-Fiber Agreement (MFA) for textiles in 2004, the phase-out of the EU-guaranteed price of sugar between 2006 and 2010, and sharp rises in oil and food prices. Not only did GDP growth enter a structural decline but macroeconomic stability was at a greater risk with increased public debt. Private sector apprehensions were matched by growing social pressures associated with rising unemployment rates, at a time when increasing public debt made it difficult for the government to postpone a solution.

Mauritius’ political class knew what needed to be done. In fact, the National Long-Term Perspective Study¹ started in 1990 with a goal of opening up and diversifying the economy by moving towards high value-added, skill and knowledge intensive service sectors. Successive governments moved in that direction but piecemeal reforms did not tackle fundamental and politically complex bottlenecks.

The mounting economic and social pressure and the limited number of financially sustainable alternatives gave a clear political mandate to a new government to implement a bold package of reforms around four pillars: consolidating fiscal performance and improving public sector efficiency; enhancing competitiveness; improving the business climate; and widening the circle of opportunity through participation, social inclusion and sustainability.

Implementation was very successful and brought fundamental improvements to the macroeconomic policy framework and the overall regulatory environment. Economic growth and employment increased, ensuring that gains were broadly and quickly shared, helping to consolidate consensus and bring immediate public support around the government’s program. Furthermore, the reforms built resilience as the economy reoriented toward more competitive sectors and created fiscal space. This was instrumental in cushioning the impact of the 2008-2010 global crisis, as the private sector was in better shape, and the government could adopt a stimulus package of about 5 percent of GDP over 2009-10.

Today’s situation is different, which helps to explain the difficulties in mustering consensus to implement a new set of bold reforms. The issues are less about dealing with a major economic crisis and more about achieving new aspirations, i.e. becoming a high-income economy in the medium term by bringing the private sector to establish partnerships in existing areas where specific and micro reforms are urgent and necessary for unlocking efficiencies. This also calls for embracing an innovation approach in sectors where both the public and private sector need to collaborate closely to elaborate an innovation policy in areas where there is a common agreement on impact and investment: attracting technology players in e-transactional technology, e-learning, aquaculture, and renewable power generation.

Yet, the impetus of the previous reforms is still being felt in the economy, and while economic growth is subpar, it is sizeable in the international context. However, policy makers should not underestimate the brewing social challenges, with a strained middle class and increasing vulnerabilities. Furthermore, many of the pending reforms will not likely translate into immediate gains and will only pay off in the medium term, leaving the implementing government to bear all the political costs. These challenges call for a renovated impetus to cope with the short-term political costs while the reforms bear their fruits.

A more liberalized economic model to foster higher value economic sectors

29. A sweeping liberalization policy was implemented beginning in 2005. The favorable tax and regulatory environment that was previously provided exclusively to EPZs was expanded to the entire economy, opening up the economy to further competition, eliminating distortions, significantly curtailing custom tariffs and trade barriers, simplifying the tax system with tax rates set at 15 percent, and simplifying labor and business regulations. In the process, Mauritius bolstered its credentials as a business friendly economy, leading to increased FDI, reinvigorated economic growth in high value-added sectors, and lower unemployment. Along with these structural reforms, the government also dealt with high public deficits and a rising public debt, removing the medium-term threat to macroeconomic stability.¹³ These reforms were also

¹³ A new Public Debt Management Act enshrined the medium-term sustainability of public finances and as a result, public debt was reduced from 70 percent in 2005 to 54 percent in 2008.

instrumental in building the economic resilience and fiscal space to deal with the challenge of the 2008-10 global economic crisis.

2.2. Recent growth trends

Significant reallocation of resources toward the growing sectors of the economy

30. **Business creation in emerging sectors has been supported by successful facilitation of the business environment.** The incorporation of new businesses almost quadrupled between 2002 and 2008 after a period of relative stability (Figure 28). In fact, between 2007 and 2012, 35 percent of all firms present in the Registrar of Companies were registered as new incorporations, in large part due to the successful facilitation of the business environment. In 2008, Mauritius made starting a business faster by implementing a centralized database linking the company registry with tax, social security, and local authorities, reducing the number of days required to start a business from 46 to 6 (Figure 29). As a result, the cost of starting a business in 2013 was only a third of that in 2005. These reforms resulted in a reallocation of resources toward construction and services industries and a relative decline of textile firms.

Figure 28: Number of new incorporations, 1997-2011

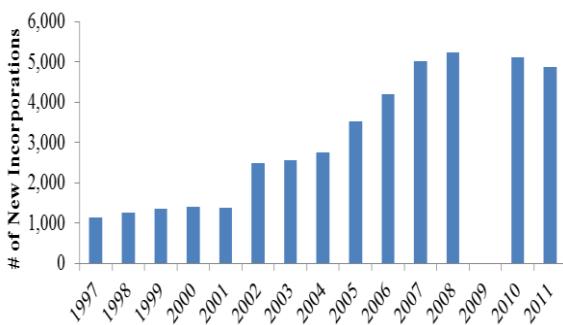
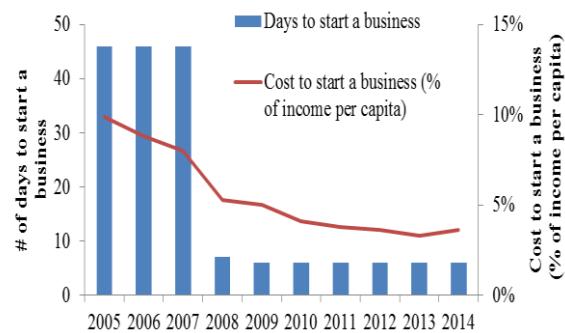


Figure 29: Ease of starting a business, 2005-2014



Source: Mauritian Company Registrar and World Bank staff calculations

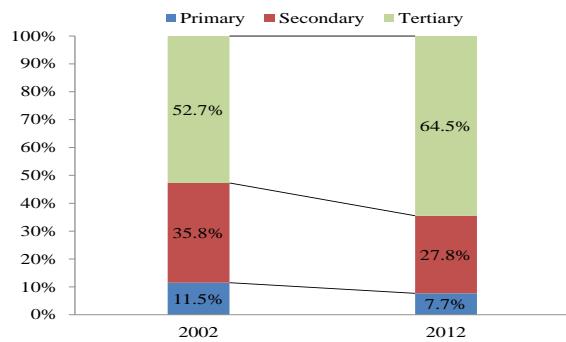
31. **Successful labor market reforms implemented in the mid-2000s have facilitated labor reallocation to growing sectors.** The reforms, particularly the Employment Rights Act and the Employment Relations Act of 2008/2009, eased labor market regulations and high costs for job termination. Key to these reforms was the introduction of collective bargaining to determine the terms and conditions of employment. These reforms supported the resiliency of the economy during the 2008 crisis and employment was created in the more productive services sectors compensating for jobs lost in the textile and agricultural sectors (Figure 30).

Private investment is declining as productivity growth slows down

32. **Private investment is declining in a context of low capital productivity.** Capital productivity declined between 2002 and 2012 by 7 percent leading to the reduction of private investment as share of GDP from 27.3 percent of GDP in 2008 to 23.2 percent in 2013. Productivity gains have been declining during the last decade and they are negligible today. Economic growth in Mauritius since 2003 has been driven in large part by capital accumulation

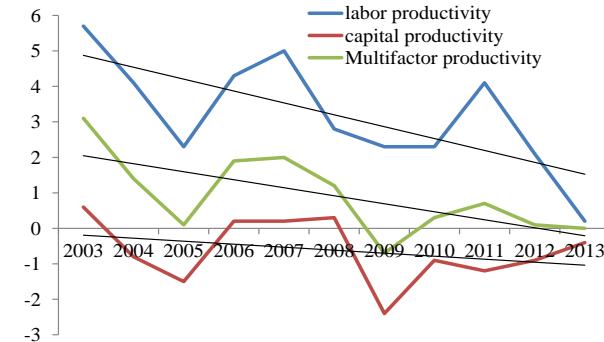
rather than labor growth. While labor productivity and multifactor productivity contributed significantly to GDP growth prior to the 2008 global crisis, they have had to compensate for negative capital productivity since the crisis. Even labor productivity and multifactor productivity have been trending down and by 2013 they showed no progress, attributing all economic growth to additional input accumulation, a situation difficult to sustain moving forward ([Figure 31](#)).

Figure 30: Employment composition per sector, 2002-2012



Source: Statistics Mauritius

Figure 31: Annual productivity growth in Mauritius, 2003-2013



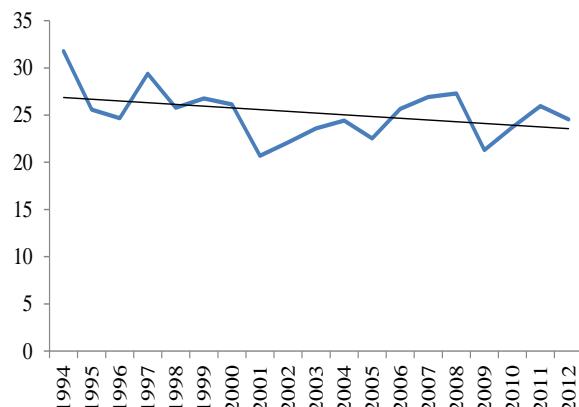
Source: Statistics Mauritius, Productivity and Competitiveness indicators

33. **While Mauritius' business regulatory environment is among the best in the world, some underperforming areas could be reformed to further cut red tape and stimulate investment.** Most global competitiveness rankings, such as the World Bank Group's *Doing Business* index and the World Economic Forum's *Global Competitiveness Report*, recognize Mauritius as the most business-friendly and competitive economy in Sub-Saharan Africa and among the best in the world.¹⁴ Despite these advantages, Mauritius' gross investment rate has slightly declined since 1994, but is on par with the upper middle-income average ([Figure 32](#) & [Figure 33](#)). While the business environment in Mauritius is considered above regional standards in areas like company registration, paying taxes and cross-border trade, other areas could benefit from additional reforms such as construction, property registration, and judicial infrastructure.¹⁵ Also, strengthening the performance of import and export promotion institutions, as well as accelerating efforts to strengthen the investment climate, minimizing red tape and promoting administrative simplification could further support efforts to move towards more innovative sectors. Furthermore, current efforts to improve the overall business environment may create marginal gains and the government could further work with the private sector to get feedback about "micro" constraints at the sector level that hold back much of the investment and employment potential.

¹⁴ In the World Economic Forum's 2014-15 *Global Competitiveness Report* Mauritius moved up by six positions to 39th place, surpassing South Africa and Rwanda. Overall, the country's relatively strong and transparent public institutions were ranked 36th, with clear property rights, strong judicial independence, and an efficient government ranked 26th. The World Bank Group's *Doing Business* index ranks Mauritius at the 28th spot, and is the only African economy in the top 30 list of the index.

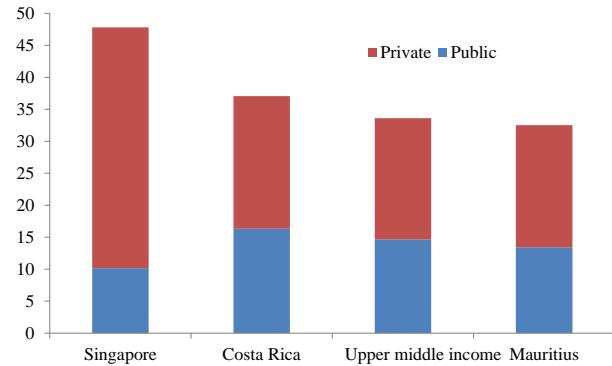
¹⁵ For example, in the area of construction permits, seeking a connection to the wastewater network leads to a waiting list that can take between 6 and 9 months due to the agency's "free house connection" policy. Regarding property registration, while efforts to computerize the registry records have improved processing times, issues relating to valuation along with transaction costs as high as 10 percent of property value remain bottlenecks for the private sector. Finally, ailing court infrastructure in Mauritius negatively impacts their efficiency and could benefit from significant improvement and investment, e.g. the e-judiciary system which was implemented by the Supreme Court's commercial division but has yet to be implemented widely.

Figure 32: Gross investment rate, 1994-2012



Source: WBI

Figure 33: Public and private investment, Mauritius and peer countries, 2007-2011

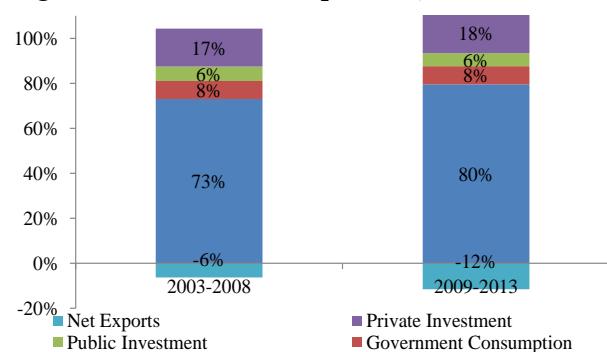


Source: WB and Statistics Mauritius

A shift to consumption is putting pressure on households savings

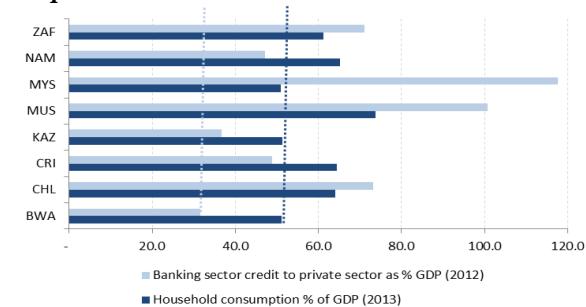
34. Growth since the 2008 global economic downturn has been sustained by rising private consumption. Growth between 2008 and 2013 has averaged 3.5 percent annually, in line with the world average, and sustained by intense pro-cyclical fiscal and loose monetary policies. However, since 2010 growth momentum has been waning despite a lower but sustained pro-cyclical fiscal policy. With the textile, agriculture, construction, and manufacturing sectors facing significant head winds, growth has been supported by the services sector and consumption (Figure 34 & Figure 35). Net exports have turned even more negative, investment has declined over time, and household consumption has risen 5.1 percent annually¹⁶ compared to a real wages increase of 2.8 percent (Figure 36). This trend will be difficult to sustain in a context of low wage growth, weak job creation, lowering savings rates and increasing household debt.

Figure 34: Growth decomposition, 2003-2013



Source: Statistics Mauritius

Figure 35: Consumption and credit: Mauritius vs. peer countries



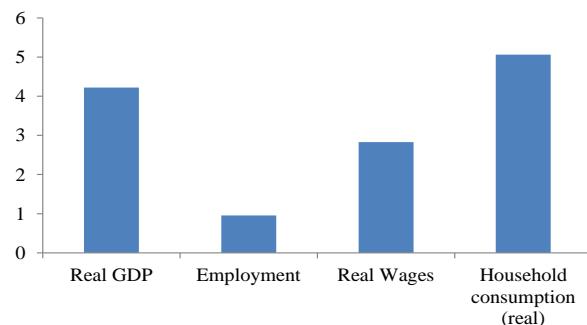
Source: WBI

35. High household consumption is behind the falling savings rate. While the declining savings rate in Mauritius is due to some structural factors, such as the end of the demographic dividend or reliance on the welfare system, the main driver is likely high household consumption

¹⁶ The 5.1 percent increase came over the period 2003-2012. This is 11.2 percent in nominal terms. Overall consumption increased from 73 percent of GDP to 80 percent of GDP between 2003 and 2013.

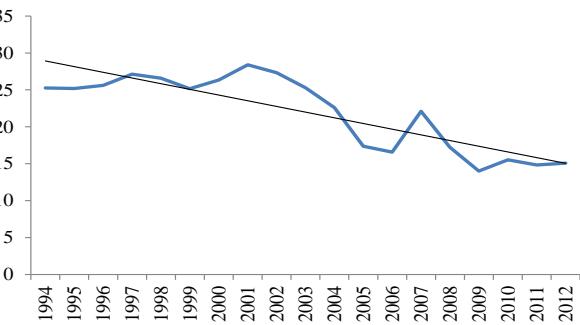
in a context of limited income growth. In some years, the household savings rate has even turned negative (i.e. households have disinvested) which threatens the sustainability of household finances in the medium term. Public sector and corporations' savings have been more stable, due to efforts toward fiscal consolidation. Overall, however, the supply of financial resources has been sufficient thanks to substantial foreign savings and private investment that has remained fairly constant. Moving forward, sustaining this trend would require providing improved incentives to boost domestic savings, including raising income through productivity gains, more diversified and better regulated financial instruments, and public policies to complement rather than substitute for private saving.

Figure 36: Annual growth of real wages, consumption, 2003-2012



Source: Statistics Mauritius and WBI

Figure 37: Gross Savings rate (% of GDP), 1994-2012



Source: WBI

36. Households are becoming increasingly indebted, as wages growth is below consumption growth, particularly among the lowest quintiles. Bank credit to households has increased from 12.9 percent of GDP in 2005 to 20.7 percent of GDP in 2013, still relatively low by international standards.¹⁷ This upward trend in a declining and low interest environment was facilitated by increasing liberalization of the financial sector, undertaken mainly to finance mortgages in a context of rising construction and property costs. With interest rates currently at low levels, the concern is that any future increases in the interest rate may expose significant vulnerabilities. This is not likely to threaten stability in the financial sector, as non-performing loans remain low, but may result in serious stress on the most vulnerable as well as middle class households in Mauritius, slowing aggregate demand in the coming years.

2.3. Expanding trade and investment and deepening regional integration

A broad export base faces challenges associated with the erosion of preferential access

37. Mauritius has successfully liberalized its trade regime to become a very open economy. Mauritius has made around 89 percent of its tariff lines duty free and has thoroughly reviewed Non-Trade Barriers (NTBs) for elimination. In fact, the country ranks as the eighth freest in the world in terms of the openness of its trading system. Mauritius' trade success is in large part due to its very open and efficient business environment (it is ranked 4th among the 138

¹⁷ Not only are more households getting access to credit, 45 percent reported debt repayments in 2012, but also the average loan repayment including for mortgages has grown to reach 18.4 percent of disposable income in 2012.

Box 4: Is there a middle income trap?

Much is debated about the middle-income trap, characterized as the phenomenon by which rapidly growing economies stagnate at middle-income levels and fail to graduate into the ranks of high-income countries. Recently, there has been substantial research and analysis, mainly by using cross-country growth regressions, but with opposing conclusions.

On the one hand, recent research^a notes a connection between growth slowdowns and falling into a middle-income trap, as well as the disproportionate experience of growth slowdowns by MICs. It is highlighted that policy variables such as good institutions, regulation, adequate infrastructure, macroeconomic stability, and regional integration are particularly relevant to avoiding such slowdowns.

On the other hand, other research^b indicates that countries do not slow down at middle income levels. Actually, relative income levels are highly persistent, i.e. those which attain high-income status do consistently much better than the rest and they do not exhibit significant signs of slowing down. This seems to suggest that there are underlying factors that explain these higher growth dynamics, associated with industrialization, openness, and equality in growth distribution. Quantity of education (i.e. number of tertiary education students) and innovation may not be that relevant as compared to the quality of the education.

However, recent contributions to the subject argue that the whole issue of the MIC trap should be looked at from a different perspective.^c Instead of relying on cross-country growth regressions, the trap should be thought of as a policy challenge that is typical of countries that want to move from middle-income level to high-income level. These countries require a shift in their growth strategy, as declining traditional sources of growth related to factor accumulation need to be replaced by new sources of growth anchored in productivity improvement. If this transition fails to happen, the country will experience growing competitiveness problems. Due to rising unit labor costs they will not be able to compete with lower-cost countries, and the lack of productivity improvement will prevent them from moving up the value chain.

Therefore, less attention should be placed on *what* a country produces and exports and more on *how* it is done. In other words, the underlying processes and institutions are more important than the products. Key capabilities are those that enable innovation, build upon talent, and nurture technology and finance. Furthermore, incentives need to be realigned so that they are conducive to innovation, including maintaining a competitive playing field and smart regulation.

The MIC trap is not inevitable and can be avoided by a careful consideration of the country's economic model, acknowledging that what has brought the country to MIC status will likely not be what brings it to high income status.

^a "Growth slowdowns and the middle-income trap". S. Aiyar, R. Duval, D. Puy, Y. Wu, and L. Zhang. IMF working paper WP/13/71. March 2013.

^b "Transitioning from Low-Income growth to high-income growth. Is there a Middle income trap?", D. Bulman, M. Eden and H. Nguyen. World Bank Policy research working paper 7104. November 2014.

^c MFM Diversification and Middle-Income Traps Thematic Group. Summary of Presentation on Middle-Income Traps by Philip Schellekens.

countries in the Enabling Trade Index 2014 in terms of domestic market access), thanks to simple customs administration and substantial tariff reductions.

38. **The country has benefitted from substantial preferential access.** Mauritius' economy has well-diversified exports ranging from agricultural products such as sugar and fisheries to industrial products such as textiles and services such as financial, ICT and professional services.

While the competitiveness in many of these sectors is undeniable, a large part of the success in many areas is explained by the preferential access that Mauritius enjoys for merchandise exports. In fact, Mauritius has the largest preferential access among all countries included in the Enabling Trade Index 2014.

39. Mauritius is experiencing a loss of competitiveness in key economic sectors due in part to preferential access erosion. Globalization is benefitting Mauritius' efforts to diversify the economy but it is also taking a toll on traditional export sectors, which are affected by loss of competitiveness in part due to loss of preferential access to export markets. As some of this preferential access winds down, questions arise about how to raise the value added by the sector, diversify into close markets, and explore investment opportunities in the African region to build on existing know-how.

Box 5: The end of preferential access

Sugar production is at a crossroads after the end of the sugar protocol in 2009 and the coming abolishment of EU sugar-import quotas from African, Caribbean and Pacific (ACP) states in 2017, which is expected to reduce prices for Mauritian sugar to around €400 per ton or 45 percent below the 2013 price. Sugar exports have been trending down to represent 2.4 percent of GDP in 2012 compared to 6.2 percent of GDP in 2000, and the sector has lost 17 thousand workers over the same period.

The textile sector took a severe hit following the dismantlement of the Multi-Fiber Agreement in 2004 and faced acute competition from low-cost production in emerging economies such as China, India and Bangladesh. Textile exports represent 6.8 percent of GDP in 2012 compared to 12 percent of GDP in 2000 and the sector employed 42 thousand workers in 2012 compared to 82 thousand in 2000. Furthermore, the textile sector faces the risk that duty- and quota-free access for a range of products in the United States under the African Growth and Opportunity Act (AGOA) could expire in 2015. This may particularly affect apparel, where Mauritius is benefitting from flexible third-country fabric provisions allowing it to import textiles for the preparation of apparel. More than half of Mauritius' exports to the US benefit from AGOA preferences.

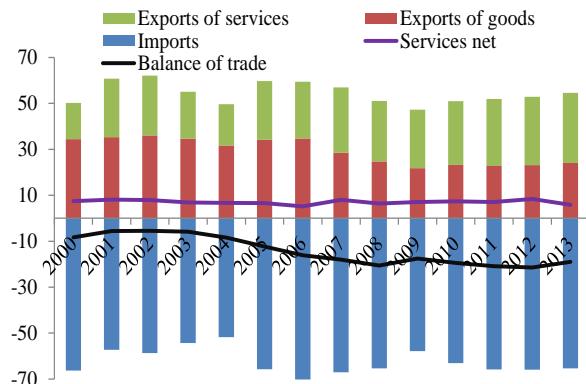
40. Mauritius has diversified into the export of services to compensate for the declining export of goods. Mauritius has run a trade deficit of around 10 percent since 2000, and the transition to a services economy has accelerated since 2006 after the economic liberalization. Exports of services expanded from 25 percent in 2006 to 31 percent in 2012 to partially compensate for the substantial decline in the export of goods from 35 percent in 2006 to 24 percent in 2012 ([Figure 38](#)). This decline as a percent of GDP is mainly explained by stagnant textile and sugar exports in a context of losing preferential access ([Figure 39](#)).

On-going reorientation toward new markets and new sectors

41. Trade has diversified since the 2008 financial crisis but there are challenges for sustained export growth. The export of goods and services has declined from around 66 percent of GDP in 1998 to 55 percent of GDP in 2012. Overall, exports from Mauritius, including re-exports, have only nearly recovered in 2013 to 2006 levels and stood at US\$2.3 billion as compared to USD 2.4 billion in 2008. The sluggish recovery of the European market, the main destination of Mauritian exports, has been compensated by a diversification of exports away from Europe and toward more dynamic regions such as Asia and Africa, particularly South Africa ([Figure 40](#)). New growing sectors such as fish and fish products have led to exports themselves

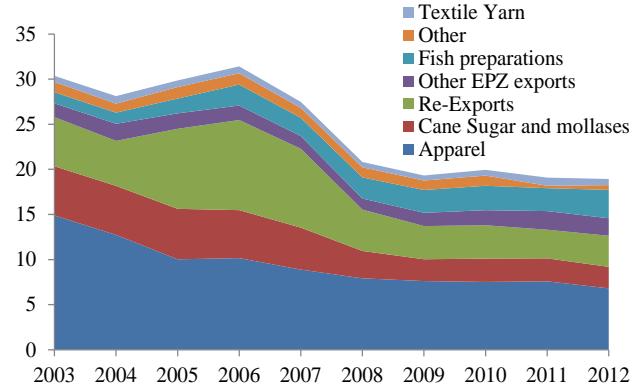
becoming more diverse since 2004, though they have recently stalled since 2010 (Figure 41). Overall, export diversification is comparable to that of Malaysia and above that of Singapore.

Figure 38: Exports, imports, and trade balance as share of GDP, 2000-2013



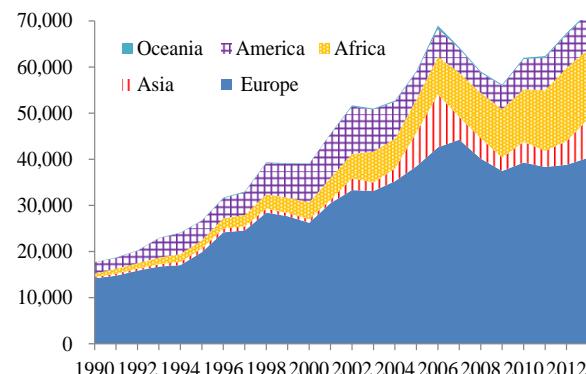
Source: Central Bank of Mauritius and IMF

Figure 39: Distribution of goods exports as share of GDP, 2003-2012



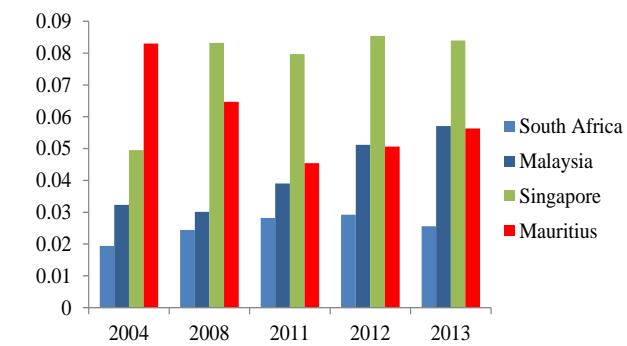
Source: Central Bank of Mauritius

Figure 40: Mauritius goods exports by continent, Millions of rupees, 1990-2013



Source: Statistics Mauritius

Figure 41: Concentration (Herfindahl) indices, selected countries, 2004-2013



Source: Herfindahl indices calculated at HS6 level, using ‘mirror data’ obtained from COMTRADE

42. **There are many challenges to broaden the number of firms that export.** The number of exporters increased from about 2,000 in 2003 to 2,170 in 2007, but has since fallen to 1,966 in 2012.¹⁸ Overall, the concentration of exports among the largest exporters has increased as the share of the top 1 percent of exporters in total export value increased from 50 to 64 per cent during the same period, while the share of total export value for the top 5 percent of exporters has remained roughly constant.¹⁹ These figures mask significant turnover of firms participating in trade, however. In each year, around 73 percent of exporting companies were ‘incumbents’ as they had already exported the year before, and of those new exporters, survival rates were around

¹⁸ World Bank’s Exporter Dynamics database. Post-2009 data not yet public.

¹⁹ At around 87 percent, although with a slight increase since 2008. Exports by firms overall are more concentrated than for most countries for which data are available, including Costa Rica, Georgia, Nicaragua, Rwanda, or Senegal, but they are less concentrated than in Tanzania or South Africa. Compared to other countries, Mauritius’ exports seem to be relatively more concentrated among the top 1 per cent of exporters while the concentration of exports among the top 5 per cent of exporters is more comparable. For example, concentration of exports among the top five percent of exporters is comparable to that of the Dominican Republic, while the exports of the top 1 per cent of exporters in Mauritius account for a significantly higher share.

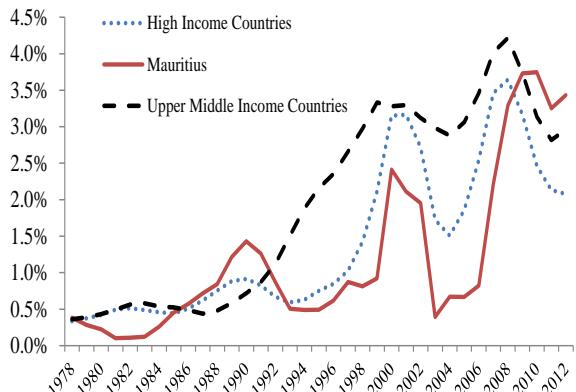
45 per cent in 2011, broadly comparable to other countries for which data are available. Thus sustained support for new exporters must not only identify prospective markets but also help them better understand the challenges that they will face once exports begin.

Growing FDI but limited transfer of knowledge

43. **Mauritius is becoming more densely integrated with the global economy.** Successful reforms to improve the business environment and economic liberalization have made Mauritius a very open country for establishing and operating a business whether it is foreign-owned or domestic. This has translated into a substantial FDI increase from around US\$64 million in 1999 to US\$361 million in 2012, a figure in line with other peer countries. This is very relevant for Mauritius as trade increasingly operates within global and regional value chains. Expanding and diversifying exports depends not just on the domestic firms but also on attracting FDI, with additional access to foreign markets and know-how.

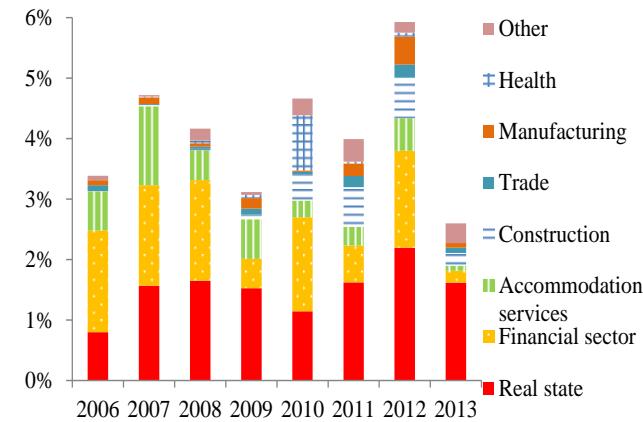
44. **Total FDI and FDI composition may not be enough to ensure adequate transfer of knowledge.** Total FDI received between 2006 and 2012 remains relatively small below 4 percent of GDP even at its peak (Figure 42). The largest share of FDI goes into the real estate sector, with 37 percent of total FDI flows, limiting knowledge transfer (Figure 43). The most relevant sector has been in financial and insurance activities, which has accounted for 27 percent of total FDI and has the potential to establish Mauritius as a regional financial hub. The main constraint that Mauritius faces is its relatively small domestic market and the fragmentation of its trade partners, which limits the returns on FDI. Thus only certain sectors with potential as regional hubs are attracting significant FDI while other sectors remain focused on domestic developments.

Figure 42: FDI (% of GDP), selected countries, 1978-2012



Source: WBI

Figure 43: FDI per sector (% of GDP), 2006-2013



Source: Central Bank of Mauritius

Reorientation toward Africa is challenged by domestic factors and sluggish regional integration

45. **Mauritius aims to foster integration with the African continent and become a bridge between Africa and Asia.** The country views regional integration as part of its overall

development strategy to enhance economic growth and achieve sustainable development.²⁰ Mauritius has adopted an Africa Strategy, which focuses on expanding trade and economic integration with Africa in two ways. First, the Africa Strategy aims to support domestic companies to increase exports and outward FDI towards the rest of the continent to take advantage of rising incomes in Africa.²¹ Second, the Strategy aims to position Mauritius as a ‘gateway’ to Africa, allowing investors to benefit from Mauritius’ duty-free market access to COMESA and SADC countries and a large number of tax and investment treaties with African countries, while also benefitting from the conducive business environment that Mauritius offers.

46. Regional integration can accelerate economic growth in the medium term although the impact on inclusiveness is less clear. Indeed, sectors that have been facing strong competition such as textiles may in fact accelerate outsourcing toward countries with lower labor costs. In turn, firms in other sectors can move production to Mauritius as they get better access to raw materials and inputs within the region, leading to more employment and lower prices for consumers including the less well off.

47. The country faces domestic challenges to become a regional hub for Africa. Mauritian firms’ sizes may be too small for some large markets, and limited international experience at the firm level may further hamper this process. Furthermore, despite Mauritius’ role as transport hub in the region, logistics competence has deteriorated between 2010 and 2014.²² Mauritius ranks in the Logistics Performance Index only slightly above the average for Sub-Saharan Africa and significantly below other upper middle-income countries. High trade and transport costs to regional markets and limited connectivity generate challenges for Mauritius-based manufacturing to supply regional markets cost-effectively. Furthermore, supporting institutions and schemes may need to be revised to clarify their mandate to better assist firms diversifying into Africa.

48. Mauritius needs to demonstrate to investors the value added of using Mauritius as a gateway to Africa. Penetration in Africa is hampered by the market’s fragmentation due to barriers to trade and investment. Cumbersome and often inconsistently applied regulatory requirements by customs and other regulatory agencies in African countries increase costs and delays for regional trade flows. These barriers affect both investment as well as the export of consumer goods from Mauritius. To address this issue and raise its attraction as an African gateway, Mauritius may want to pursue an approach that partners with countries wanting to accelerate regional integration to reduce non-tariff barriers and facilitate investment and trade in selected sectors.

²⁰ Mauritius is part of the Southern African Development Community (SADC), the Common Market for Eastern and Southern Africa COMESA, the Indian Ocean Commission (IOC) and the Indian Ocean Rim Association for Regional Cooperation.

²¹ Around 75 local companies have invested in some 20 countries in Africa since 2011, most notably Madagascar, and 68 percent of outward FDI from Mauritius between 2011 and 2013 went to Africa. Bank of Mauritius (2014); Monthly Statistical Bulletin – September 2014; https://www.bom.mu/pdf/Research_and_Publications/Monthly_Statistical_Bulletin/sep14/contents.htm

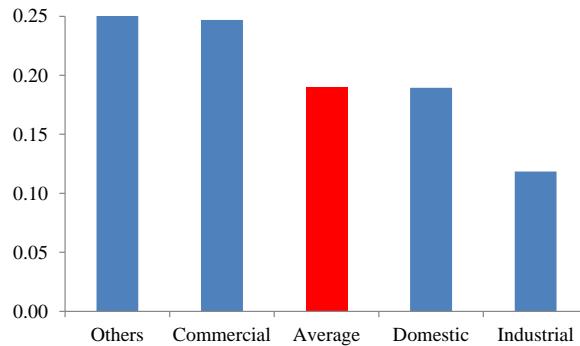
²² As measured by the Logistics Performance Index, Mauritius is ranked 115th (of 160) countries in 2014. Even though Mauritius is ranked higher now than in 2007 (132nd), it is now ranked significantly lower than in 2010 (82nd) or 2012 (72nd) – with changes exceeding the 80 percent confidence intervals for the score and ranking between 2012 and 2014. The score and relative ranking for the efficiency of the clearance process and the ease of arranging competitively priced shipments have deteriorated most notably.

Reforms have increased market competition but there are still policies protecting targeted industries

49. **Mauritian trade liberalization has fostered market competition.** As with external trade liberalization, the government has sought to raise market competition and for this purpose it created the Competition Commission in 2009. Some sectors that were closed to competition, such as cement, were liberalized. Yet there is still room to improve the policy and regulatory environment to support Mauritius as a dynamic global competitor in international markets and boost domestic competition.

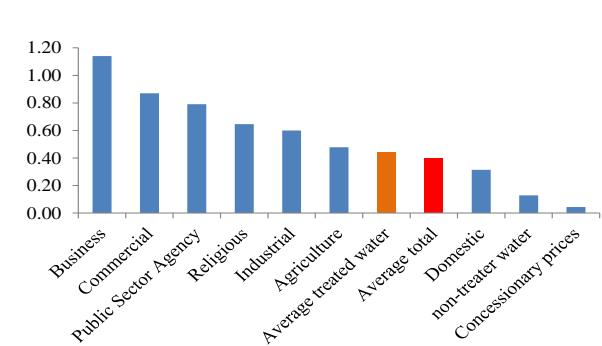
50. **Despite the positive progress toward market liberalization, some previous industrial policies remain.** While there are no macroeconomic or structural barriers to diversification, the government retains an active industrial policy in the form of targeted subsidies to sustain certain sectors highly exposed to competition. For instance, export oriented enterprises continue to receive some indirect benefits or incentives ([Figure 44](#) & [Figure 45](#)).²³ On the one hand, this support compensates for declining competitiveness and slows down the readjustment process toward more dynamic sectors of the economy, and impacts other firms and consumers that have to foot the bill. On the other hand, this support can protect valuable employment for certain groups such as low-skilled rural workers. Careful consideration is needed to determine whether these are the most cost effective policies. For instance, the support provided in the textile sector may actually be creating substantial foreign employment with little evidence of local impact.

Figure 44: Electricity tariff per consumer, US\$ per Kwh, 2012



Source: Statistics Mauritius

Figure 45: Water tariff per consumer, US\$ per m3, 2012



Source: Statistics Mauritius

51. **Government intervention in certain areas of the economy not only undermines competition but also may not achieve intended social goals in a cost efficient matter.** The State Trade Corporation is the public entity in charge of importing fuel products. Part of the charges on imported petroleum products are used to subsidize prices of rice, wheat flour, and Liquefied Petroleum Gas (LPG). These subsidies, which represented around 0.5 percent of GDP in 2011, are not well targeted and it is estimated that only around 5 percent of them might reach the poorest 20 percent of the population. Also, while the import of key agricultural products have

²³ One such policy is the reduced electricity tariff for the industry sector at a rate below even generation costs and representing a significant 19 percent of the sales volume. Similarly, the agriculture and industrial sectors receive non-treated water, around 15 percent of total water sold, at a third of the rate of the average treated tariff rate. High custom tariffs also protect the small tea sector.

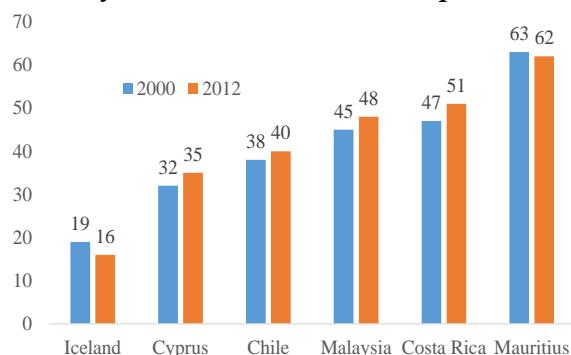
been substantially liberalized in recent years, the Agricultural Marketing Board still retains substantial control over certain products, requiring clearance prior their import or export.

2.4. Building a more competitive private sector

Mauritius needs to greatly strengthen its innovation capacity to compete internationally

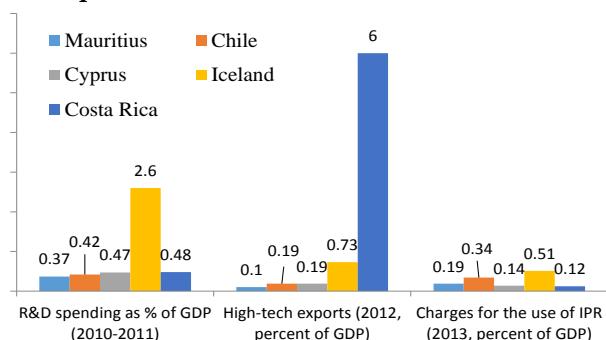
52. Gaps in innovation are significant barriers to diversification and upgrading. Innovation policy in Mauritius aims at improving the capacity of the country to absorb know-how and attract productive FDI. Several areas that are relevant to this achievement are related to skills development, opening up sectors to productive FDIs, technology acquisitions, and the need to attract and retain talent. Yet the environment for developing knowledge-intensive sectors remains weak, and Mauritius ranks 76th in the innovation ranking of the 2014-15 global competitiveness index, far behind other comparable middle income countries.²⁴ While Mauritius has slightly improved its knowledge economy ranking since 2000, it is still substantially behind its comparators. When compared with upper middle income countries that have similar population size such as Iceland and Cyprus, Mauritius is underperforming in many Scientific and Technology (S&T) and innovation indicators, including low R&D expenditure, fewer S&T journal articles and patent applications, under-use of global knowledge, and overall difficulties to move towards more high-tech exports (Figure 46 & Figure 47).

Figure 46: Global ranking of knowledge Economy Index: Mauritius and comparators



Source: World Bank

Figure 47: Key innovation indicators: Mauritius and comparators



Source: World Bank

53. Technology absorption will require strengthening the legal and institutional framework, particularly with regards to intellectual property. Mauritius has done well in tapping into global knowledge through trade, but it is underexploiting the absorption of technologies through FDI and technology licensing. Given the small R&D and technology base in Mauritius, it will be difficult to develop most technologies domestically, and a reasonable approach would be to acquire or license technologies from more advanced countries. This would benefit from a strengthened intellectual property protection system that currently undermines incentives to firms and FDI to invest in R&D and technology innovation.

²⁴ In terms of technological readiness, Mauritius ranks 63rd, while Malaysia ranks 60th, Costa Rica 40th, and Chile 42nd. In the areas of higher education and training, Mauritius (54th) is also behind Malaysia (46th), Chile (32nd), and Costa Rica (37th).

54. Tertiary education expansion needs to focus on innovation and specialization of skills for the knowledge economy. Mauritius ranks 54th in higher education and training,²⁵ comparing unfavorably with countries such as Chile and Malaysia. These ratings are a result of low enrolment rates in tertiary education, weak collaboration between universities, research, and industry,²⁶ and low availability of scientists and engineers. Although efforts have been made to increase the number of researchers and doctors in tertiary education, only 45 percent of teachers at the University of Mauritius hold a doctoral degree. Furthermore, internationalization of the University of Mauritius needs to be increased, as it is fundamental for small knowledge economies to be associated with academic and student mobility as well as close links with international firms. And while there has been growing emphasis on the provision of science and engineering courses, the educational system still has a bias towards the humanities.

55. There is a need to increase R&D spending while increasing research-business linkages. Spending on R&D, a key indicator of the absorptive capacity of a country, is very low in Mauritius.²⁷ Moreover, R&D in Mauritius is dominated by the public sector, with only 18 percent of private firms performing R&D. Most of Mauritius research expertise lies in the agricultural and sugar sectors, with virtually no industrial R&D. The current Private Sector Collaborative Research Grant (PSCRG) is designed to increase research-business linkages but its impact has been limited thus far. There is no national innovation strategy, and there is a proliferation of institutions with overlapping mandates. A concerted effort that includes policy makers from the relevant ministries, academics, researchers, and the private sector could develop a strategy and clarify the roles and responsibilities of various stakeholders moving forward. Such a strategy would help streamline the public institutions in charge of R&D and innovation and make them more responsive to the private sector needs, as evidenced in successful approaches implemented elsewhere (Box 6). It is also important to better understand the technology needs of SMEs so that proper instruments such as SME innovation vouchers, grants and incubators can be designed. This could also be needed to acquire foreign technologies or help to link domestic firms/R&D institutes with overseas research institutes and centers of excellence.

56. Mauritius needs to attract and retain more talent. For Mauritius to move up the value chain more effort is needed to improve the availability, quality and relevance of skills in the country. The need to enter into new markets and sectors and increase the knowledge content of existing products will require attracting overseas talent. Tapping into the Mauritian Diaspora on a short-term or long-term basis and dedicating programs for specific skills or sectors may be one part of the solution. Further attracting foreign talent will require more open and flexible immigration and visa policies including the system of labor permits.²⁸ Additional elements to make Mauritius a knowledge hub would require developing services and amenities that create an international reputation and draw students and businesses from overseas to build economies of agglomeration.

²⁵ 2014 World Economic Forum Global Competitiveness Report.

²⁶ Mauritius is ranked 101st by WEF 2014-2015 in terms of university-industry collaboration in R&D while Malaysia is ranked 12th, Costa Rica 33rd and Chile 39th.

²⁷ Current R&D spending stands at 0.37 percent of GDP up from 0.29 percent in 2000. It is also low when compared with other peer countries such as Costa Rica (0.48 percent of GDP), Malaysia (1.07 percent of GDP) or China (1.33 percent of GDP).

²⁸ While the country is ranked 30th in openness to foreign labor participation in the 2014 Enabling Trade Index, the existing system of labor permits causes the country to be ranked 63th in terms of ease of hiring foreign labor.

Skill gaps undermine efforts to move toward more value added activities

Box 6: The role of the public sector in spurring innovation

Successfully innovated countries have to strike a balance between the role of the private sector and the public sector in shaping innovation policies. The public sector coordinates with the private sector to create a level playing field for innovation to thrive but also pursues active policies and programs to support innovation and the substantial spillover effects that it has on the economy.

Key for the successes of innovation policies is a consistent dialogue with the private sector, particularly in shaping innovation strategies. In Finland, the innovation strategy was prepared through a consultative process led by a steering group and chaired by the President of the Finnish Innovation Fund. Similarly, Singapore's Economic Development Board set the strategic direction for Singapore's overall development and coordinates the delivery of skills, services and technology to meet industry demand in a consultative way.

Attraction of talent is another area where the public sector may fill skill gaps. In China, special incentives are provided to high-end diaspora or foreign talent, who work to fill critical skills gaps, act as entrepreneurs, or act as members of scientific, technical and business networks to research, teach, or invest. In Scotland, GlobalScot taps into the skilled Scottish Diaspora and Chile Global, housed in Foundation Chile, plays a similar role.

The public sector is also playing a role in exposing SMEs to innovation. Norway's TEFT program seeks to diffuse technology from research institutes to SMEs. This is done by a TEFT attaché, seconded from the R&D institutions, who acts as a broker, organizer, or coach to aid SMEs in the innovation process. The program pays 75 percent of project costs and the company pays the rest. Another possible instrument is an innovation voucher, which enables firms, especially SMEs, to access technologies from research institutes or universities.

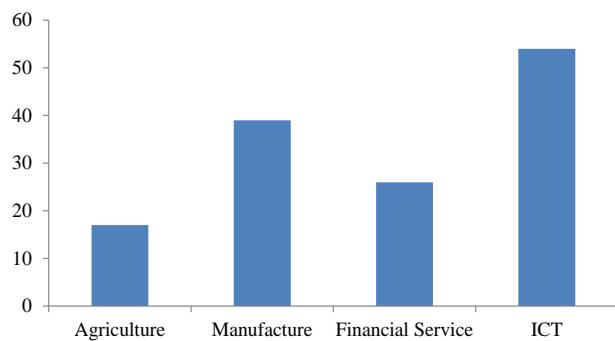
57. Mauritian firms are hampered by the pool of skills available. In 2014, 54 percent of responding enterprises across all sectors in Mauritius indicated that they could not recruit the right number of candidates with the required profiles ([Figure 48](#) & [Figure 49](#)).²⁹ An inadequately educated workforce is identified among the top five most problematic factors for doing business in Mauritius.³⁰ The shift towards a service-oriented knowledge economy has resulted in demands for skills that the education and training system do not deliver. Given that recent graduates require substantial time to secure a job, this points to a skills mismatch between the quality and relevance of skills provided in the education system. This results in overall underemployment, as many jobs do not actually require many of the degrees earned.

58. According to Mauritian employers many employees have qualifications but lack the appropriate skills. Employment surveys also reveal that it is even more difficult to find employees with appropriate experience and proper attitudes. The ICT and the financial sectors especially report large labor and skill shortages. Even in the manufacturing sector there is substantial demand for plant and machinery workers that are not easily found in the market, when the required skills, experience, and attitudes are requested.

²⁹ 2014 employment trend survey (Ministry of Finance and Economic Development).

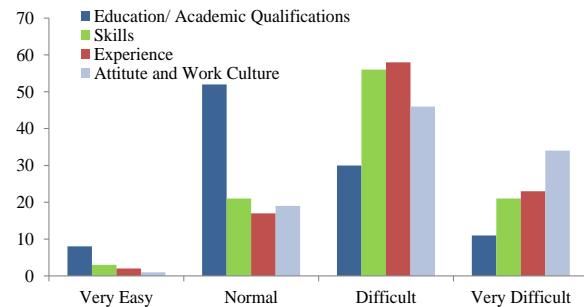
³⁰ 2013-2014 Global Competitiveness Report.

Figure 48: Labor shortage by sector, 2012



Source: HDCR reports

Figure 49: Difficulties finding the right candidate, 2014



Source: Skills working group

Improving infrastructure management to raise connectivity

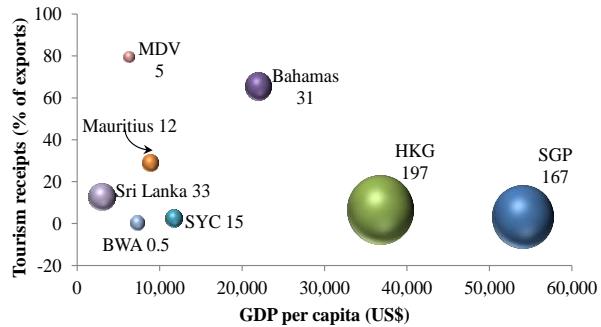
59. **The trade-enabling environment is good but has recently experienced a downtrend, undermining options to exploit regional trade opportunities.** Mauritius ranked 29th out of 138 countries in the World Economic Forum's 2014 Global Enabling Trade rankings, and 17th out of 189 countries in the World Bank's 2014 Doing Business rankings for Trading across Borders. However, its score in the latest World Bank Logistics Performance Index (LPI) was 115th out of 160. Mauritius' distance from markets is a structural barrier that raises costs for exporters and importers. Yet the quality of the infrastructure is good, with substantial recent investment to expand the airport and on-going investment to expand the port. The problem therefore is not so much building the infrastructure but rather its management and exploitation.

Mauritius has improved air transport infrastructure but connectivity can increase if air access is further liberalized

60. **Mauritius has relatively dense air transport connectivity but may need to be expanded to support the move toward high-income status.** Mauritius has a well-developed air network with a number of destinations, including major European hubs and, in recent years, major Asian cities. However, the Mauritian air transport market is still far thinner than more advanced economies with global or regional hubs. For instance, the number of registered carrier departures is less than half that of Bahamas or Sri Lanka, as these countries have been developing denser networks tightly connected to nearer U.S. and Asian markets, respectively (Figure 50). As a result, Mauritius is ranked relatively low down the Airline Connectivity Index,³¹ which takes into account not only number of flights but also the distance to global economic centers. The limitations in connectivity are becoming most apparent in the receipts from tourism for passenger transport, which have been stagnant in the last decade (Figure 51).

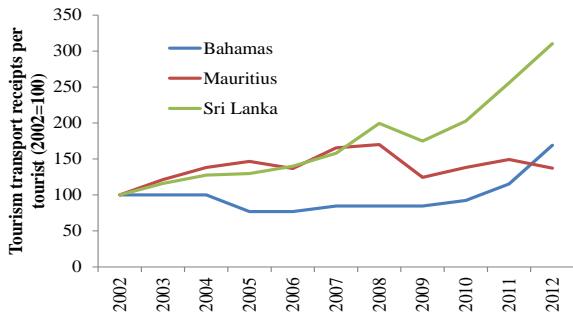
³¹ See Arvis and Shepherd. (2011) "The Air Connectivity Index: Measuring integration in the global air transport network." Policy Research Working Paper 5722. World Bank. In 2013, Mauritius ranked 68th, above the Bahamas (78) but below Sri Lanka (35) and Maldives (62).

Figure 50: Number of registered carrier departures (1,000)



Source: WDI

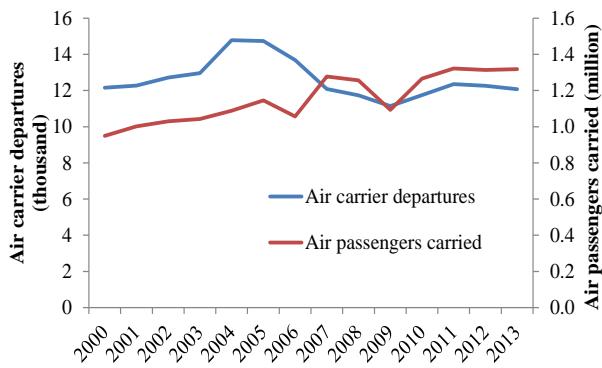
Figure 51: Tourism receipts for passenger transport



Source: WDI

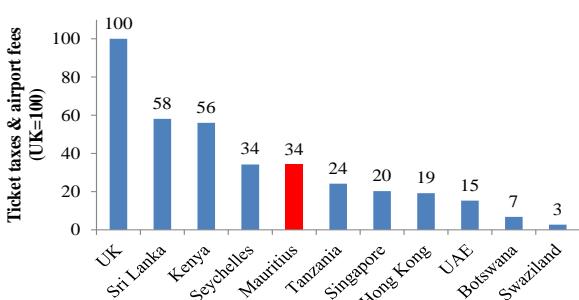
61. **A new airport has substantially expanded capacity.** Air transport operations and passengers carried have been increasing gradually in recent years (Figure 52). Mauritius's airport is broadly competitive when measured against other airports in the region in terms of the taxes on tickets and the level of airport fees. Ticket taxes and airport charges on Mauritius are 34 percent of the comparable charges and costs in the United Kingdom³², and comparable with those of the Seychelles (Figure 53). However, other major global hubs such as Singapore, Hong Kong SAR, China, and UAE, charge even lower fees and taxes.

Figure 52: Air departures and passengers



Source: WDI

Figure 53: Ticket taxes and airport fees for selected countries relative to UK



Source: WEF (2013)

62. **Further air liberalization would enhance market competition, reduce prices and stimulate the growth of the tourism market in the medium to long term.** Liberalization by granting fifth freedom and allowing foreign ownership and multiple designations could reduce airfares and increase passenger flows by 20-30 percent.³³ In Mauritius, considerable restrictions remain on airline operations and ownership despite the general trend towards liberalization. About half of the existing 20 air service agreements do not permit fifth freedom operations and carriers are not allowed to stop over. Foreign ownership of national carriers is also restricted to 40 percent.

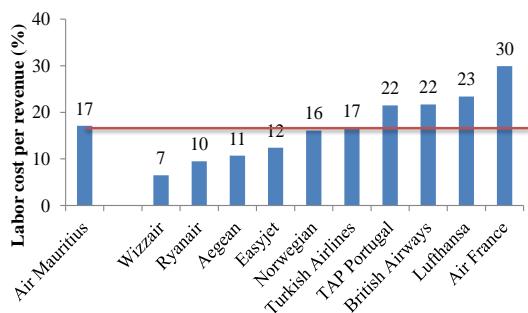
³² The UK airport charges are among the highest in the world. For example, air passenger duty for long-haul business tickets is about US\$300.

³³ Piermartini and Rousava. (2008). Liberalization of air transport services and passenger traffic. Staff Working Paper ERSR-2008-06, World Trade Organization, and InterVISTAS. (2009). The impact of international air service liberalization on Mauritius.

The removal of these barriers could have a positive effect on reducing air transport cost, stimulating connectivity and supporting tourism growth, among other sectors.

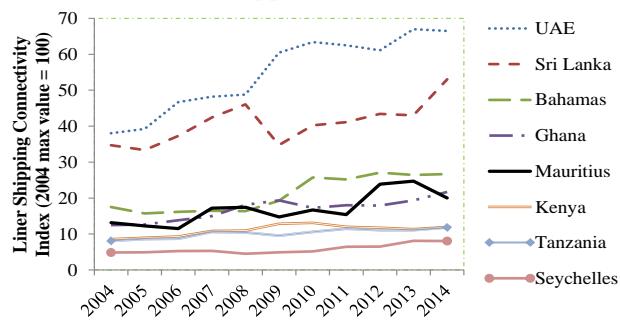
63. Further liberalization would require improved efficiency of Air Mauritius. Currently, Air Mauritius accounts for about half of the Mauritian market (on an available seat basis). Whilst recent restructuring efforts have restored modest profitability, it remains very weak with a net profit margin of just 1.6 percent. Further restructuring efforts and increased labor productivity are required to allow Air Mauritius to deliver improved air connectivity efficiently and profitably, especially given emerging competition from low-cost carriers that market liberalization would accelerate (Figure 54).

Figure 54: Labor Productivity of Airlines



Source: CAPA Centre for Aviation (2013)³⁴

Figure 55: Liner Shipping Connectivity Index



Source: UNCTAD

High maritime connectivity may be at risk if there is no improved efficiency in the management of port operations

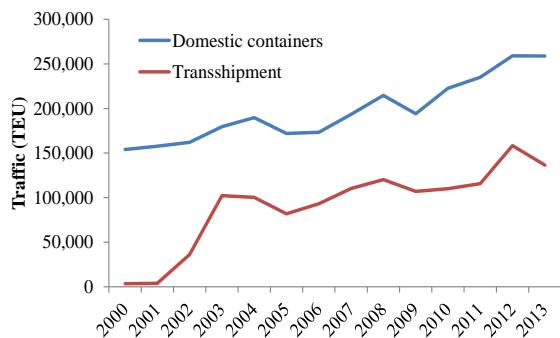
64. Maritime connectivity improved in Mauritius between 2004 and 2013, reflecting the development of Port Louis as a regional transshipment hub. As a result, the country's connectivity is above other ports in the region,³⁵ although still far below global and regional hubs such as UAE and Sri Lanka (Figure 55). The port currently handles between 6-7 million tons per annum, about half of which is containerized. The throughput of Port Louis has been increasing steadily in recent years, in line with economic growth.³⁶ Currently, Port Louis plays an important role in the regional transshipment market and about half of shipping lines at Port Louis are direct connections from and to Europe and Asia, representing 80 percent of total transshipment market in the region (Figure 56).

³⁴ CAPA Centre for Aviation. (2013). European airline labor productivity: CAPA rankings.

³⁵ That is, ports of Mombasa in Kenya, Dar es Salaam in Tanzania as well as ports in neighboring countries such as Seychelles and Comoros.

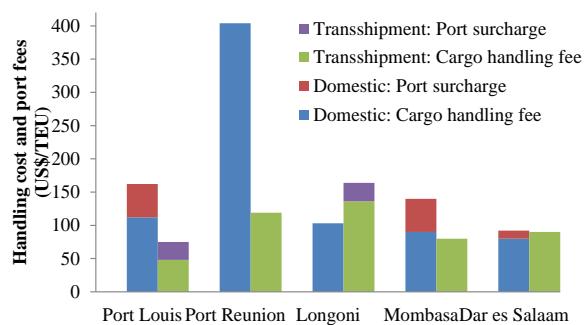
³⁶ Over the last decade, the traffic increased on average 2 percent per annum, with domestic container traffic increasing by 4 percent, and transshipment cargo grew by 3 percent, since the introduction of lower charges for transshipment traffic in 2002. While impressive, this growth is a fraction of the annual growth in Mombasa or Dar es Salaam over the same period (9 and 10 percent, respectively).

Figure 56: Container Traffic: Port Louis (TEU)



Source: Mauritius Ports Authority

Figure 57: Cargo handling costs



Source: AfDB (2009); EAC Corridor Database

65. Subsidized transshipment port charges are very competitive. Port Louis' container handling costs and port surcharges amount to US\$167 per twenty-foot equivalent units (TEU), which is favorable compared with other regional ports such as Port Reunion but slightly higher than regional hub ports such as Mombasa and Dar es Salaam (Figure 57).³⁷ Transshipment charges at Port Louis are about US\$38 per TEU, which is also competitive with other ports in the region. However, these low charges may not be sustainable for two reasons. First, the state-owned port operator, Cargo Handling Corporation Ltd. (CHCL), receives a public subsidy for its operations, despite the commercial nature of the sector.³⁸ Second, costs for domestic cargo are substantially above the transshipment charge and above other ports in the region, creating a de facto cross-subsidization of transshipment cargo.

66. Port performance lags behind other leading private operators in the region. Three container and multipurpose terminals at Port Louis are run by CHCL, under the supervision of the Mauritius Ports Authority. The number of container moves per crane-hour is in line with regional public operators but well below port terminals that have been given as concessions to private operators (Figure 58). Waiting time at the berth is relatively short in Port Louis at 14 hours, comparable with other regional hub ports³⁹ but given the modest levels of traffic in Port Louis, this figure could easily be reduced.⁴⁰ Further incentives may be needed to encourage CHCL to make further efforts toward improving efficiency.

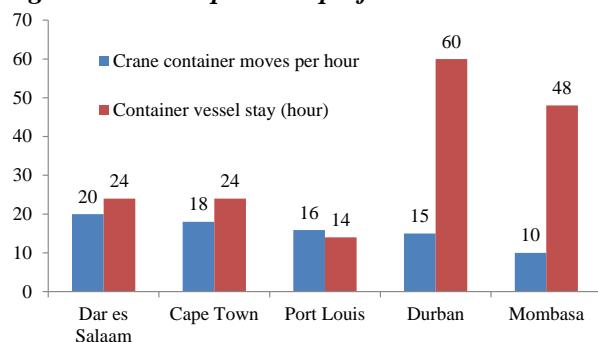
³⁷ Other port charges incurred at the ports of Mombasa and Dar es Salaam include a pilotage fee of US\$78 at Mombasa, and a yard storage cost of US\$160 at Dar es Salaam.

³⁸ In 2014, the Government allocated MUR 25 million or US\$800,000 to subsidize port operations in contrast to most large ports in the region. Dar es Salaam, for instance, shows a net profit before tax of nearly US\$60 million in 2013, on a throughput of 13.4 million tons.

³⁹ However, this reflects the significant growth of demand in the rest of the ports of the region, keeping pace with capacity enhancement.

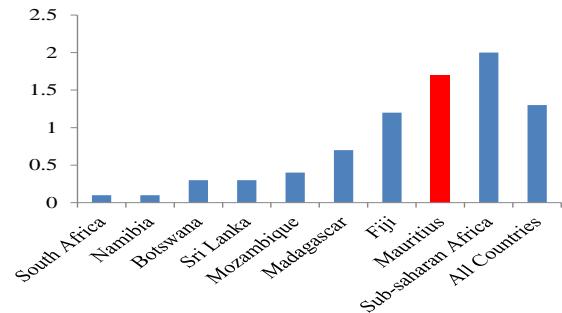
⁴⁰ There are better performers in the region, such as Abidjan and Freeport, which are achieving wait times of a couple of hours with private sector participation.

Figure 58: Port operation performance



Source: AfDB (2009); Gwilliam (2011)

Figure 59: Number of water insufficiencies per month



Source: WB enterprise survey, 2010

67. The role of Port Louis as a regional transshipment port is threatened by growing competition and lower performance. In major regional hub ports, such as Mombasa and Dar es Salaam, and even closer ones such as Port Reunion, substantial capacity expansions are ongoing or in preparation.⁴¹ By contrast, the recent failure to conclude the concession of the container terminal and retaining CHCL as the operator is unlikely to provide incentive to shipping lines to continue to grow their transshipment volumes in Mauritius. This raises the risk that Port Louis could be downgraded to feeder status, served by smaller ships at higher costs per TEU, with a concomitant impact on the costs of imports and exports. Furthermore, there are concerns as to whether Mauritius's position can be sustained in the medium term, given the move towards larger vessels serving fewer ports, and increased integration between shipping lines and terminal operators.

Inadequate water and electric services are raising business costs

68. Inadequate utilities may increase business costs and can constrain development objectives. Mauritius has a relatively high number of water interruptions when compared to peer countries (Figure 59). As a result, some private businesses (mostly in tourism) have developed independent or decentralized water supply and wastewater solutions. This may increase the cost of doing business and may have an adverse effect on market competitiveness. Furthermore, these decentralized systems present additional risks for contamination of the water sources⁴² due to inadequate development and planning controls and a weak regulatory environment. Although companies do not seem constrained by electricity service disruptions, the time required to get a new connection (almost 3 months) is rather long (Figure 60).⁴³ In addition, around 42 percent of firms identified electricity as constraint, and 25 percent of them also own backup generators (Figure 61).⁴⁴ Social accountability mechanisms in the water sector are largely missing and no social or peer pressure is done with non-compliant customers. Improved demand side governance

⁴¹ <https://www.cma-cgm.com/static/News/Attachments/CMA%20CGM%20-%202nd%20Quarter%202014%20Results.pdf>

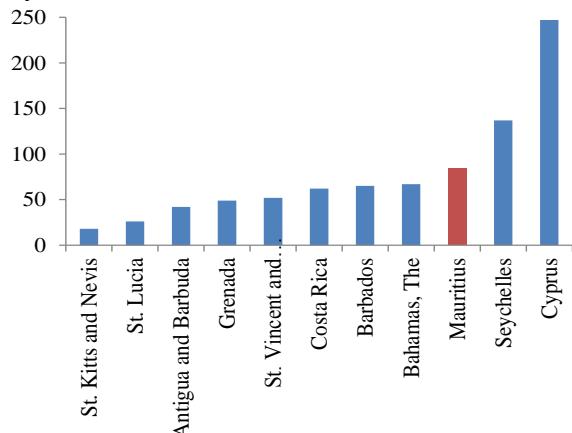
⁴² This contamination would likely stem from both saline intrusions from abstraction in the shallow coastal aquifers and inadequate treatment and disposal processes for wastewater.

⁴³ WDI, 2013. Time required to get electricity is the number of days to obtain a permanent electricity connection. The measure captures the median duration that the electricity utility and experts indicate is necessary in practice, rather than required by law, to complete a procedure.

⁴⁴ WB enterprise survey, 2009.

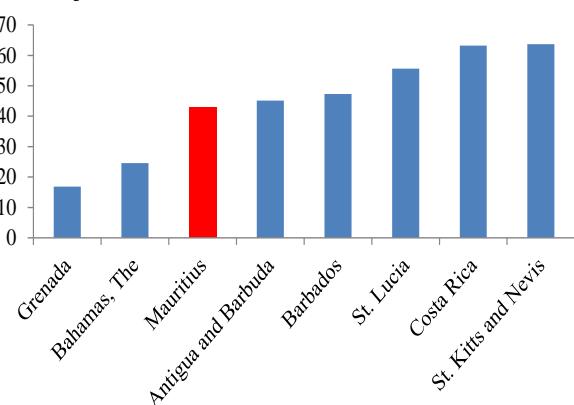
approaches could be envisaged linking improved water service with stronger compliance with metering policy.

Figure 60: Time required to get electricity (2013), days



Source: WDI, 2012

Figure 61: Percent of firms identifying electricity as a major constraint



Source: WB enterprise surveys, 2010 (2009 for Mauritius)

Challenges for new SMEs to grow further and create employment

69. **SMEs continue to face challenges to increase market share and employment.** Small establishments that employ less than 10 people represent 90 percent of all businesses in Mauritius but employ around 54 percent of the workforce. The top 10 percent of firms account for 40 percent of all sales, while around 60 percent of SMEs generate only a fifth of all the sales. This distribution has remained unchanged since 2001 despite efforts to liberalize the economy. Furthermore, around 70 percent of small firms are highly leveraged,⁴⁵ compared to roughly 55 percent of medium and large firms. Highly leveraged small firms are 30 percent less likely to be profitable than those that are not highly leveraged. Furthermore, short-term liquidity risks are especially high for small firms and new incorporations, which leave them highly exposed to unexpected downturns in economic activity or increases in short-term interest rates.

70. **Limited access to finance may be part of the challenge faced by SMEs.** Despite having a strong and large financial sector that successfully navigated the global financial crisis, Mauritian SMEs claim that they continue to face challenges in accessing credit for investment and working capital. As in many countries, the structure and incentives in Mauritius's financial sector biases away from SMEs. With large revenues generated in global business centers and with relatively larger business groups, the fragmented and relatively high-risk SME market remains unattractive to most banks. Additionally, SMEs are micro in nature and may reflect the fact that many individuals have limited access to financial services.

71. **The Mauritian government is taking steps to help SMEs face some of these challenges.** For the past five years, the government has tried to resolve the access to finance issue for SMEs

⁴⁵ Highly leveraged firms are defined as firms that have a liabilities-to-assets ratio that is greater than 2/3. Secondly, a distinction is made between firms that have either a short-term liquidity problem or a short-term liquidity risk, and other firms. Firms that have a short-term liquidity problem have a current ratio below one, which means that their current liabilities exceed their current assets.

by earmarking over MUR 6 billion to the sector through different types of lending and non-lending instruments.⁴⁶ Credit is provided at subsidized rates, with partial state guarantees and even sometimes without the need for collateral or third party guarantees. While these schemes are in line with the government strategy of improving the SME operating environment, areas of duplication as well as some gaps continue to exist. Recently, the government has decided to take further steps to restructure the Development Bank of Mauritius as a micro-finance institution with a banking license to provide retail micro-financing services to micro and small enterprises. However, any policy reform in this sector needs an assessment of the effectiveness of various existing schemes and business development service providers through an appropriate M&E framework.

KNOWLEDGE GAPS: SMEs' constraints and access to finance

While there is broad discussions in Mauritius about the challenges that SMEs face, particularly in terms of access to finance, there have been no comprehensive surveys since 2009 that help to understand the nature of these challenges. As a new firm census takes place in 2015, this will be an opportunity to assess SMEs' challenges and the impact of on-going government measures in key areas such as support to export, access to finance, and transfer of knowledge, among others.

2.5. Sector opportunities to boost economic growth and employment creation

Agriculture development can have a substantial role in poverty reduction

72. The agriculture sector remains relevant for poverty reduction and food security. While the total land under agricultural production has declined, agriculture still occupies around 44 percent of the arable land area in Mauritius.⁴⁷ The contribution of agriculture to the economy was estimated at 23 percent in the late 1970s, and 4 percent in 2010 and employs around 7 percent of total employment. The sugarcane sector is the major sub-sector, followed by food-crops, livestock, flowers, fruits and forestry. Agriculture plays a significant role for small-scale farmers and employment at the estate farms, as well as in terms of food security. Local food production meets less than a quarter of local food consumption needs and food security could be enhanced through regional markets integration. Also, increasing the competitiveness and productivity of the domestic agricultural sector could mitigate the impact of food price shocks on poverty. Mauritius' agriculture vision aims at the development of small and medium sized agribusiness firms, concentrating on safety, supply, quality, innovation and new technology, while supporting the capacity of large operators in agriculture and agribusinesses to diversify into the Africa region.

73. To achieve its vision for agriculture, Mauritius faces a number of obstacles. First, a comprehensive marketing strategy with modern market facilities is needed. Second, there will be a 30-40 percent reduction in sugar prices as part of the reform of the EU Sugar Regime, placing severe constraints on the sector. Also, the country remains very exposed to global food prices as it imports about 75 percent of its food, amounting to 19 percent of the country's total imports bills. An increasingly dense population with scarce land and other natural resources available will further limit potential interventions. The sector remains fragmented with a substantial number of

⁴⁶ There are around 20 or so such schemes, which now provide grants, credit facilities and/or equity for SMEs either through the Restructuring Working Group, SME agencies, or commercial banks.

⁴⁷ Of this, sugar accounted for 90 percent, tea 1 percent and other crops around 9 percent in 2002.

small planters and limited investments in innovation and technology further undermining its productivity.

74. With increased global competition and limited land resources, Mauritius needs to rethink how to revamp its limited landscape. As the country is expected to diversify out of sugar production, this will open up opportunities to move towards an agricultural sector that is “Climate-Smart” and “Nutrition Sensitive.” These approaches would embed all pillars of sustainable development: economic, social, and environmental.⁴⁸ With the right level of investments, knowledge, and partnerships, the sector can cater to the local population, diversify regionally and internationally, and protect the natural capital of Mauritius. Some potential approaches include:

- *Further and fully integrate the agro industry into “strategic clusters” with more focus on inclusive growth.* These can be established for selected strategic commodities such as vegetable and fruit production as growth poles within targeted agro-ecological zones. The cluster approach enhances delivery of essential services, exploitation of economies of scale, development of required infrastructure, bulking of produce, agro-processing and reduction of transaction costs. The project can target specific crops as strategic commodities for consumption and for export to the regional markets. Importantly, it can help increase the incomes of small farmers.
- *Move towards a regional landscape and oceanscape, positioning agriculture and fishery production in the global industry (especially for African, Asian and Arab markets).* Mauritius is looking forward to contributing toward a regional development agenda by investing in the region, as evidenced by investments in Mozambique, Gabon and other places. Policies and actions have room for more regional initiatives with strong public and private sector focus – all with international exposure and context. More analysis is needed to understand the current and future business risks to the private sector and to investors.
- *Increase scale to gain productivity and push for “Climate Smart Agriculture.”* Production of a larger volume of quality food-crops (and high-added value) to satisfy the growing needs of tourists and the population. Such efforts can also target niche export and foreign markets, reducing the cost of production through increased productivity per unit area of land and per unit cost of investment. This could be supported by innovative ways of reducing land costs and modernizing and expanding its port system to cater for international needs. Also, “Climate Smart Agriculture” could be pushed where productivity, resilient yields and carbon storage feature prominently.
- *“Nutrition Sensitive” products and diversification toward quality of products and services.* Mauritians suffer from high rates of Non-Communicable Diseases with substantial costs on the economy. As income per capita grows, the local production will need to shift toward more healthy and quality food production to meet the demands of a population increasingly aspiring to a healthier life style.⁴⁹
- *Strengthening the Water-Food-Energy Nexus:* Irrigation systems are already highly vulnerable to climate change due to the high dependence on groundwater resources, periodically rendered

⁴⁸ E.g. Economic – high-end product and services, higher yields/return; Social – insurance programs for farmers, better income for agricultural jobs, improved food quality for all; and Environmental – resilient products, containment of climate change, etc.

⁴⁹ Although the level of malnutrition is low by regional standards—around 8 percent of children are underweight and 6 percent are undernourished, while obesity rates have risen to 10 percent for men and 20 percent for women—malnutrition is in the upper range for a middle-income country.

unusable by saltwater intrusion in groundwater aquifers.⁵⁰ Water resources management should be an essential element of climate smart approaches to agriculture in Mauritius, important both for the food security prospects of Mauritius and for future drinking water availability as well as strategic energy security.

- *Build resilience and responsiveness to natural hazards.* Produce food and agricultural products that are resilient to climate change to protect the environment, such as soil conservation and prevention of landscape degradation.
- *Create high added-value products, support innovation and technology.* Mauritius can capitalize on safe and reliable phytosanitary institutions to produce products that are of high added value. This will require attracting know-how, developing relevant skills and investing in new technologies, R&D and capacity building.

The ocean economy can bolster economic growth and employment creation

75. The ‘Ocean Economy’ can become a major pillar of Mauritius’ future development if the right frameworks for the management of ocean resources are put into place in a sustainable, inclusive, and smart way.⁵¹ The potential of the Mauritian Ocean Economy – focusing on growth, sustainability, and protection of natural-capital – is enormous for growing the GDP, creating jobs, sustainable livelihoods and raising real incomes and standards of living for all. The ocean territory contributes significantly to the wealth of Mauritius. The GDP share has been estimated at 10.8 per cent in 2012, of which over 90 per cent comes from three established sectors – coastal tourism and marine leisure, seaport-related activities, and seafood-related activities. These three sectors have significant scope for future growth. In the coastal tourism cluster, business opportunities in the currently under-developed marine leisure activities could quadruple the sector GDP contribution by 2025, bringing its share at par with global benchmarks.⁵² Seafood-related activities could also expand with new players entering in the fisheries sector and expanding in the aquaculture sub-sector. Seaport-related activities could be expanded, including in areas such as ship repair and maintenance, and bunkering services.

76. New sectors associated with the ocean economy can further bolster contribution of the ocean to economic development in Mauritius and in the region. The economic potential of the ocean includes the exploitation of living and non-living resources in Mauritius’s waters, on the seabed and in the subsoil. This could unlock large opportunities for Mauritius and some of its neighboring island-states in several key areas such as: fisheries and seafood hubs, energy and petroleum, land and sea transportation, cargo and port services, sustainable tourism, food and

⁵⁰ Looking to the future, a structural shift away from sugar cultivation and reorientation toward high-value products will need to take into account the increasing variability of freshwater availability for irrigation as rainfalls become more erratic and the sea level rises. Prudent groundwater management, based on integrated groundwater management planning with appropriate supporting institutions and monitoring and enforcement of water quality and use can significantly reduce the risks of saltwater intrusion in groundwater.

⁵¹ There has been a focus on strengthening country institutions for managing ocean resources and use, particularly the transition to more sustainable fisheries, establishing coastal and marine protected areas, waste management and infrastructure, and implementing integrated coastal and marine ecosystem management. Moving forward, a coordinated global effort is needed to improve the health of the world’s oceans and the benefits they provide to the global economy and human welfare. This is an area where Mauritius’ leadership could be very useful.

⁵² “Ocean Economy: A Roadmap for Mauritius” (December 2013) prepared by the National Task Force on the Ocean Economy.

agriculture security, transfer of knowledge, and preservation of natural capital. Some of these opportunities and gains include the following activities:

- **Logistics:** Including the development of an Ocean Business Park⁵³ which would provide earmarked space for ocean-related developments, especially for the early phases of the Deep Ocean Water Application downstream activities. Also, Mauritius could become a major hub in the region for petroleum products, container transshipment and port services, and could support strategic energy security for the Indian Ocean.
- **Seafood processing hub, along with aquaculture:** Raising economic growth and providing a secure, nutritious, and safe food security system.⁵⁴ Furthermore, diversification could take place in areas such as pearl culture, pharmaceuticals, anti-cancer research, etc.
- **Tourism and ocean-based leisure sectors:** Focusing on Mauritius's ecosystem and biodiversity, local assets, cultural heritage, traditional and cultural expression as well as diversifying around sustainable tourism, cruise tourism and sea sports.
- **Ocean industry:** Developing a world class oceanographic Centre of Excellence devoted to the Ocean Economy for Small Island Developing States (SIDS) - combining research, business and applications.

The fisheries sector is moving toward industrialization but with high relevance for poverty reduction

77. **The fisheries sector is a low contributor to the Mauritian GDP, but has a key role in poverty alleviation.** Direct fisheries' contribution to GDP has been stagnating at around 1-2 percent in the past few years. However, the entire fisheries value chain, including fish processing and marketing, represents around 4 percent of GDP.⁵⁵ Seafood exports, including re-export, amounted to US\$460 million in 2013, accounting for close to 20 percent of total annual exports. The seafood industry alone has had US\$560 million in investments since 2000 and is also a solid transshipment activity accounting for 50,000 tons per year and is expected to increase gradually to 70,000 tons. There are also two tuna canneries employing 5,000 workers from the poorest social classes of which 60 percent are Mauritian employees producing 33,000 tons of canned tuna annually. Finally, artisanal fisheries play a key role in poverty alleviation as there are about 3,200 registered artisanal fishers in Mauritius, 44 percent of which are in Rodrigues.⁵⁶

78. **With artisanal fisheries reaching their limits, there is a need to reorient further the fisheries sector toward higher value-added activities.** Artisanal fisheries provide an important source of unskilled job and represents half of the domestic production and exclusively feeds the domestic market. Artisanal fisheries (lagoon and off-reef) are fully exploited in Mauritius and Rodrigues and there is limited room for expansion of the tuna fisheries by domestic boats. Nonetheless, the expansion of the sector has strong economic potential, including for poverty reduction, in several areas:

⁵³ This could include a (i) Marine Economic Zone with floating hotels, undersea tourist attractions, cruise and marina industries, marine entertainment, etc.; (ii) Industrial Marine Economic Zone with high-tech fishing facilities and activities, high-tech "Marine Zone Franche", development of crustacean and algae industries, mariculture and high-value aquaculture.

⁵⁴ Furthermore, Mauritius and other countries in the region can improve food security in East Africa (with strong focus on fisheries and aquaculture) given Mauritius's distance from continents and freedom from epizooties.

⁵⁵ Total fishing, seafood processing and aquaculture output was estimated at 178,500 tons in 2013, equivalent to US\$500 million.

⁵⁶ In addition, several thousand fishers are unregistered, including fishers on foot or gleaners who are among the most marginalized.

- *Develop artisanal fisheries value-chains that have promising income generation potential for the poor, particularly in Rodrigues.* While controlling access to the fisheries to avoid overexploitation, developing value chains and higher value-added activities is important to increase the economic benefits of artisanal fisheries and reduce poverty among fishing communities. Artisanal fishing aggregating devices (FADs) and mariculture are developing rapidly.⁵⁷ However, the sector is still constrained by: (i) lack of adequate cold storage and processing facilities that depend on private commercial initiatives, usually discouraged by uncertainty or irregularity of fish catch, which could be partially mitigated by mariculture; (ii) access to finance; (iii) commercialization; and (iv) food safety and quality practices.
- *Increase industrial aquaculture fish production for internal consumption, exports and job creation and explore links with small scale operators.* The current industrial aquaculture production is 500 tons and employs around 120 workers, mainly driven by one private operator. The sector is highly capital intensive and the private sector has requested significant financial support from the government. Proactive government policies to adopt a clear legal framework, especially with respect to environmental guidelines, are essential to attract technology and feed inputs at competitive prices that could expand production to 8,000 tons by 2020 and employ around 500 workers while developing a sustainable marine aquaculture. Inclusive growth in the exploitation of marine aquaculture should be promoted by the government to reduce conflict of interest between the new company and local fishers. Exploring aquaculture out-grower schemes linking small operators to large companies could serve this objective, as Brazil has shown (Box 7).
- *Develop the industrial sub-sectors to strengthen the seafood hub, expanding the region's fish value-chain through transshipment, transformation, processing, and commercialization, and subsequently increase value-added retention in the region.* Industrial fishing in Mauritian waters is mainly conducted by foreign fleets.⁵⁸ Given insufficient resources in Mauritian waters, the development of the seafood hub will require increasing access to the region's resources and will likely raise intra-regional competition if not managed adequately. Sustainable access to final markets will also require greater attention to export certification for capture and sanitary regulation. There is a huge potential for further growth in the seafood sector and associated activities, with positive spinoffs in terms of jobs and revenue associated with port activities and FDI in the sector. The government should continue strengthening its seafood sector policy and develop robust economic monitoring to ensure benefits are effectively captured by the local economy.
- *Expanding the semi-industrial sector, revitalized by the emergence of the demersal fisheries bank.* The potential of Mauritius fisheries bank is limited to 3,000 tons per year or around 30 percent of total domestic fish consumption. However, the resource has been moderately exploited at about two thirds of its potential due to equipment obsolescence and administrative constraints faced by the fishing companies. On the other hand, the discovery of a new deep-water snapper fishery on the Nazareth Bank is reviving the semi-industrial sector, with an estimated potential production of 1,500 tons per year, compared to 700 tons currently caught.

⁵⁷ Twenty-four artisanal FADs are maintained off the shore of Mauritius, involving approximately 400 artisanal fishers and producing around 400 tons annually, and consequently reducing pressure on near-shore stocks. Artisanal mariculture is increasingly considered an alternative to capture fisheries and could support alternative livelihoods for fishing communities, avoiding new entrants in the catch fisheries, supporting reduction of fishing effort and feeding the local seafood market.

⁵⁸ Approximately 250 licenses are sold every year, generating close to US\$1.4 million in fees annually.

- *Further linking the fishing sector to the Mauritian tourism sector.* Sport fishing is an important tourism activity that supplies the local market with an additional estimated 350 tons of fish annually. More importantly, various international big game fishing competitions are held every

Box 7: Brazil aquaculture - A success story

Aquaculture has grown substantially in Brazil to meet domestic and international demand for Brazilian fish and seafood that exceed capture production. Total aquaculture production has increased from approximately 30,000 tons at the beginning of the 1990s to 176,000 tons by 2000, and 944,000 tons in the first nine months of 2013. As a result, aquaculture has increased from 4.3 percent of total fish production in 1994 to 38 percent in 2013.

With the creation of the Special Secretariat of Aquaculture and Fisheries in 2003 and the subsequent establishment of clear rules for lease permit and environmental licensing, the aquaculture sector has attracted considerable private investment and increased production and job creation. Brazil currently has 16,000 aquaculture enterprises officially registered, 1,000 percent more than five years ago. The sector is predominately based on small-scale farming units and employs 100,000 self-employed farmers, often integrated with other agriculture production activities by small-scale farming enterprises.

year in Mauritius and bring revenue from tourism to the local economy. This calls for closer attention to resource health, which requires regional coordination due to the migratory behavior of large game fishes. The progressive development of ecotourism is directing greater attention to traditional and artisanal fishing activities and cultural values, and is a way of promoting tourism benefits for fishing communities.

Manufacturing is increasing its productivity at the cost of shedding jobs

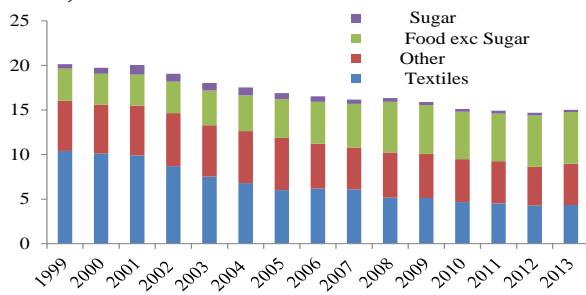
79. **The textile sector continues to face considerable challenges.** Manufacturing still accounts for around a quarter of GDP compared to an average of over 21 percent in middle-income countries and employs around 9.2 percent of the Mauritian labor force in 2013. The textile industry is the main subsector representing 4.9 percent of GDP and employing 53,000 workers, 18,515 of them foreign workers in 2013 ([Figure 62](#) & [Figure 63](#)). The sector has made substantial improvements in productivity at the cost of shedding jobs. However, the profitability of the textile industry falls short compared to the average profitability of Mauritian firms in other sectors.

80. **The existing manufacturing composition may undermine prospects for further diversification of export goods.** As noted in Hausmann and Hidalgo (2010),⁵⁹ the garment industry does not necessarily facilitate a country's expansion of exported goods. Furthermore, the textile sector faces the possibility that duty- and quota-free access to the United States under AGOA could expire in 2015 for a range of goods. Also, if the United States opens preferential access to Asian countries, competition will further increase. This would make it difficult to build on the existing textile sector to diversify into new manufacturing areas. In this case, there would

⁵⁹ Ricardo Hausmann and César A. Hidalgo "Country diversification, product ubiquity, and economic divergence," CID Working Paper No. 201, October 2010. The paper noted that availability of certain capabilities in a country can be inferred from export data.

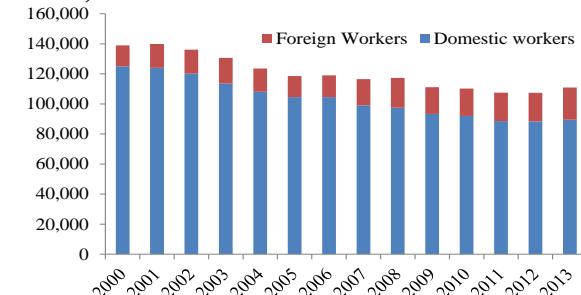
be an impact in terms of access to know-how and skill spillovers in the manufacturing sector, which may drag the growth potential of Mauritius down in the medium term.

Figure 62: GDP by manufacturing group, % of GDP, 1999-2013



Source: Statistics Mauritius

Figure 63: Employment in the manufacturing sector, 2000-2013

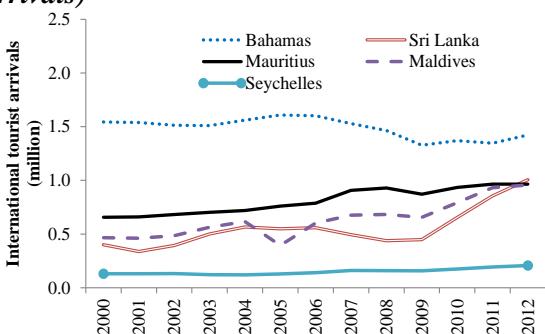


Source: Statistics Mauritius

The tourism sector: excess capacity and domestic constraints

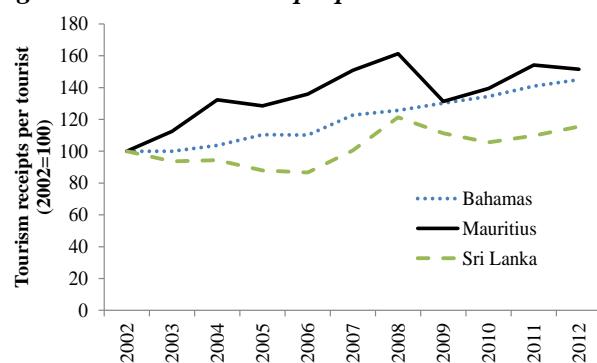
81. **The tourism sector has been severely hit by adverse economic shocks in Europe, compounded by overcapacity and loss of competitiveness.** Tourism represents 7 percent of GDP and 5 percent of total employment in 2012. This is after tourism suffered substantially as a result of the 2008 global financial crisis and the subsequent European sovereign debt crisis, which struck hard at the country's main tourism markets. Arrivals from these markets have been on a downward trend and only partially offset by arrivals from emerging partners including China, India and South Africa. Overall, arrivals are well below what the 2002 Tourism Development Plan projected: 2 million tourist arrivals in 2014 as opposed to actual arrivals of just 1 million (Figure 64). This has resulted in increased competition for fewer tourists and the subsequent stagnation of earnings per tourist (Figure 65).

Figure 64: International tourism (Number of arrivals)



Source: WDI

Figure 65: Tourism receipts per tourist

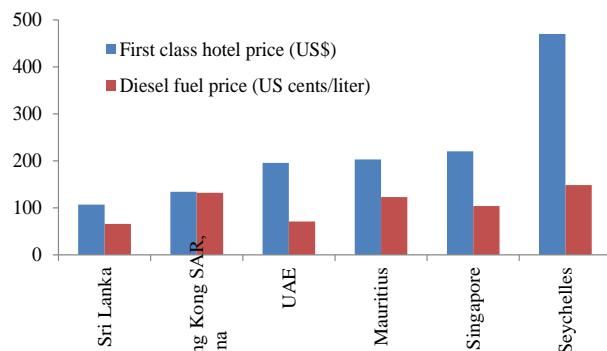


Source: WDI

82. **Mauritian tourism is becoming increasingly expensive, possibly reducing demand.** The cost of accommodation and transport in Mauritius are expensive in comparative terms (Figure 66). The limitations in air transport connectivity especially lead to higher access and egress costs, and raise concern about price competitiveness (Figure 67). Based on a price elasticity estimated

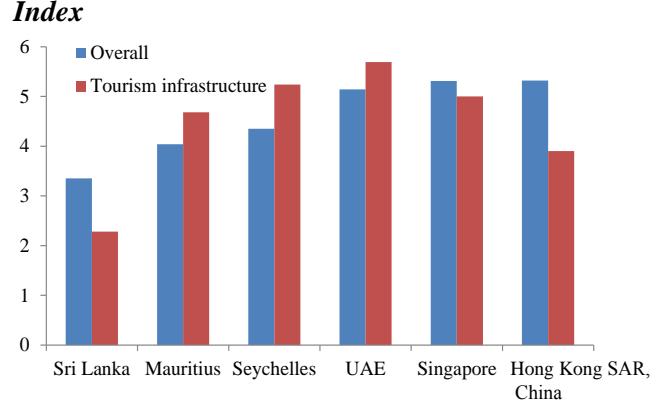
at 0.5 by the IMF in 2012⁶⁰, a 10 percent increase in price translates into reduced demand between 2 and 5 percent.

Figure 66: Hotel and fuel prices



Source: WEF (2013)

Figure 67: Travel & tourism competitiveness Index



Source: WEF (2013)

83. **There are several constraints on the potential of the tourism sector to grow further in the medium term.** Key constraints appear to be overcapacity⁶¹ and over-indebtedness of the sector, limiting the capability of the industry to retain its traditional allure as a low volume, high value tourism destination and forcing it towards more intensive mass tourism. Furthermore, the relatively restrictive air access policy that favors the local flag carrier also undermines the sector's competitiveness. Natural disasters and future impacts of climate change are also factors that have impacted the tourism industry and will increasingly do so in the future. Finally, growth is also limited by declining competitiveness, as the country has slipped back from 53rd in 2001 to 58th in 2013 in the World Economic Forum's Travel and Tourism Competitiveness Index (TTCI), behind peers such as the Seychelles. To address the constraints that are limiting the sector's growth potential, several actions could be considered:

- *Develop a new national tourism strategy.* A new national tourism strategy would confront current challenges and opportunities, most critically those regarding the amount and type of growth in accommodations supply, by providing a comprehensive, integrated, and resilient physical and environmental plan. It could also address key issues such as positioning of the destination, niche product development, market diversification, and regional collaboration initiatives, all while ensuring private sector participation in building industry resilience, productivity, and quality. It is critical that the country deals with its current problem of excess supply, which is increasing competition and putting major downward pressure on prices, while protecting their image as an exclusive destination. This may require a careful assessment of the tourist supply that the market can currently absorb.
- *Develop a revised air strategy.* A strategy could explore mechanisms for improving air access, starting with a re-evaluation of current bilateral air service agreements to identify constraints. The strategy could also serve to assess the business model for Air Mauritius in the context of changing industry dynamics.

⁶⁰ IMF (2012). Mauritius: 2012 Article IV Consultation—Staff Report.

⁶¹ The occupancy rate decreased from 68 percent in 2008 to 63 percent in 2013.

- *Diversify markets.* To continue the concerted effort to increase arrivals from emerging markets, a study could examine potential markets in terms of size growth trends, number of visits to competitor countries, accessibility, and compatibility with current markets.
- *Improve skills.* As competition from cruise lines and hotels elsewhere in the region increases, stakeholders have reported skills shortages with impacts on the quality of service, increasing costs, and the need to hire foreign workers. The country's principal tourism training institute only meets half of the demand for its courses (1,500 slots for 3,000 applicants) which calls for strategic investment in training to increase the quantity and quality of the country's tourism workforce and position the country as a regional training center for the Africa region.
- *Reinforce regional tourism cooperation.* Cooperation among Indian Ocean tourism destinations has increased in the past year, largely through the Vanilla Islands Organization. Mauritius could further benefit from the synergies it creates, including marketing in emerging destinations, promotion of cruise tourism to the region, and cooperation in other areas such as training, standards, and air transport.

The financial services sector: increasing value added to become a regional financial center

84. Financial services have expanded as a result of successful financial liberalization and double taxation agreements. The financial and insurance sectors make up 9 percent of GDP and employ over 13,400 people, equivalent to around 2.3 percent of the total labor force in 2013. The sector took off when the government established an offshore financial center in 1989 that has constantly modernized its legal and regulatory infrastructure in line with global trends. The success of the financial center is mainly due to its growing Double Tax Agreement (DTA) network supported by Investment Promotion and Protection Agreements. Since 1994, Mauritius also has a well-capitalized stock exchange with foreign investors accounting for 40 percent of daily trading.⁶² Overall, offshore business represents more than half of banks' deposit and loan books in Mauritius.⁶³

85. Reforms in 2006 eliminated the distinction between offshore and onshore banking, further supporting the development of the sector. Until 2006, there were two separate banking regimes, offshore and onshore, with only about ten offshore banks admitted in Mauritius. In 2006, the Banking Act was amended such that all banks were governed by one single banking license under supervision of the central bank. The domestic banking sector is large in relation to the size of the economy and banks' total assets as a percentage of GDP increased from 272 percent to 280 percent over the past five years. Assets held by domestic-owned banks represent 42 percent of total banking sector assets while subsidiaries and branches of foreign-owned banks held 51 percent and 7 percent of total assets, respectively. Banks dominate the allocation of credit as they account for around 97 per cent of total credit in the country.

86. Mauritius is facing challenges due to its renegotiation of the double taxation agreement with India. Mauritius accounted for 42 percent (US\$54 billion) of total FDI to India from 2001 to 2011. The main concern for the sector is the request of India to revise the DTA agreement to impose more stringent conditions and prevent companies from using the Mauritian

⁶² Market capitalization of Mauritius' stock market is 70 percent of GDP compared to 52 percent of GDP for upper middle-income countries and 111 percent of GDP for high-income countries.

⁶³ There are 23 licensed banks in Mauritius which cater to domestic and offshore businesses.

jurisdiction merely for tax purposes. The on-going negotiations have already created uncertainty that has adversely affected investment flows between the two nations.⁶⁴ Furthermore, companies incorporated in Mauritius will need to show that they have a substantial presence in the country to benefit from the treaty, which will require them to increase the types of services offered as well as the number of service providers in Mauritius.

87. Mauritius is facing challenges due to increased regulations and competition from emerging jurisdictions. Mauritius ranks 63rd globally in the latest Global Financial Centers Index. Future growth drivers of the financial sector will come from the provision of higher value services but sector development is constrained by several factors including its international positioning. The available talent pool needs to further deepen its expertise in a range of sophisticated financial products and services. Cross-border exposures of domestic banks remain significant and require prudent supervision, removing existing regulatory gaps and strengthening institutional capacity for effective regulation. Development of related sectors, such as insurance, is constrained by limited investment opportunities in a small domestic market and competition is largely focused on the existing business, rather than the development of new markets. However, in pursuit of its internationalization strategy, the stock exchange aims to gradually move from an equity-based domestic market to a multi-product internationally oriented one. This would serve to move products listed/traded on the stock exchange up the value-chain.

The ICT sector: Employment creation is constrained by limited broadband and available skills

88. The Government strategy to develop the ICT as a major pillar of the economy has translated into substantial employment and firm creation. The strategy has focused on providing an enabling environment with a solid regulatory framework that promotes infrastructure deployment and attracts foreign investment to the country. As a result, the sector has experienced remarkable growth over the past decade, and around 600 ICT companies currently operate in Mauritius with annual turnover of around US\$1 billion and 18,500 employees in 2013 or 3.2 percent of the total workforce.⁶⁵ In addition, around US\$41 million of FDI has been attracted into the sector since 2010. Given Mauritius' ability to service both French- and English-speaking export markets, business process outsourcing (BPO) has become a particularly strong segment of the ICT sector with an annual average growth of 14 percent in the 2004-2012 period and around 330 active companies.

89. The government has expanded the international fixed broadband market, which is key for Mauritius' BPO sector and other ICT foreign investments. Over the last 12 years, Mauritius' supply of international bandwidth has increased through its links to three submarine cables.⁶⁶ The government liberalized access to the international landing station, allowing new players to offer international bandwidth at much lower rates. As a result, the country's outgoing

⁶⁴ According to figures compiled by Financial Services Commission (FSC), the share in the number of investments made by global business companies into India slumped to 15.9 percent in 2012 from 32.2 percent in 2010.

⁶⁵ The sector includes activities such as software development, call centers, business process outsourcing (BPO), IT-enabled services, web-enabled services, training, hardware assembly and sales, networking, consultancy, multimedia development, disaster recovery, and other support services.

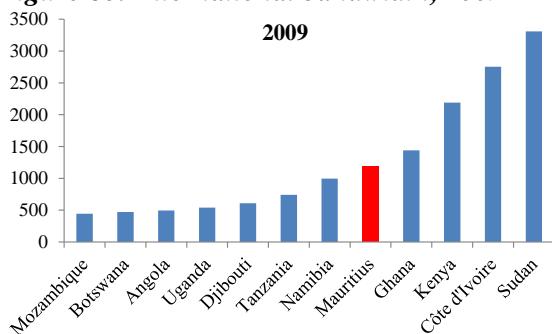
⁶⁶ Since 2002, Mauritius has been linked with Southern Africa and South Asia through the SAFE (MT-backed) cable, since 2009 it has been linked with Madagascar through the first cable of the Lower Indian Ocean Network (LION-1, Orange-backed) and indirectly to the Eastern African Submarine System (EASSy) cable, and since 2012 it has been linked with Kenya through the LION-2 cable.

international internet bandwidth has increased six-fold over the period 2009-2013 to reach 11.64Gbps in 2013. In addition, Mauritius' total international bandwidth capacity stood at nearly 23Gbps in 2013, helping to drive demand for BPO, call centers, international voice traffic, mobile data services, and internet access in Mauritius, all of which are areas the country intends to foster in the medium term.

90. Despite its considerable potential for growth, the ICT sector is showing signs of deceleration. Based on the sector's strong performance during the decade the government expects that the ICT/BPO sector will contribute 7 percent of GDP by 2014. Yet, a recent slowdown in sector growth has kept ICT's contribution to GDP around 6.4 percent since 2010 with a slight decline to 6.3 percent in 2013. This is largely associated with constraints in broadband tariffs and lack of available skills.

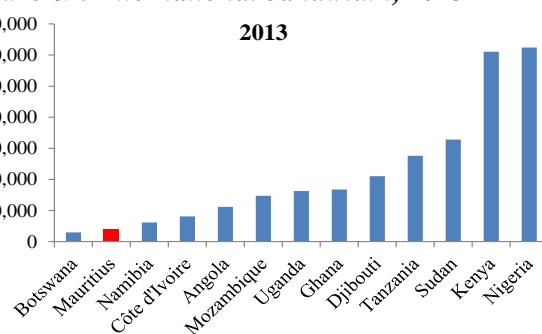
91. Mauritian broadband market remains relatively modest. While international bandwidth usage in Mauritius grew by 62 percent in 2009-2013, other more liberal markets such as Kenya grew by 173 percent over the same period ([Figure 68](#) & [Figure 69](#)). Thus, although Kenya's bandwidth utilization was about twice that of Mauritius in 2009 it then grew to more than ten times in 2013, giving Kenya a competitive advantage over Mauritius in terms of lower wholesale bandwidth prices and therefore capacity to attract BPO traffic.

Figure 68: International bandwidth, 2009



Source: TeleGeography

Figure 69: International bandwidth, 2013



Source: TeleGeography

92. If Mauritius wishes to increase the sector's contribution to GDP, it will need to address a persistent and growing mismatch between workers' skills and market needs. The number of employees needed in the IT/BPO sector is projected at around 18,000 in 2014 and 19,000 in 2015, a significant increase over current levels.⁶⁷ Employers confirmed that the ICT sector is facing a labor shortage that is expected to continue or worsen over the next five years. Key to this was lack of sufficient work experience and qualifications in both technical and soft skills. Employers complain that neither the training nor the education systems meet market demands. Government efforts, such as the establishment of an ICT Academy or the ICT Skills Development Programme have had limited impact as they have yet to meet market needs.

93. The ICT sector may have reached a plateau in terms of the productivity gains that additional workers can provide and may require workers with more advanced ICT skills.

⁶⁷ The Human Resource Development Council conducted a study in 2011 among ICT employers in Mauritius on the labor shortage in the IT/BPO sector.

New entrants in the Mauritian ICT/BPO sector are turning away from BPO and toward information processing outsourcing (IPO).⁶⁸ For the ICT sector to drive further growth, Mauritius' needs to promote higher ICT value services,⁶⁹ which may require as many as 11,000-15,000 additional ICT-skilled jobs. This increased contribution of ICT to economic growth through additional value added will need to overcome also many of the innovation constraints identified in previous sections.

94. Mauritius can overcome its current regulatory and skills mismatch constraints to boost ICT employment and GDP growth. A full rollout of broadband with competitive national and international tariffs combined with a more highly skilled workforce could not only drive greater ICT sector growth but also boost Mauritius' efforts to reach high-income status.

Four areas seem particularly relevant to overcome current constraints and seize all ICT opportunities:

- *Legally authorize a new licensing regime to promote further market entry.* This regime could consist of two main license types: facilities-based operator (FBO) licenses, which would allow an operator to deploy and operate telecoms networks, systems, and facilities for both local and international traffic; and service-based operator (SBO) licenses, which would grant the holder rights to lease telecom network elements from FBOs for the provision of services or for the resale of such services to third parties.
- *Unbundle the local loop.* This would allow both fixed and mobile operators to access the “last mile” of the network owned and operated by the incumbent, Mauritius Telecom (MT), to allow for supply-side substitution of fixed-line and fixed-wireless broadband in order to foster competition, bring down prices, and increase the number of broadband subscribers overall. Unbundling the local loop would also allow other operators besides MT to offer international private-leased line circuits, thus further reducing tariffs for international bandwidth connectivity and encouraging firms to invest in local loop networks to service retail markets instead of just corporate customers, as they do currently. International examples show the potential that smart regulation can have in further developing the ICT sector (Box 8).
- *Promote infrastructure sharing wherever possible.* This would allow operators to connect to already-existing broadband networks that may have been laid by other utilities such as oil, gas, or electricity, and to share infrastructure for 3G and 4G networks.
- *More integrated and strategic training co-led by the Ministry of ICT, the Ministry of Tertiary Education and the private sector, with priority given to the private sector's needs.* The skills mismatch is embedded in larger constraints in the education sector, including the relative decline in the number of students in the tertiary level enrolled in an ICT field from 12 percent in 2006 to 7.3 percent in 2013.⁷⁰ The government can create incentives for the ICT industry to collaborate more closely with universities to reshape their ICT curriculum and close the education-market gap by providing courses and degree programs that correspond to the ICT industry's needs. The industry should be allowed and encouraged to contribute with consultants and foreign experts to provide specialized courses as needed. The degree programs should also have fully integrated apprenticeships/internships along with job placement and

⁶⁸ Joseph and Troester (2013), p. 79.

⁶⁹ This includes services such as accounting, R&D, finance, law, medicine, tourism, cloud computing, collection centers for knowledge processing outsourcing (KPO), and data analytics and research. Joseph and Troester (2013), pp. 85, 87.

⁷⁰ http://www.gov.mu/portal/sites/indicators/stats_Manpower.html

performance follow-up for graduates. Outside of the tertiary sector, the government could incentivize the private sector to co-create and offer high-level requalification and certification programs for middle and senior ICT managers in order to quickly boost their skills.

- *Creation of a stronger innovation ecosystem in Mauritius to stop brain drain and drive the increase of higher value-added ICT jobs.* In this regard, the government could use high-tech accelerators and mentorship programs in areas such as business support activities, engineering, IT technical skills, entrepreneurship, and IT management as a new type of school for entrepreneurs in business schools or other mainstream establishments. All this could be coupled with widespread and targeted communication campaigns to highlight the prospects and strong market demand for the IT and engineering professions.

Box 8: The power of smart regulation and competition in fostering the ICT sector

Korea and Singapore are high-income countries and world broadband leaders. In 1995, Korea had less than 1 percent Internet penetration and Singapore had barely 3 percent. Both countries established strong regulators that promoted brisk competition based on an open licensing regime, local loop unbundling, and robust infrastructure sharing. Singapore actually required all operators to interconnect to each other's networks to ensure seamless communications throughout the country. Today, both countries have close to 100 percent fixed broadband penetration as well as widespread mobile broadband penetration. Following the example of these economies, Lithuania recently established a strong regulatory framework which expanded broadband household penetration to 81 percent by end-2012, including FTTH deployment to 100 percent of households with connection speeds between 30 Mbps and >100 Mbps.

Table 1: Main challenges identified for boosting competitiveness: moving from industrial policy to innovation policy

<i>Issue</i>	<i>Impact on twin goals</i>
<i>Outdated industrial policy</i>	Cross subsidies and protection measures still support sectors facing strong competition such as textiles, in part to maintain jobs. Yet this objective is not always fully met, for example if there is a large proportion of foreign employment in those sectors. This hinders the development of service sectors that often end up subsidizing less efficient sectors.
<i>Sector specific constraints</i>	Sector constraints hold back the potential to accelerate investment, attract FDI, and create employment. The constraints range from fragmentation in the agriculture sector to unclear legal frameworks for the expansion of aquaculture, to limited regional cooperation in support of tourism.
<i>Inadequate innovation policy</i>	Inadequate intellectual property policies, institutions for R&D, and university and enterprise collaboration hamper the capacity of the economy to absorb new technology and increase the know-how content of FDI.
<i>Constraints on SME development</i>	SMEs represent the majority of businesses in Mauritius but fail to create enough employment or generate enough profits or exports. Their challenges include limited access to finance as well as inadequate government support in areas such as accessing and sustaining exports.
<i>Limited amount and quality of skills</i>	Inadequate skills are holding back the potential of the economy to diversify and increase competitiveness. This constraint also limits the inclusiveness of growth, as a large part of the population cannot acquire these skills through education or training.
<i>Constraints on trade facilitation and connectivity</i>	Expanded capacity in airport, port and telecom infrastructure is undermined by policies that constrain operational efficiency.

Chapter 3. Supporting Inclusion

Main messages – Chapter 3

- *The government of Mauritius ensures that all citizens have access to basic assets and public services, including universal health and education.*
- *However, some gaps remain in terms of quality of services rendered, particularly in the education sector, which is not on par with other upper middle income countries.*
- *To compensate for quality gaps, households spend substantial amounts on private education (and health).*
- *As a result, outcomes of the educational system are very unequal and largely explained by socioeconomic factors which feed an intergenerational poverty cycle.*
- *Limited and inadequate provision of training cannot compensate for educational gaps.*
- *Also, social assistance is fragmented and limited and, while partially able to compensate for limited labor income, it cannot break the poverty cycle.*
- *Employment creation remains subpar, with low labor force participation, substantial gender discrimination, and high youth unemployment, reinforced in part by existing wage settling mechanisms.*

95. This section focuses on the capacity of all individuals in Mauritius to access, build, and leverage assets to contribute to and benefit from productive growth. It focuses on the level and equity of access and quality of key resources for asset-building, including:

1. Health
2. Basic services and utilities
3. Education and skills
4. Financial assets
5. Social protection
6. Labor markets and employment creation

96. The Government of Mauritius has invested heavily in ensuring all its citizens, regardless of status or geography, have access to basic assets and public services, including health, education, infrastructure, and social safety nets. As a general rule, coverage is broad, although some gaps remain in the quality of the services delivered. Serious challenges remain in ensuring quality and consistency of provision and efficiency of spending.

3.1. Health

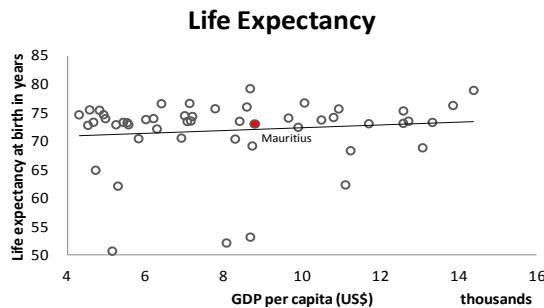
Coping with NCD prevalence, system inefficiency, and out of pocket spending

97. **Mauritius' health system has achieved good results.** Mauritius has a public system of healthcare financed through general tax revenue that provides services with no user fees, premiums, or other prepayment schemes. Nonetheless, households spend significantly on health care in the private sector through health insurance and out-of-pocket payments for care and treatment. As a result, private sector spending represents around half of total health sector expenditure. Mauritius' health indicators are slightly better than expected when compared to other

upper-middle-income countries in life expectancy, infant and under-5 mortality, immunization coverage, and communicable disease rates (Figure 70 & Figure 71).⁷¹

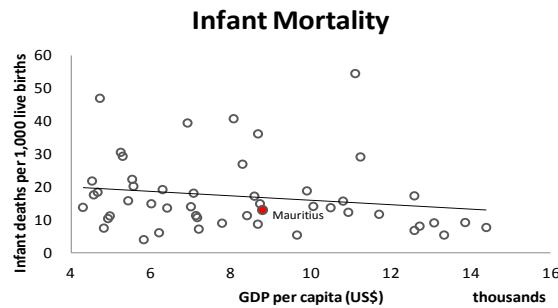
98. Mauritius is burdened by a high rate of non-communicable diseases (NCD) that will put intense pressure on the health system in the future. According to the 2009 NCD Survey, 1 in 2 Mauritians aged 25-74 either has diabetes or impaired glucose metabolism (pre-diabetes).⁷² Half of the population is estimated to be either overweight or obese⁷³ and the prevalence of hypertension is 38 percent. High cholesterol, smoking (especially for men) and lack of physical activity provide added risk factors.⁷⁴ Only about half of those found to have diabetes knew that they had the disease and, for every treated case of hypertension, there was at least one untreated case.⁷⁵ These findings indicate a serious NCD epidemic, which will become more critical as the population ages. Prevention, regular screening and community-based treatment and management of these and other chronic diseases will be essential to avoid the destructive health effects and excessive costs of waiting for hospital-based treatment.

Figure 70: Life Expectancy in Mauritius compared to other upper-MICs



Source: WDI and Statistics Mauritius

Figure 71: Infant mortality in Mauritius compared to other upper-MICs



Source: WDI and Statistics Mauritius

99. There are substantial linkages between NCDs and socio-economic status in Mauritius. As NCDs are largely linked to lifestyles, inequities in socioeconomic status result in unequal risks of NCDs.⁷⁶ The most important socioeconomic factor associated with NCDs in Mauritius is the level of education with the least educated at far higher risk. Those with 13 or more years of education have 53 percent lower odds of having diabetes and 50 percent lower odds of being hypertensive compared with those with 0-3 years of education. Those with 10 or more years of education have 25-30 percent lower odds of being overweight or obese than those with less than 3 years of education. However, the most educated exhibit other risk factors such as smoking,

⁷¹ Specifically, life expectancy at birth is 69.7 years for males and 77 years for females, the infant and under-5 mortality rates are 12.6 and 15.6 per 1000 live births respectively, immunization coverage is 100 percent, and communicable diseases rates are low (e.g., HIV infection prevalence rate is 0.97 percent and malaria has been eradicated).

⁷² The prevalence of Type 2 diabetes was 21.3 percent for 20-74 year old, increasing to 46 percent for those older than 65 years.

⁷³ Using the European Body Mass Index (BMI) cutoff points, the prevalence of obesity was 16 percent and the prevalence of overweight was 34.9 percent. When ethnic specific BMI cutoff points are used this increased to 65.6 percent.

⁷⁴ The prevalence of elevated total cholesterol (≥ 5.5 mmol/l) was 30.3 percent, while the prevalence of elevated triglycerides (≥ 2.0 mmol/l) was 16.9 percent (men: 25.1 percent, women: 8.9 percent). Lipid-lowering agents were being taken by only 10.2 percent of the population. 40.3 percent of men and 3.7 percent of women are smokers, and 56.2 percent reported no participation in moderate or vigorous leisure time physical activity.

⁷⁵ Only 41 percent of individuals were found to be on hypertension medication.

⁷⁶ Madise, N.J., Social and Economic Determinants of Health in Mauritius: A Focus on Non-Communicable Diseases, University of Southampton, 2013.

sedentary lifestyles, and alcohol consumption.⁷⁷ While levels of education may be a proxy for wealth, high levels of education may also be linked to healthier lifestyles and a better understanding of health messages.

100. Out of pocket health spending is becoming an increasingly heavy burden at the household level, particularly for the lower income groups. Between 2006 and 2012, the overall level of out-of-pocket health spending has increased as a share of household income of the bottom 40 percent (Figure 72 & Figure 73), and did so at a much higher rate than the population as a whole (Figure 74 & Figure 75). Also, 5 percent of households dropped one or more income quintiles as a result of health spending in 2012, compared to 3.8 percent in 2006. The number of poorer households with catastrophic level expenditures⁷⁸ rose between 2006 and 2012. Furthermore, 37 percent of households had no health spending at all in 2012, down from over half in 2006. This reflects the sporadic and unexpected nature of health expenditures but also suggests that those in the bottom income quintiles could be putting off necessary health spending.

Figure 72: Health spending as percentage of household income

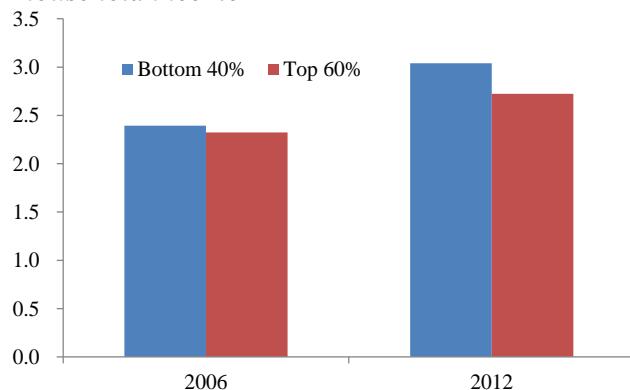
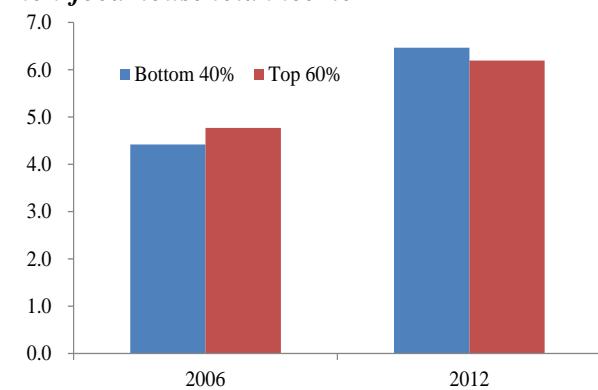


Figure 73: Health spending as percentage of non-food household income



Source: HBS 2007, 2012

Figure 74: Percentage of households making out-of-pocket health expenditures

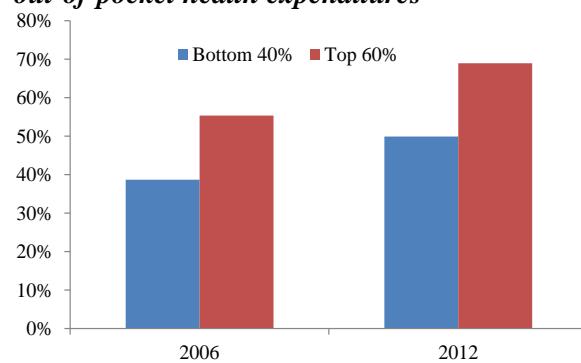
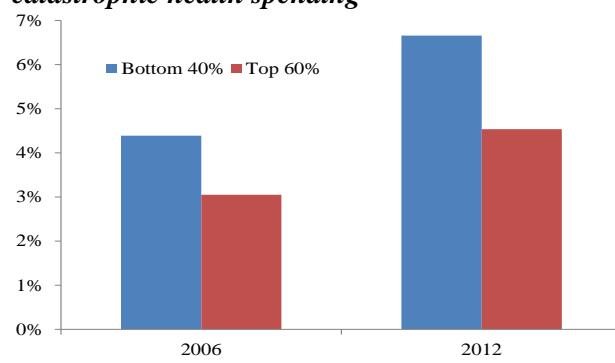


Figure 75: Percentage of households facing catastrophic health spending



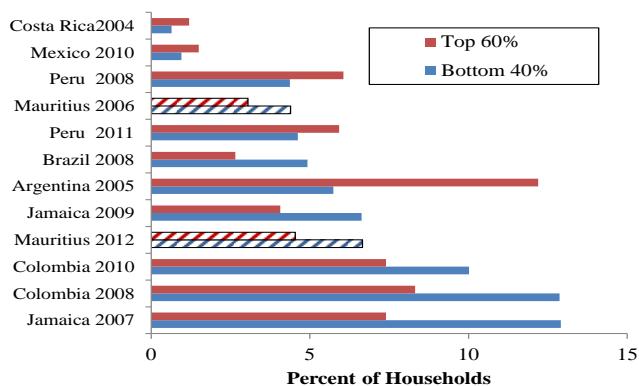
Source: HBS 2007, 2012

⁷⁷ Ibid, pp. 8-9

⁷⁸ Defined as 20 percent or more of their income

101. Mauritius' health situation is average but getting worse relative to other upper-middle income countries. While international comparison data are relatively scarce, the incidence of catastrophic health expenditures⁷⁹ shows that the situation in Mauritius has deteriorated compared to other upper MICs in Latin America (Figure 76). This is even more striking as some countries are showing progress in addressing catastrophic household health spending. For instance, Colombia improved somewhat between 2008 and 2010, while Jamaica improved substantially between 2007 and 2009. Systemic challenges in the health sector are associated with underlying governance constraints and further analysis is needed to detect key binding constraints across the service-delivery value-chain and plan their removal through focused solutions.

Figure 76: Comparison of catastrophic health expenditure across peer countries



Source: HBS 2007, 2012 and World Bank reports

3.2. Basic resources and services

102. Mauritius' high population density and small size makes accessibility of basic resources and services relatively simple. Significant improvements have been made in access to essential services over the last decades in rural and urban areas.

Mauritius enjoys affordable and broad access to water services but quality is lagging behind

103. While access rates for water supply are high and services are affordable, the quality of services lags behind standards for comparable middle-income countries. The government of Mauritius, through the Central Water Authority (CWA), has managed to sustain universal access to improved water services over the last 20 years, keeping pace with urban growth and increasing demands. Coverage rates of piped network systems are currently around 100 percent in urban settlements and 99 percent in the rural areas.⁸⁰ Tariffs are low and declining as a percent of household income, in part due to inadequate metering practices (Figure 77). However, the quality of service is deteriorating. Average hours of supply have declined significantly in several

⁷⁹ Defined as more than 25 percent of non-food expenditure

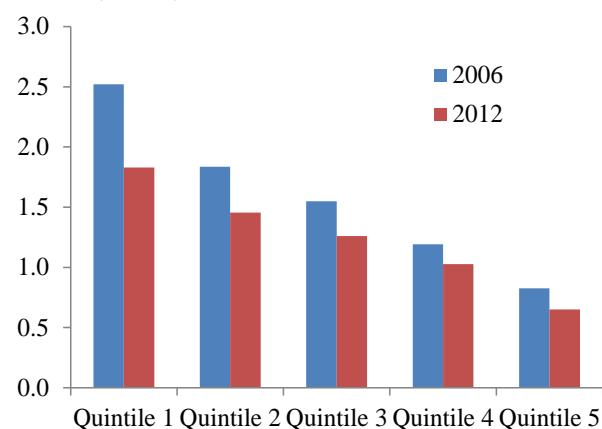
⁸⁰ Progress on drinking water and sanitation, UNICEF - WHO – 2012.

areas,⁸¹ and demand management and customer service are lagging industry standards. Services are also affected by the vulnerability of water sources, including exposure to potential contamination,⁸² uncontrolled extraction, and changing climatic conditions.

Limited progress in expanding the piped sewerage system

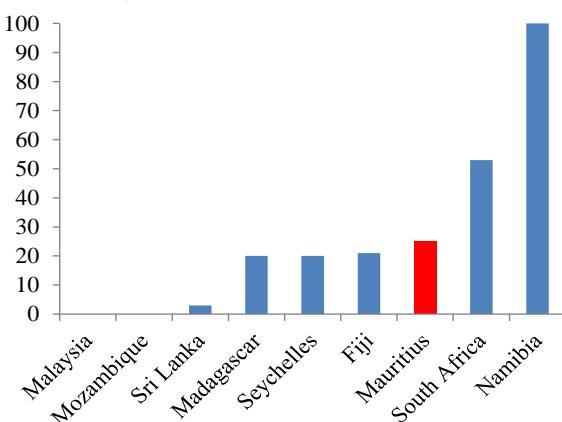
104. The government has prioritized improving wastewater management, but progress in implementing sector plans has been slow. Access to improved sanitation services is relatively high at around 91 percent for urban and 88 percent for rural areas. However, there is currently an overreliance on on-site sanitation systems, which have been poorly maintained and inadequately regulated, placing water supply sources at risk from contamination through uncontrolled discharges and illegal dumping. The piped sewerage system currently connects around 25 percent of the population and the government has established an ambitious target of 75 percent coverage by 2040 (Figure 78).⁸³ However, implementation plans require substantial capital investment and progress has been slow.

Figure 77: Cost of water as percent of household income, 2006, 2012



Source: HBS 2006, 2012

Figure 78: Sewerage Coverage, percent of households, 2014



Source: IBNET Blue Book 2014

The electricity sector adequately covers the entire population but at a high price

105. Mauritius' electricity sector performs well but the cost of electricity supply is high. The performance of the Central Electricity Board (CEB), the public utility that is responsible for the generation, transmission and distribution of electricity in Mauritius and Rodrigues, compares favorably with other public electricity companies in middle-income countries. There is almost complete coverage of the entire population, service quality is good with limited blackouts, and the sector is mostly self-financing through tariffs with limited public subsidies. Kilometers of

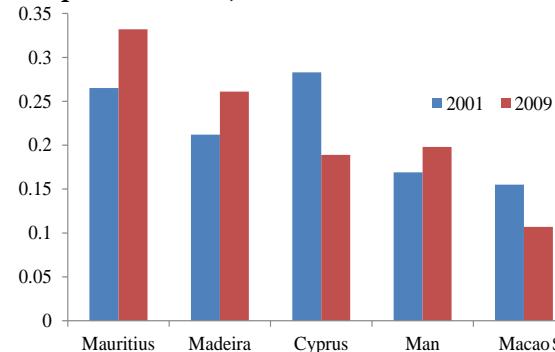
⁸¹ Consumers have reported significant interruptions through water rationing regimes limiting the supply of water to around 4 hours/day during the dry season in some parts of the country (notably the central plateau, upper Mare Aux Vacoas and Lower Mare Aux Vacoas). Source: Water Sector Reform, Comprehensive Action Plan.

⁸² Cyanobacteria has been detected in a number of watersheds, which is an indication of degraded water quality found typically in nutrient rich, eutrophic waters as a result of deforestation and poorly controlled agricultural practices. There has also been reports of saline intrusion from over-abstraction of shallow aquifers and contamination of the groundwater and surface waters due to illegal discharges of wastewater and poor onsite wastewater management practices.

⁸³ National Water Policy, July 2014.

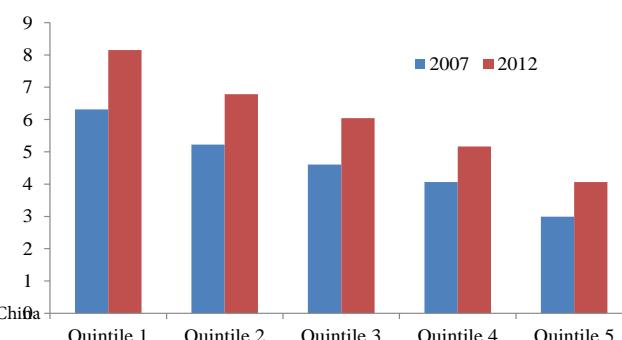
network have grown at an average rate of 2.6 percent between 2005 and 2011, in line with the number of customers. However, the average price of electricity is high when compared with similar island (Figure 79) and represents around 8.2 percent of income for the poorest households, a significant increase since 2007 (Figure 80). In addition, gas is broadly used for cooking and represents an additional 2.9 percent of income of the poorest quintile.

Figure 79: Price of Kw in Mauritius and other comparable MICs, 2001 and 2009



Source: A benchmarking study of island electricity companies: The case of the CEB in Mauritius, 2012

Figure 80: Percentage of household income spent on electricity, 2007 and 2012

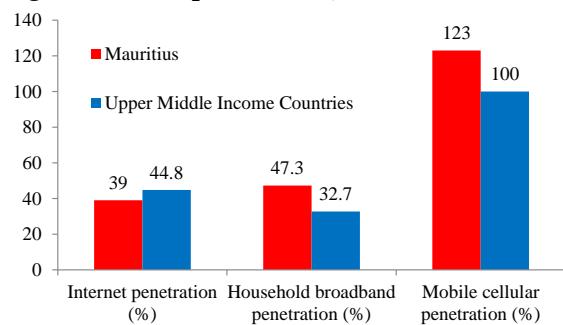


Source: HBS2007 and 2012

Communication technology is broadly available to the entire population at reasonable tariffs

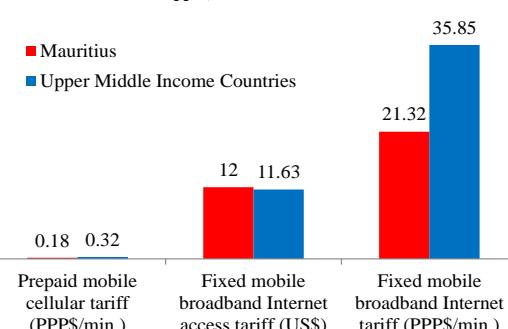
106. **Mauritius is doing relatively well in the information and communications technology (ICT) sector in terms of price, access, and coverage as benchmarked against other upper middle-income countries.** The country's domestic operators accounted for a total of 167,000 high-speed internet subscribers as of June 2014, up from 147,000 in 2013. The overall broadband household penetration rate is 47.3 percent, above the upper middle-income average of 32.7 percent (Figure 81) and well above the African average of 4.3 percent. However, Mauritius is still below the average for high-income countries of 74.9 percent.⁸⁴

Figure 81: ICT penetration, 2013



Source: World Development Indicators, Global Technology Report 2014

Figure 82: ICT tariffs, 2013



Source: World Development Indicators, Global Technology Report 2014

⁸⁴ TeleGeography, June 2014.

107. The government is supporting the provision of high-bandwidth connections to households. In 2012, the government adopted an ambitious National Broadband Policy 2012-2020 that seeks to provide at least 60 percent of homes with affordable download access at 10Mbps speed by 2014, and almost 100 percent of homes with an actual downlink of 100Mbps by 2020. In the 2013 budget, the government also introduced measures to cap the entry-level price for broadband below MUR200 per month (US\$6.29) ([Figure 82](#)). The country's primary telecom providers are moving ahead with the rollout of next generation networks and in 2013 fiber-to-the-home (FTTH) services were available in six locations and around 15,000 customers had migrated to these services. In addition, new spectrum has been provided for 4G Long Term Evolution (LTE) technologies with around 195,000 subscribers as of July 2014.

3.3. Education and skills

There is broad access to education but challenges to quality and equity remain

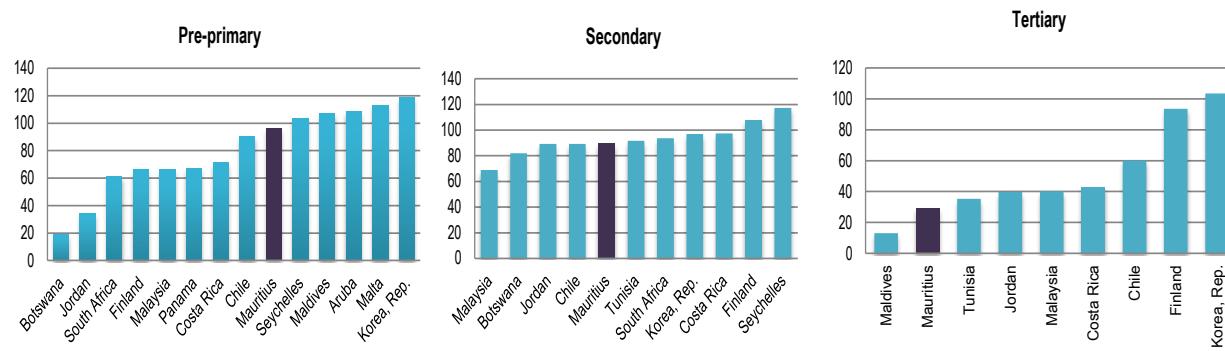
108. Educational opportunities have improved significantly over the years and have enabled primary and secondary school enrolment levels to reach those of upper-middle and high-income countries.⁸⁵ Since 2005, education in Mauritius is compulsory until the age of 16. Transition between education cycles requires an examination that also certifies completion of the cycle.⁸⁶ As a result, practically all Mauritian children attend primary education, and 88 percent move towards secondary education ([Figure 83](#)). Gender parity has been achieved, and in fact more girls are enrolled in secondary education than boys. Development of post-primary levels has been particularly impressive with access to secondary education increasing from 75 percent of the population in 1996 to virtually 100 percent by 2011.⁸⁷ The tertiary education system, in which just 10 percent of the population was enrolled in 1996, grew at a similarly impressive rate, with 40 percent of the tertiary school-age population enrolled in 2011.

⁸⁵ In 2012, Mauritius' primary net enrolment rate (NER) and secondary gross enrolment rate (GER) were 97.8 percent and 95.9 percent, respectively; NERs and GERs for Mexico and Korea in the same year were, respectively, 96.3 percent and 85.7 percent (Mexico), and 99.1 percent and 97.2 percent (Korea).

⁸⁶ Mauritius has a 6+5+2 education structure; that is, six years of primary schooling, followed by five years of secondary education and a further two years of higher secondary. At the primary level, promotion from one grade to the next is automatic until Grade 6, when pupils sit for the Certificate of Primary Education (CPE). Students can follow both academic and vocational education and training tracks, and the decision to choose one track or the other often follows the student's results in the Certificate of Primary Education (CPE). Students are given two opportunities to sit for and pass the CPE. If unsuccessful in both of them, they are offered a place in the pre-vocational track and will remain in school until they complete the age of sixteen. Similarly, access to Upper Secondary is conditioned by successfully passing of the Cambridge School Certificate (CSC) and entry to University is permitted to pupils who have passed the Cambridge Higher School Certificate (CHSC).

⁸⁷ Secondary education includes general and pre-vocational education.

Figure 83: Education enrollment per level, 2011



Source: UNESCO Institute for Statistics, Online Database Nb: Gross Enrolment Ratios are not available for primary education

109. Inequity issues impact learning achievements in Mauritius as children from low-income families have lower primary completion rates and performance than their well-off peers. In 2008, nearly 60 percent of poor household members did not hold a Certificate of Primary Education (CPE), compared to a 34 percent for households overall (Figure 84). At the core of this inequity is the CPE and its use as a selection mechanism for secondary school, impacting education outcomes.⁸⁸ As a result, there is substantial regional disparities in educational outcomes in Mauritius.⁸⁹ All this has translated into a very selective system, which results in a very high between-school variance in reading performance, a result of students with similar abilities and similar socio-economic backgrounds clustering together. One possible solution could be converting the CPE into a diagnostic test instead of using it as an ‘early tracking examination’ to allow students to choose between the academic and training tracks. Government commitment to shift to a nine year schooling system goes on that direction but will not be exempted of implementation challenges. It will require clarifying, for instance, the suppression of the prevocational stream and the support to be provided to underperforming pupils, as well as how pupils will be allocated to secondary schools. These are issues that may face controversy, for instance, among teachers that currently benefit from the tuition system and parents that have high expectations that their children can attend the most sought after public secondary schools.

110. Mauritius still lags behind other middle-income countries in terms of learning achievements. Although most Mauritian children attend and complete primary education they lag behind their peers in comparator countries with regard to basic literacy, math, and science skills. Results from Mauritius participation in PISA⁹⁰ indicate challenges in quality of learning outcomes in spite of efforts to improve quality of education (Figure 85). Fifteen-year-old

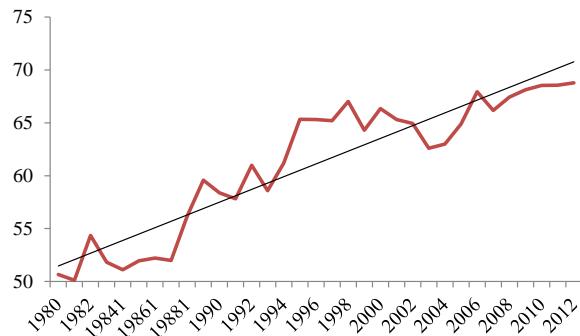
⁸⁸ The CPE favors an academic track, and has supported the development of a culture of ‘studying for the test’, which in turn has led to an expansion of private tuition, consequently favoring children from better off families. Also, although passing rates of the CPE have been growing over the years, there have been difficulties in providing adequate quality of education to those who fail the CPE.

⁸⁹ The government introduced Priority Education Zones ‘Zones d’Education Prioritaires’ (ZEP) as a structured response to the continued high academic failure of some 30 primary schools found in some deprived areas of the country. Yet, in 2011, the low performance of the ZEP schools continued to be a recurrent feature and the CPE pass rate for ZEP schools remained at 35.6 percent in 2011 compared to 68.84 percent for all schools. “The Status of the Zones d’Education Prioritaires Project in Mauritius and its Challenges”, by Y.D. Panday, Li Xu , 2013 UNESCO International Research and Training Centre for Rural Education.

⁹⁰ The Organization for Economic Cooperation and Development’s (OECD) Program for International Student Assessment (PISA) is an international assessment exercise focusing on literary, mathematic and scientific literacy for 15 year olds. Mauritius participated in PISA in 2009.

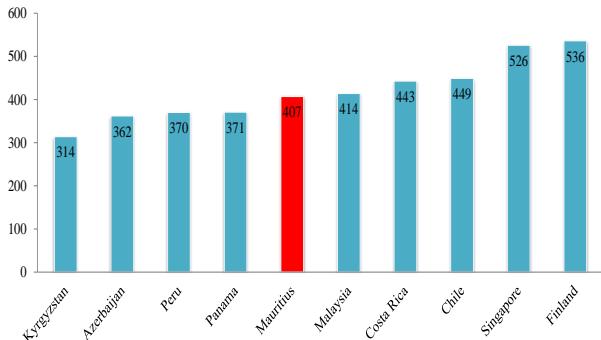
Mauritians have lower reading literacy rates than the average for their OECD peers. These low learning achievements suggest that a large segment of the population lacks adequate literacy and math skills to meet today's labor market demands, hampering their employment and income prospects.

Figure 84: CPE pass rate, 1980-2012



Source: Mauritius Examinations Syndicate

Figure 85: PISA reading results, 2011



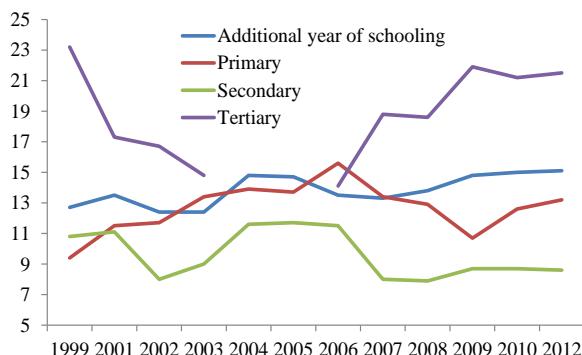
Source: PISA, 2011

111. Returns on education are high across all levels, particularly for tertiary education, reflecting growing demand for higher skills. Returns on education in Mauritius have increased and an additional year of schooling had a return of 15.1 percent in 2012 compared to 12.7 percent in 1999, in line with or above similar MICs, reflecting the growing demand for higher skills at all levels (Figure 86 & Figure 87).⁹¹ Until 2006, this increase was largely due to returns on primary and secondary education with lower returns on tertiary education. Ever since the economic liberalization in 2005, however, returns on primary and secondary education decreased while those on tertiary education boomed, furthering the gap between the better educated and the rest of the population.⁹² Data on wage premiums suggest that tertiary educated individuals are in high demand and increasingly so, due mainly to the boost of the services sectors.

⁹¹ Montenegro C. and Patrinos, H. 2014. "Comparable Estimates of Returns to Schooling around the World," Policy Research Working Paper No. 7020, September 2014, World Bank, Washington DC.

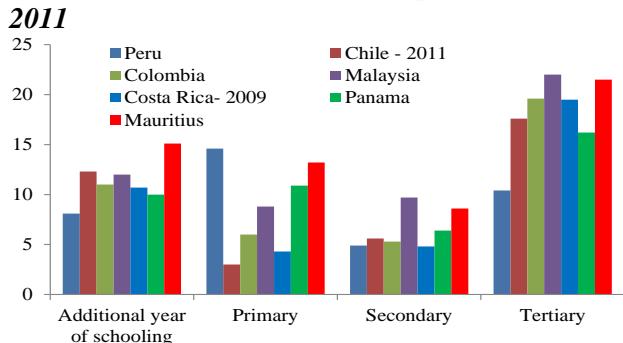
⁹² The premium for primary education is around 20 percent and for post-secondary varies between 100 and 140 percent compared to non-educated individuals.

Figure 86: Returns on schooling, 1999-2012



Source: Montenegro and Patrinos, World Bank, 2014

Figure 87: Returns on schooling, peer countries, 2011

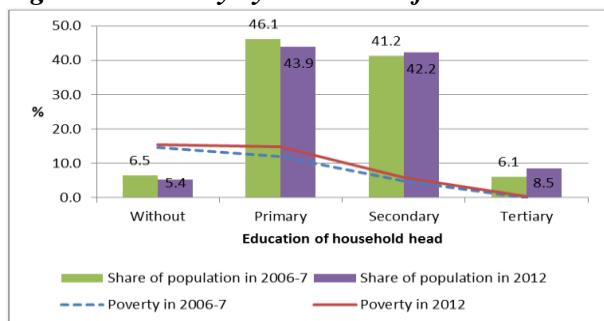


Source: Montenegro and Patrinos, World Bank, 2014

112. The expansion of tertiary education in Mauritius is important for the knowledge economy but also for shared prosperity. The expansion of tertiary education is one of the main objectives of the tertiary education reform, which aims to increase enrollment from 44 percent in 2010 to 72 percent in 2020. Tertiary education in Mauritius pays the highest returns and 83 percent of people living with household heads with complete tertiary education are part of the richest quintile. Further, having a degree is fundamental for being employed and the benefits of obtaining a post-secondary degree have increased over time. Expanding tertiary education will allow for a higher share of low income and middle class enrolment and as more tertiary graduates enter the labor market, returns to tertiary education will start to decrease, albeit slowly. These two factors may lead to a broader distribution of assets, thus contributing to more equity and shared prosperity.

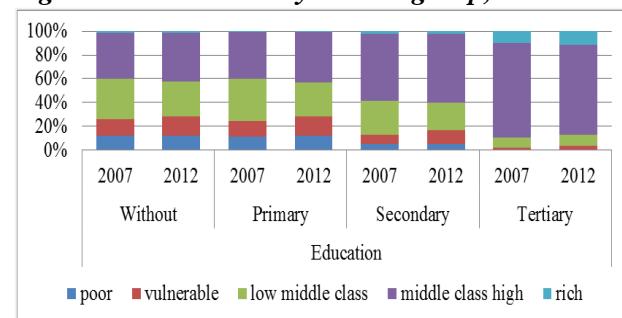
113. Education outcomes are critical in determining poverty, social mobility, and increased earnings. Although some improvement has taken place between 2007 and 2012, a third of households headed by a person without any education were part of the poorest quintile (Figure 88 & Figure 89). Those with more formal education have higher labor force participation, employment, and income as they have access to better paid jobs. There is thus a close link between the level of education and belonging to a social group. Furthermore, holding a secondary certification and, even more so, holding a tertiary education certification, ensures Mauritians a place in the country's middle class.

Figure 88: Poverty by education of head



Source: HBS 2007, 2012

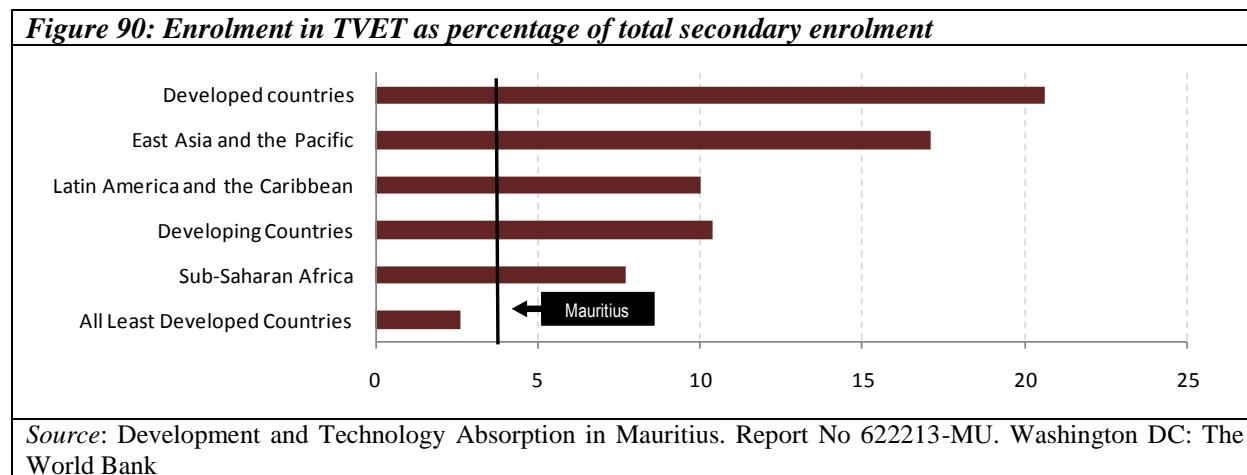
Figure 89: Education by income group, 2007 2012



Source: HBS 2007, 2012

Skill development does not respond adequately to market needs

114. **A small and fragmented Technical and Vocational Education and Training (TVET) system undermines development of the skills needed for the knowledge economy.** Overall, TVET supply remains marginal with enrollment rates far below those registered in other knowledge-oriented economies. When excluding part-time students (mostly in apprenticeships), enrollment in TVET represents less than 3 percent of the total secondary enrollment, well below the average for East Asia or even Sub-Saharan Africa (Figure 90). There is a proliferation of small, private providers, approximately numbered at 460 registered institutions providing both award (937) and non-award courses (2,661).⁹³ The large number and range of providers in the country make it difficult to compare the quality and qualifications of the training offered. It is hard for learners to find the adequate training option for their needs and for employers to know what to expect from a graduate of a particular TVET provider.



115. **TVET supply is not well aligned with market needs.** Although efforts have been made to improve the TVET system, there remain challenges in the private sector regarding the design and delivery of skills programs including a misplaced focus on low skill levels.⁹⁴ There is a strong need to develop a more relevant curriculum that includes “soft skills.” Between the private sector and the TVET system there is a lack of mechanisms that communicate the needs and requirements of the labor market. Coordination among various TVET institutions is needed to foster closer and more regular interactions with employers. Furthermore, there is an acute shortage of qualified teachers in certain trade areas due to difficulties in hiring trainers as well as high staff turnover. Trainers must have sufficient industrial experience and adopt student-centered and efficient teachings to ensure the acquisition of skills and competencies. At the same time, obsolete training equipment, particularly in industrial trades, has reduced the effectiveness of TVET in meeting the requirements of a modern economy. Finally, training institutions often do not track the employment of graduates and valuable feedback from past trainees is lost. International

⁹³ Development and Technology Absorption in Mauritius. Report No 622213-MU. Washington DC: The World Bank.

⁹⁴ Mainly NTC2 and NTC3 levels. NTC stands for National Training Certificate. NTC level 3 is described as a basic course that will enable an individual to work under supervision. NTC level 2 is described as a combination of practical and theoretical components that enable the individual to work with minimal supervision – at this level a person can become a qualified artisan.

experience shows that government intervention coordinated with the private sector have significant impact (Box 9).

Box 9: Examples of government interventions to boost skills

The **Youth Employment Subsidy (SEJ) program in Chile** is targeted to the vulnerable young population in the 18-24 age range. The SEJ program provides a subsidy to both the worker and the employer, who apply separately. Worker eligibility is determined by a vulnerability score and the employer does not know if the worker is vulnerable unless it is revealed by the worker. Funding is supplied through tax exemptions and consists of a monthly credit, in the case of SMEs (or annual credit for larger firms), or scholarships in the case of microenterprises. The program is effective in increasing formal employment and participation, especially where the youth unemployment rate is high. (Source: Bravo and Rau, 2013).

The **Brazilian SENAI's** (National Industrial Training Service/ *Serviço Nacional de Aprendizagem Industrial*) long-term planning model aims to identify the number of workers to be trained in the future and the qualifications that will be required. It simulates the spread of emerging technologies and the growth of organizational structures to estimate the demand for workers every five years. Based on these estimates subsidies are provided to develop proactive measures in the areas of vocational education, technical and technology services (Martins, 2008). This planning method has been used to analyze and make recommendations to numerous industries, including textiles, telecommunications, construction, or footwear, among others (Caruso, 2011).

The foreign-owned **Vietnamese** university inserts employability skills into its business undergraduate curriculum both before and during its **work integrated learning (WIL) internships**. First, it incorporates employability skill-related learning outcomes into courses that precede the internship, and requires interns to complete a non-credit workplace preparation program before they can engage in a WIL internship. Second, it offers semester-long internships with local Vietnamese and foreign organizations where each intern's performance on key employability skills is assessed. Third, the interns receive additional support by attending supplementary workshops throughout the internship period. These programs are more closely aligned with graduate employer and industry needs in terms of general employability skills (Christine Bilsland, 2014).

The **Singapore Skills Development Fund (SDF)** goes beyond training to influence a company's choice of technology as part of a broader government industrial strategy to restructure the economy toward a more capital-intensive system of production. There is a strong role of employers in the SDF as seven out of the 15 members of the Singapore Work Force Development Authority—the agency that controls the SDF—represent employers, compared to four from government and three from workers. The incentives for training are based on a cost-sharing principle, and the training must be considerably relevant to the economic development of Singapore. The levy is imposed only on the lower-wage workers and it promotes special training programs focusing on upgrading workers' skills. In addition, the SDF finances training vouchers and assistance for information technology training for small and medium-sized enterprises. It promotes a systematic approach to skills certification through the Skills Certification Plan for training at least a third of a company's workforce in certifiable skills over a 3-year period (Johanson, 2009).

116. While some TVET options such as apprenticeships have shown positive results, other government programs for skill development are lacking adequate evaluation. Apprenticeships account for 20 percent of total public TVET enrollment. Generally, a period of apprenticeship lasts for one to two years and leads to the National Trade Certificate/National Certificate. Employment of apprenticeship graduates is high with two thirds employed after six months of completion and 85 percent finding employment in the long term. The government has also introduced a myriad of other public programs to increase employability, build skills, support work transition of new graduates, and retrain unemployed.⁹⁵ While the results of some of these

⁹⁵ These programs include: (i) *Training and Work Placement Scheme* in the ICT/BPO sector, aimed at providing work placements to unemployed youth with secondary education; (ii) *Work-Based Learning*, which enables employers to identify talented university students who work while studying; (iii) *Accelerator Project*, which facilitates the creation of technology-based companies for young developers; (iv) *Youth Employment Program*, which incentivizes employers to recruit inexperienced youth partly refunded for their stipend; (v) *ICT Skills Development Program*, for the development of ICT skills among the youth.

programs are encouraging, the lack of adequate monitoring and evaluation makes it difficult to assess whether they are cost effective in reaching their intended goals.

3.4. Financial assets

Access to finance seems to be in line with the development status of the country

117. **Access to financial services in Mauritius, including account ownership and credit from formal institutions, is relatively broad compared to other countries in Sub-Saharan Africa.** In 2011, data from Global Findex indicated that 80 percent of the adult population in Mauritius is banked (Figure 91) and account ownership by formal and informal businesses is high relative to the region. However, only 70 percent of the bottom two quintiles of the Mauritian population hold an account at a financial institution.⁹⁶ It is unclear, though, whether access to formal finance is enough to shield poor households from vulnerabilities and short term shocks such as illness or loss of employment.

118. **Access to new credit is widespread and not concentrated in particular sectors or firm sizes** (Figure 92). New loans to firms reflect the evolution of industry composition, with a relative decline of new credit to firms in the manufacturing industry and an increase to firms in the trade industry. Similarly, the share of credit to new firms incorporated within two years is fairly stable over time, around 20 percent corresponding to the share of new firms in the economy. Furthermore, for the period 2007-2012, around 83 percent of liabilities reside with small firms, 13 percent with medium firms, and the remainder with large firms, roughly corresponding to the overall composition by firm size.

Figure 91: Account ownership, Mauritius and other Sub-Saharan countries, 2011

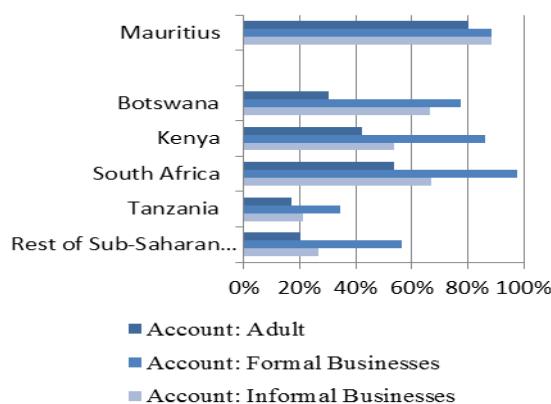
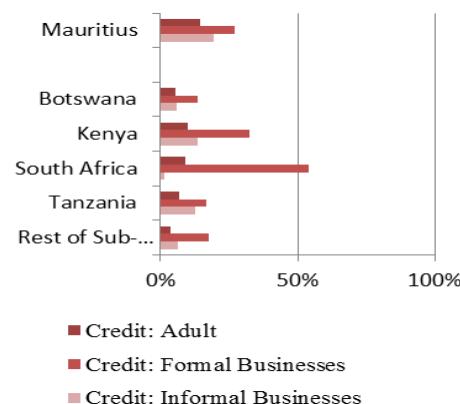


Figure 92: Access to credit, Mauritius and other Sub-Saharan countries, 2011



Source: World Bank Global Findex and World Bank staff calculations

3.5. Social protection system

Reasonable coverage and poverty reduction but fragmentation and untargeted programs dilute its impact

⁹⁶ This does compare favorably with 31 percent in the other MICs but below the average of 86 percent in high-income countries.

119. The social protection system in Mauritius is comprehensive and significant resources are allocated to it. Mauritius has a comprehensive social protection system made up of social assistance, pensions, and labor market programs.⁹⁷ Social protection expenditure accounted for 20 percent of total government expenditures and 5.5 percent of GDP in 2013 of which 1.7 percent of GDP is on contributory pensions and 3.8 percent of GDP is on social assistance.⁹⁸ The Basic Retirement Pension, a program that provides a universal non-contributory pension for persons above the age of 60 as well as other benefits including universal invalidity and survivor benefits, represents 81 percent of total social assistance spending, or 3 percent of GDP. Spending on Social Aid, the government's cornerstone poverty-focused program, accounts for a meager 0.35 percent of GDP.

120. Overall, Mauritius' social protection system makes an important contribution to inclusive growth.⁹⁹ In 2012, the social protection system in Mauritius covered 46 percent of the population counting direct beneficiaries and their household members. Contributory pensions provide coverage to 18.8 percent of the population while social assistance provides coverage to 40.5 percent of the population.¹⁰⁰ In the absence of existing pensions and social assistance schemes, poverty in Mauritius would be significantly higher both in terms of the poverty headcount and the inequality index.¹⁰¹ At the same time, the effectiveness of Mauritius social protection system has increased over time. Social protection programs that were associated with an 8.4 percentage point reduction in poverty in 2007 were associated with a 9.5 percentage reduction in 2012.

121. The social protection system is fragmented, leading to inefficiencies. Currently, there are around 39 social assistance programs in Mauritius, designed and implemented by multiple ministries, foundations, and special funds. This results in diseconomies of scale leading to gaps in monitoring and evaluation, oversight, coordination, accountability, and transparency. The government has already taken steps towards modernizing its social assistance system. First, it has established the Social Register of Mauritius (SRM) as the database for social assistance programs to include an increasing number of existing programs to improve targeting and monitoring and evaluation. Second, it has introduced more objective eligibility criteria in the identification of beneficiaries through the use of a proxy means test under the SRM. But while these are positive steps, they do not address the fragmentation of the system. Given the nature of their vulnerabilities, this especially penalizes those in the bottom 20 percent of the population, those most in need of improved access to social protection. These most vulnerable probably require a

⁹⁷ Pension programs include the National Pension Fund, National Savings Scheme, and Civil Service Pension Scheme. The Basic Retirement Pension, a non-contributory pension program, provides universal benefits to all elderly above retirement age. There is an array of social assistance programs, including multiple cash and in-kind programs (the largest and most expensive being the universal basic pension), active labor market programs, and social care services. The government's cornerstone targeted cash transfer program is Social Aid, which is provided to specific eligible groups of households considered to be needy. Social Aid is complemented by the National Empowerment Foundation (NEF) that implements a number of programs including training, entrepreneurial support, and job search assistance as well as an array of additional services targeted to poor households. The government has launched a youth employment program in 2012 and a new income support program in 2014.

⁹⁸ World Bank calculations based on 2013 data provided by the Mauritius Accountant General Office.

⁹⁹ Results of the analysis are based on the household survey 2012.

¹⁰⁰ Social insurance coverage does not include current contributors to the contributory schemes. Some beneficiaries benefit both from social insurance and social assistance.

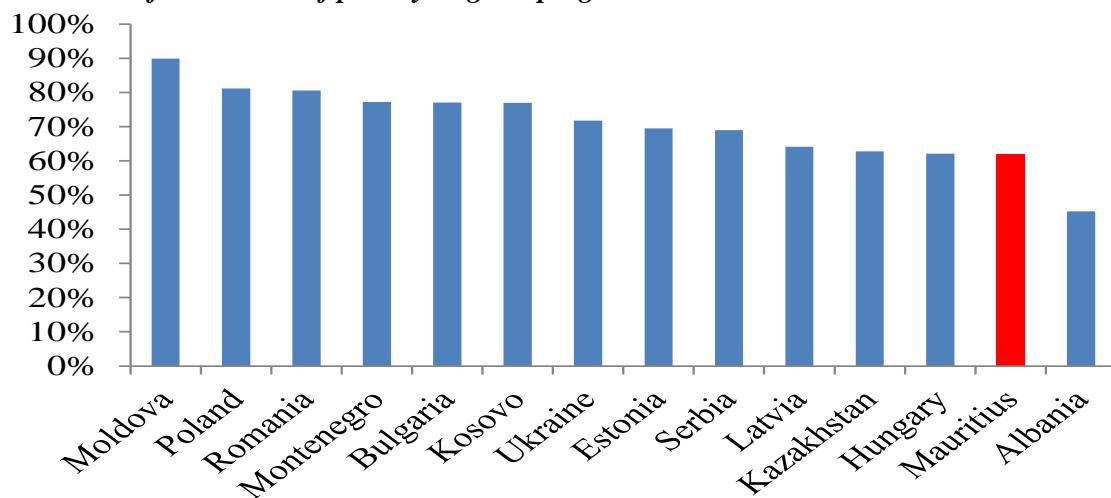
¹⁰¹ The poverty headcount would have increased to 16.4 percent from 6.9 percent, and the poverty gap would have likely quadrupled from the actual rate of 1.7 to 6.5. The income inequality measured by the Gini coefficient would also be higher, increasing from the actual level of 0.37 to 0.41.

more focused and customized approach under the social protection system as they are harder to serve relative to the rest of the population.

122. The Basic Retirement Pension is not efficient in reducing overall poverty. The basic retirement pension covers virtually the entire population above 60 years old, representing 34 percent of the population. It also provides relatively generous benefits, which reduces poverty from 11.1 percent to 6.9 percent. Yet, each rupee spent on BRP translates into only a 0.28 rupee reduction in the poverty gap as the program is not targeted, and recipients in the bottom decile receive only 7 percent of all BRP.¹⁰²

123. Social Aid is relatively efficient in reducing poverty but has limited resources. Social Aid performs well with about 62 percent of the program reaching the poorest 20 percent, though not yet at the level of efficiency of similar programs in other middle-income countries ([Figure 93](#)). Although each rupee spent on the program translates into a 0.66 reduction in poverty gap and Social Aid has reduced the poverty headcount from 7.3 percent to 6.9 percent, the program is limited because of its small size, covering only 3.8 percent of the population and just 15 percent of the poor. The beneficiary selection process also contributes to this limited impact as it excludes many who could be eligible based on means testing.¹⁰³ At the same time, people who are deemed eligible to graduate stay in the program for extended periods.¹⁰⁴

Figure 93: Benefit incidence of poverty targeted programs in selected middle income countries



Source: Europe and Central Asia Expenditure and Evaluation Database and Mauritius Household Survey Analysis

The need to modernize social protection to encourage ownership, graduation, and labor market participation

¹⁰² BRP accounts for 44 percent of per capita income of households in the poorest decile.

¹⁰³ The selection of beneficiaries in the Social Aid program is based on two types of targeting mechanisms, implemented in a two-step process. The first step is a categorical targeting: the program targets certain categories or groups that are deemed to be vulnerable, such as abandoned women, disabled children, or income earners affected by shocks (medical). The categorical targeting acts as a “filter” before applying the second targeting mechanism, which is a proxy means test.

¹⁰⁴ For example, 66 percent of beneficiaries who join Social Aid on the basis of loss of ability to work stay in the program for over 19 months. The same holds for 60 percent of participants that fall in the category of “abandoned women.”

124. There is a need for a comprehensive review of the social assistance system to promote labor market integration and avoid aid dependency. With a shrinking population, low labor market participation, and some programs potentially having a detrimental impact on the labor force, existing social assistance programs may need to become more efficient and responsive to labor market demand. This is particularly relevant for the second quintile of the population (the low middle class) that would benefit from an up-skilling effort to increase their employability and productivity. Also, social benefit programs, such as Social Aid, need to be proactive by linking beneficiaries who are out of the labor force to incentives and services to promote employability and employment opportunities. These efforts would well serve the bottom 20 percent of the population as they receive income support while getting additional help for gradual access to labor market opportunities.

125. Achieving these objectives would require the institutionalization of a multi-sector approach to ensure multi-dimensional support to the poor and vulnerable so as to help them move out of poverty and promote their social inclusion. This would require strengthened capacity of the institutions involved, including the National Empowerment Foundation, one of the main institutions in the social protection sector. At the same time the contribution of the private sector in social protection could be improved through a more integrated approach.¹⁰⁵ Recent government programs aimed at further modernizing its social assistance system and getting beyond passive cash handouts are positive steps but a unified vision is needed for the system to avoid adding to further fragmentation. Moving forward, the government could phase out Social Aid and replace it with the New Income Support Program focused on incentive compatibility, graduation, and activation. Also, setting up a monitoring and evaluation framework would be beneficial.

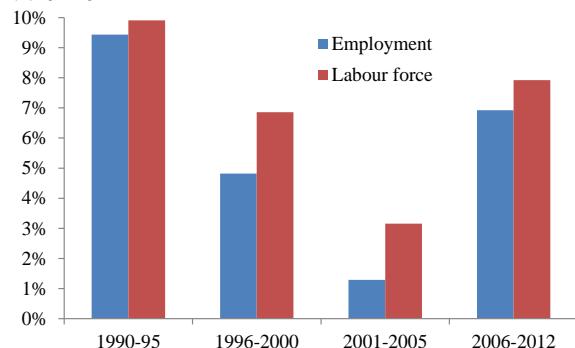
3.6. Labor markets and employment creation

Employment creation remains subpar

126. The labor market remains sluggish and is unable to create the level of employment that the country needs to work at full capacity. Since 1990, the economy has not been able to create enough employment to accommodate the increase in labor supply. As a result, overall unemployment remains stubbornly high at around 43,300 people or 7.7 percent of the labor force in 2012 ([Figure 94](#)). Also, the intensity of work has been declining over time and employees worked on average almost three hours less in 2012 than in 2001. The labor force is around 60 percent of the active population, below that of other peer countries ([Figure 95](#)). Many factors may contribute to this low labor force including the tendency of most workers to retire early and the tendency of students to stay in school longer. Furthermore, even if Mauritius had the average labor force of the upper middle-income countries, 67 percent, the economy would need to create an additional 80,000 jobs.

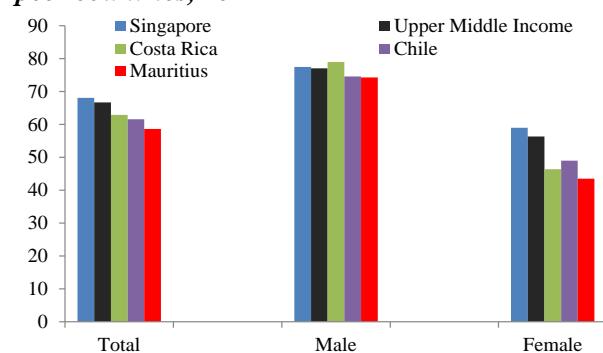
¹⁰⁵ The National Corporate Responsibility Program (CSR) was introduced in 2009 mandating companies to pay 2 percent of their profits towards social and environmental development programs. There are other initiatives that were introduced to support women, children and other vulnerable groups.

Figure 94: Employment and labor force growth, 1990-2012



Source: Statistics Mauritius

Figure 95: Labor force participation, Mauritius and peer countries, 2012



Source: WB indicators

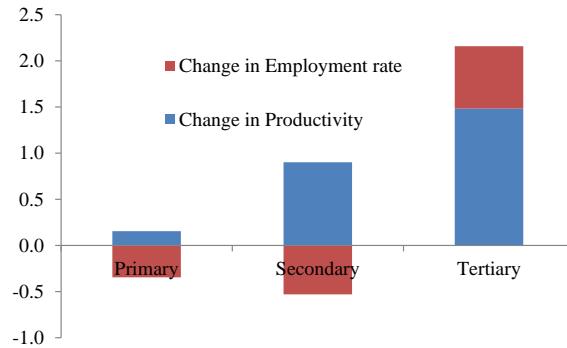
Sector composition is putting pressure on the creation of low-skilled employment

127. The shift to a service oriented economy has been accompanied by a commensurate increase in services employment. The services sector has been the biggest contributor to GDP, productivity, and employment growth during the last two decades (Figure 96). Services exports, especially, have increased with tourism, financial services, and ICT representing 61 percent of all export services. Overall, employment in services increased from 304,000 in 2008 to 340,700 in 2013 with the most rapid growth in employment in local activities such as trade, supported by expanded household consumption (Figure 97).

128. Sectors that require lower skills are declining, threatening the inclusiveness of growth. The agricultural sector has lost one third of its employment since 1990, mainly in sugarcane fields that employ laborers with limited skills. The 3,200 registered artisanal fishers in Mauritius, 44 percent of which are in Rodrigues, average earnings of just 22 percent of the average income per capita.¹⁰⁶ Opportunities for fishers are limited, as most of them have no other occupation, increasing their vulnerability to shocks. The manufacturing industry has increased its productivity considerably at the cost of shedding 20 percent of its employment since 1990, mostly in the textile sector and despite new sub-sectors such as food processing adding substantial new jobs. This trend is unlikely to be reversed given the restructuring of the economy and fierce international competition.

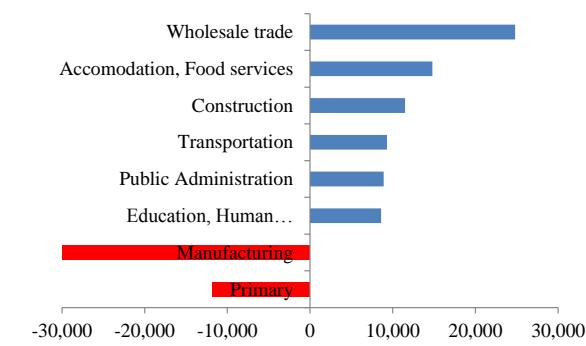
¹⁰⁶ In addition, several thousands of fishers are unregistered, including fishers on foot or gleaners who are among the most marginalized.

Figure 96: Annual growth in employment and productivity across sectors, 1990-2013



Source: Statistics Mauritius, WBI, Shapley decomposition

Figure 97: Employment creation per sector, 2002-2012



Source: Statistics Mauritius

129. **At the low end of the skills scale, there are still obstacles to finding employees for some firms, prompting many to utilize immigrant workers.** Filling certain low-skilled positions is constrained by many factors such as inadequacy of working conditions and high salary and career expectations as a result of working conditions in some of the main sectors of the economy such as tourism and ICT. Because companies cannot find adequately skilled labor at market conditions, a significant number of foreign workers are brought into the country. Almost half of manufacturing and ICT companies employ foreign workers, and 3 percent of total workers in the financial sector are foreign. The majority of work permits are issued in the “skilled worker” occupational category. Despite an increase of immigrant workers from 14,600 in 2000 to 24,000 in 2008, firm complaints related to the expensive and lengthy process for hiring foreign workers are common.

The labor market still has significant barriers for the inclusion of women and youth

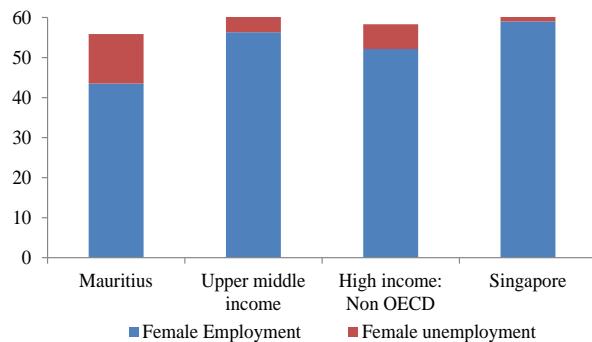
130. **Despite significant gains over the past decade, gender differences in the labor market remain high and are mainly associated with very low labor market participation.** The female labor force participation rate in 2012 was 47 percent, a slight improvement over 2001 (Figure 98 & Figure 99).¹⁰⁷ Despite an absence of legal barriers¹⁰⁸, half of Mauritian women of working age are still outside the labor market. Moreover, compared to men, women in 2012 are still 22 percent less likely to be employed, 6 percent more likely to be unemployed, and 25 percent more likely to be out of the labor market. The primary factors for the low female labor force participation are marriage and family size. A married woman has around a 40 percent higher probability of being out of the labor force than a married man and as family size increases so does her chance of being inactive. These probabilities do decrease with higher education levels and women with post-secondary education actually outperform. Part of the reason for these lower labor force participation may be inadequate supporting institutions in the form of child day care or assistance to take care of the elder members of the household.

¹⁰⁷ This compares to a higher average in upper middle-income countries of 56 percent or those of comparable countries like Botswana at 72 percent and Trinidad and Tobago at 53 percent.

¹⁰⁸ According to the Bank’s Women, Business, and the Law database, Mauritius’s legal code is fully equal and all laws are applied to women the same way to men, thus the laws do not hinder women’s participation in the economy.

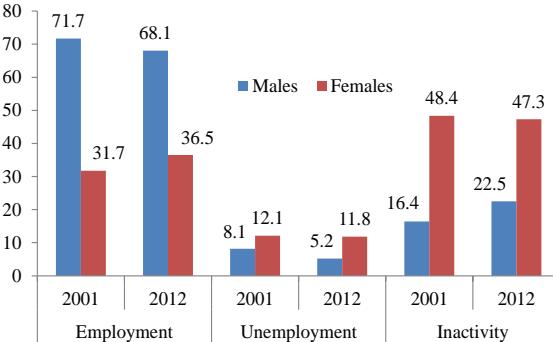
131. The gender wage gap is high and not diminishing, further undermining female labor market participation. While gaps in labor force status are on a downward trend, the gender wage gap in Mauritius is severe, shows no sign of decreasing, and has even worsened in recent years. Even when controlling for the same level of education, age, potential work experience, and sector, women still earn around 50 percent less than men. This severe gender wage gap further undermines incentives for female labor market participation, as they cannot fully reap the returns to their work. Furthermore, this persistent undervaluation of women's labor input might have a negative impact on female human capital accumulation and undermine the favorable secondary and tertiary education enrollment rates attained in recent years.

Figure 98: Female labor market comparison to other MICs (% of labor force)



Source: WDI

Figure 99: Male-Female labor market comparison, 2001 and 2012 (% of labor force)



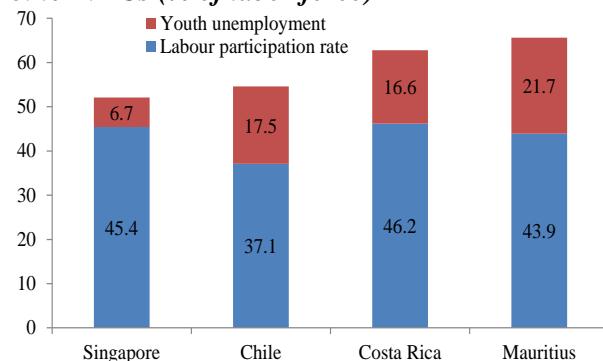
Source: Statistics Mauritius

132. Young people experience worse labor market outcomes than the rest of the population. Low youth market participation is largely due to the increasing number of those attending school. More than 50 percent inactive youth are enrolled in formal education or training compared to 35 percent a decade ago, resulting in the number of individuals in neither education, employment, nor training (NEET) decreasing considerably (Figure 100 & Figure 101).¹⁰⁹ Nonetheless, youth unemployment represents 40 percent of total unemployment, placing burdens on the family and the state, which needs to invest further in training and support programs for the youth. Furthermore, difficulties in school-to-work transition result in employment with lower earnings, higher unemployment, and inactivity.

133. While it is difficult to fully characterize the skill needs of the unemployed, a major challenge is related to undereducated and under-skilled young people. A high number of them (mainly poor and female) lack the relevant school certificate when leaving school, which increases the challenges of providing adequate vocational training in the absence of sufficient education. To address this issue, the government has introduced a Youth Employment Program to train the long-time unemployed and provide a subsidy to firms that hire first-time young job seekers. The government has recently introduced some programs that provide information on labor market to reduce information asymmetries but it is unclear what results have been achieved so far.

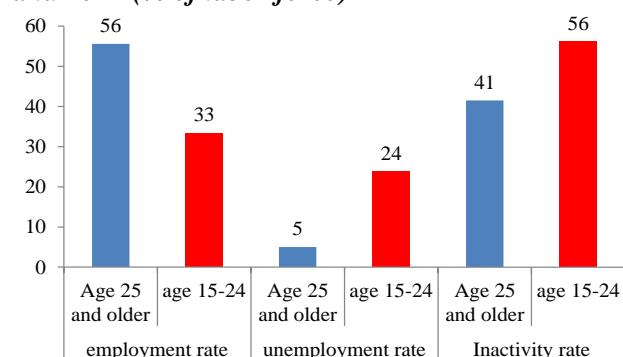
¹⁰⁹ Females especially have improved their standing as they have just a 3.9 percent higher chance than boys of being NEETs in 2012 compared to 10 percent greater chance in 2003. Parents' education and family income have the most influence in reducing the NEET category.

Figure 100: Youth labor market comparison to other MICs (% of labor force)



Source: WDI

Figure 101: Youth labor market comparison, 2001 and 2012 (% of labor force)



Source: Statistics Mauritius

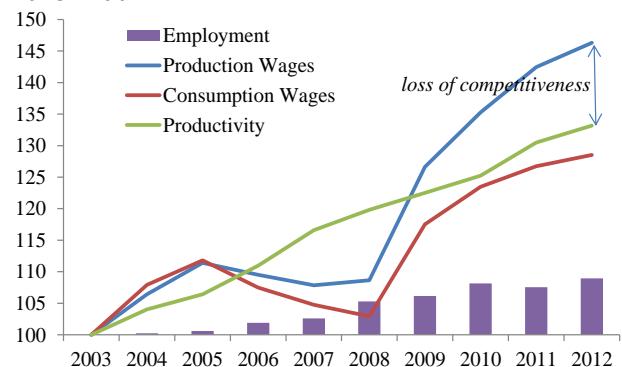
Wage settling mechanisms undermine employment creation

134. **Existing labor regulations undermine efforts to maintain wage increases in line with productivity gains, resulting in challenges to employment creation.** Several wage-setting mechanisms have had a significant impact on the increase in unit labor costs¹¹⁰ (Figure 102 & Figure 103). Workers are compensated yearly for increased cost of living without due consideration to other factors such as productivity gains. Also, around 80 percent of workers in the private sector get their conditions of employment set by Remuneration Orders (ROs) adopted by the National Remuneration Board, which leaves limited scope for collective bargaining. Furthermore, gains achieved in certain sectors spillover to other sectors, re-aligning salary levels across sectors without full consideration of industry specifics. Finally, public sector salaries fixed by the Pay Research Bureau put substantial inflationary pressures on the price of labor.¹¹¹

¹¹⁰ Between 2008 and 2012, the annual increase of unit labor cost in manufacturing, in dollar terms, was 5.8 percent for Mauritius compared to 1.4 in advanced economies. Mauritius Commercial Bank occasional paper number 55 “Mauritius Inc. – The Challenge of Investing in Growth”, October 2013.

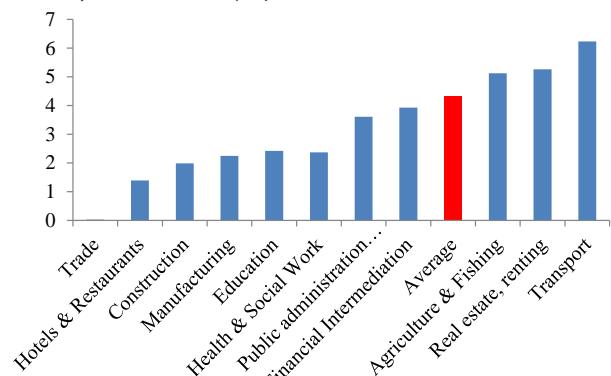
¹¹¹ The measure of wages is not exhaustive and does not include all forms of labor income paid by the employer such as contributions to social security, private pension plans, health benefits or free transport.

Figure 102: Accumulated growth wages productivity and employment, 2003-2012, 2013=100



Source: Statistics Mauritius

Figure 103: Real wages annual growth per sector, 2003-2012 (%)



Source: Statistics Mauritius

Table 2: Main challenges identified for improving equity in public service delivery: ensuring employment opportunities for all

Issue	Impact on twin goals
<i>Labor market institutions</i>	Labor market institutions are raising certain sector wages above labor productivity, undermining competitiveness and the potential for employment creation. Also, these institutions generate severe gender discrimination that hampers the inclusiveness of economic growth.
<i>Inequality of education outcomes and insufficient quality of education</i>	The quality of education is not on par with the country's aspirations and outcomes are very unequal, with a large part of the population failing to acquire the minimum education requirements to be truly productive. As a result, human capital is too low, undermining competitiveness and economic diversification and ingraining intergenerational inequality and poverty.
<i>Growing non-communicable diseases</i>	The health system is burdened by high rates of non-communicable diseases that, combined with aging population, will put intense pressure on the system.
<i>Inefficiency of the social protection system</i>	Fragmentation in the social protection system undermines its efficiency and the capacity to relieve entrenched poverty in Mauritius. Furthermore, uncoordinated and untargeted programs do not always adequately cover the more vulnerable.

Chapter 4. Sustaining Progress

Main messages – Chapter 4

- *Mauritius is very vulnerable to natural hazards and climate change will further exacerbate this situation.*
- *Environmental sustainability will require improved information, preparedness and, in some areas, strengthened regional cooperation.*
- *Sustainability in the provision of infrastructure services calls for improved planning to expand energy provision, substantial reforms in the water sector, and coping with road congestion through better demand management and public transportation.*
- *The government needs to contain the public deficit and public debt to create the fiscal space needed to finance growing human and infrastructure capital needs and rebuild fiscal buffers to cope with large external and natural vulnerabilities.*
- *Furthermore, a quickly aging population will put additional pressure on public spending through growing pension and health expenditures.*
- *Public sector management practices are behind other upper middle income countries and need to improve to raise accountability and the quality of services rendered.*

135. While the trajectory in terms of growth over the last decade has been broadly positive, Mauritius has been less successful in regards to shared prosperity. Significant policy and institutional reforms are necessary to ensure that its economic status is sustained. Mauritius is a small island state with significant economic vulnerabilities, most notably natural hazards and exposure to international markets. This section will look at sustainability in a broad sense including the capacity of the Mauritian economy to achieve high-income status and improve shared prosperity. It will discuss key aspects of sustainability for Mauritius including: (i) natural hazards and climate change risks to Mauritius; (ii) unsustainable infrastructure policies; (iii) macroeconomic policies to achieve high-income status; and (iv) the capacity of the public sector to deliver the public services required.

4.1. Natural Hazards and Climate Change

Climate change effects will exacerbate the country's vulnerability to natural hazards

136. **Mauritius is very vulnerable to geophysical hazards and climate change will only exacerbate this status (Box 10).** The country is among the top 10 percent of countries most exposed to natural disasters. Projections suggest that average global temperatures could rise by 1-2 degrees Celsius by 2060, with water resources decreasing by 13 percent by 2050. As a result, the range and intensity of natural hazards will increase over time. A large part of the population and productive assets in Mauritius are exposed to multiple risks, and flooding risk is continuously increasing, especially in built up areas due to inappropriate drainage infrastructure as well as people living in the coastal areas. Since most disadvantaged Mauritians live in coastal areas, a careful assessment should be done on the increased vulnerability of poor people settled in flood-prone areas. Recent events¹¹² confirm the importance of strengthening the country's resilience in order to ensure progress with poverty reduction and shared prosperity.

¹¹² For instance, the flood event of 30 March 2013 in Port-Louis, and Cyclone Bansi in January 2015.

137. **Natural hazards may significantly impact Mauritius's economic growth.** Agriculture, tourism, and water are likely to be the most affected sectors ([Table 3](#)), while services sectors other than tourism may be less severely impacted. With regards to agriculture, if rainfall decreases by 10 to 20 percent and temperatures increase by 2°C, then sugar cane yield could be reduced between 34 and 48 percent.¹¹³ Furthermore, growing temperatures will favor vegetative growth at the expense of sugar accumulation. The tourism sector will be affected by rising sea surface temperatures, and changes in ocean chemistry will negatively impact the health of coral reef systems. These systems, a natural protective barrier for the coastal zones, are essential to the island's fisheries and biodiversity, and a major tourist attraction themselves. Increased severe cyclones could further disrupt the economy and stretch government finances.

Table 3: Sectors most impacted by natural hazards and climate change

Natural Hazards	Agriculture		Water		Tourism	
	Historical/ Current	Future	Historical/ Current	Future	Historical/ Current	Future
Extreme Temperature	Yellow	Red	Yellow	Red	Yellow	Yellow
Extreme Precipitation and Flooding	Yellow	Orange	Yellow	Red	Orange	Red
Drought	Yellow	Orange	Yellow	Red	Yellow	Orange
Sea Level Rise	Orange	Red	Yellow	Red	Orange	Red
Storm Surge	Orange	Orange	Yellow	Orange	Orange	Orange
Strong Winds	Orange	Orange	Yellow	Orange	Orange	Orange
Landslide	Yellow	White	Yellow	White	Yellow	White
Preliminary Sector Impact	Orange	Red	Orange	Red	Orange	Red
Overall Sector Risk	Red		Red		Red	
*Legend	Low Potential Impact		Moderate Potential Impact		High Potential Impact	

138. **The government is working toward setting up a disaster management system to mitigate natural risks and better manage their impact.** The Mauritian government has a sound awareness of climate and natural hazards and the country has coped well in the past with the financial burden of disasters. Enforcement data and environmental data such as hydro-meteorological and pollution levels, are readily available and collected on a regular basis. Mauritius has prepared a climate change adaptation strategy and is in the process of preparing a climate change bill. In addition, flood risk management and law enforcement exist but these efforts are barely keeping pace with the rapid speed of development and changes in land use, both of which are increasing surface run-off and testing drainage capacity. The government expressed its commitment to strengthen its disaster risk management capacity by establishing the National Disaster Risk Reduction and Management Centre in 2013.

139. **Mauritius's readiness to climate and geophysical hazards can be further improved.** Substantial achievements implementing adaptation measures have been attained but with limitations in key aspects, such as financial resources and operational capacities. Mauritius could benefit from the establishment of disaster risk management policies and their respective instruments in the areas of risk reduction (prevention, planning, and design), preparedness (early

¹¹³ Second National Communication of the Republic of Mauritius under the United Nations Framework Convention on Climate Change (UNFCCC). November 2010. <http://unfccc.int/resource/docs/natc/musnc2.pdf>.

warning systems), risk financing and recovery and reconstruction. Potential risk scenarios seldom take into account climate change projections. Also, vulnerability and impact assessments are not comprehensive or substantial, and there is no national multi-hazard risk assessment with a common methodology designed to inform planning and development decisions. While Environmental Impact Assessment (EIA) recommendations are monitored and enforced, there are insufficient officials for post-monitoring the more than 1,000 Preliminary Environmental Reports (PERs) and EIAs issued.

Box 10: Mauritius – Climate change and increasing natural hazards

Extreme temperatures will increase. The mean annual temperature has increased by 0.6°C from 1960 to 2006, most rapidly in the first quarter of the year (0.16°C per decade). Temperature is projected to increase by 1 to 2°C by the 2060s, and 1.1 to 3.4°C by the 2090s, with more ‘hot’ days and less ‘cold’ days than in the current climate.

Extreme precipitation and flooding will likely increase. Whilst there is no evident trend in annual rainfall, rainfall in the last quarter of the year has declined over the period 1960 – 2006 by 9 percent per decade. While flooding projections are difficult because of severe, periodic variations in global weather conditions (e.g. warming of the southern Pacific Ocean or El Niño), rainfall during the third quarter of the year tends toward a decrease of 6 to 10 percent by the 2090s. Intense rainfall events could particularly affect key economic areas, cause inundation of cultivated areas and losses in vegetable production, which could lead to abandonment of cultivable areas, further soil erosion, and the leaching of nutrients.

Mauritius is not directly threatened by desertification but droughts are increasing. The country’s worst droughts have occurred relatively recently, in 1999 and 2011. The former notably led to a drastic 44 percent fall in the contribution of sugarcane to Mauritius’ economy. Deforestation also remains a concern, as it could bring about the silting of rivers and lagoons. This would have detrimental effects on the flora, the fauna, as well as the soil quality.

Acceleration in sea level rise has been noticed. Sea level rise has increased around 3.8 mm/year between 1998 and 2007 and could rise by a 0.13-0.56 mm/year range by the 2090s compared to 1980-1999 sea levels. Beach erosion has also become a concern, with loss in beach area of about 18,500 m² over the last two decades, and coral bleaching has also occurred.

The frequency and strength of storms have increased significantly. The frequency of storms of tropical cyclone strength or higher has increased significantly over the past three decades, with an increasing trend in the number of storms reaching tropical cyclone strength (winds above 165 km/h). Also, research suggests that the number of intense cyclones (wind gusts of up to 299 Km/h) will be increasing at the expense of weaker cyclones.

Mauritius and Rodrigues are experiencing an increasing number of sites with landslide occurrences. While in the late nineties there was only one dangerous site in Mauritius requiring strict precautionary measures, by 2005 this number had risen to 22. With more frequent events of torrential rain, some of these zones may even need to be evacuated. A similar situation is gradually developing in Rodrigues in which small landslide occurrences are likely to grow in severity in the future.

Concerted domestic and regional initiatives are required for adequate management of the fishing stock needed to sustain the ocean economy

140. Effective fisheries management at the local, national, and regional levels is critical to ensure the sustainability of the resource. There are increasing indications that artisanal fisheries including lagoon and off-reef are fully exploited in Mauritius and Rodrigues. Although Mauritius has a vast exclusive economic zone (EEZ), domestic fish production of 9,000 tons per year is not sufficient to cover domestic fish consumption of 30,000 tons or its export-oriented processing industry of 169,000 tons. The country is greatly dependent on fish imports from the region's waters to supply its industrial sector, which calls for greater attention to intra-regional dialogue. Mauritius recently developed a Fisheries Master Plan and updated the ecosystem-based management plan for the fisheries banks.

141. Increasing threats to the lagoon and near-shore marine environment call for more integrated coastal zones management. The sustainability of the resource is jeopardized by a lack of attention to fisheries management and preservation of the coastal environment. Lagoons, reefs, and off-reef ecosystems are under threat from aggravated overfishing, land-based pollution, sedimentation disturbances, and unsustainable tourism installations and practices. Recent efforts in implementing integrated coastal zone management in Mauritius are currently insufficient to reduce depreciation of one of the country's main natural assets. An ocean economy of the sort which Mauritius is pursuing needs to be comprehensive and addressing all aspects of sustainable development – environmental, economic and social – is critical.

KNOWLEDGE GAPS:

Statistics and economic valuation

Statistical and economic data collection remains limited, is not achievable for entire value chains, and suffers from inconsistency among the various sources. Key statistical and analytical methodologies should be defined and implemented to support fisheries, aquaculture management, and development planning. The regional dimension of the sector and potential economy of scale call for a regional approach; for this the development of a national fisheries information system and dashboard need to be integrated with regional systems.

Viable aquaculture models

To support sector development, it is necessary to identify key constraints and comparative advantages, and to develop sound socio-economic and environmental aquaculture models.

Efforts are underway to ensure environmental sustainability but there is limited information to track progress

142. Available information data indicate a worsening depletion of wealth per capita over the past 10 years. WDI data indicates that wealth per capita has been declining since 2005 ([Figure 104](#)). The currently available data suggest this wealth depletion is caused by a change in population growth and the depreciation of infrastructure, the latter increasing from 12 percent of

GDP in 1995 to 14 percent in 2010, and not just by depletion of natural capital and environmental resources ([Figure 105](#)). Improved information will be critical to implement Mauritius environmental sustainability agenda (Box 11).

Box 11: Mauritius: Embracing sustainable development on land and at sea

In response to the global energy crisis in 2007, the Government of Mauritius became conscious of the importance of promoting renewable energy and sustainable development for the wellbeing of its citizens. In 2008, the *Maurice Ile Durable* (MID) concept was launched as a new long-term vision for making Mauritius a sustainable island. This was supported with the MID fund with an initial budget of MUR 1.3 billion to increase renewables to 35 percent by 2025. Under the MID fund, the government has already provided grants and soft loans to 25,000 households for purchasing solar thermal systems, and 650,000 energy saving lamps have been sold at a subsidized rate. Also road lighting is being replaced by energy efficient systems; a grid code and a feed-in-tariff were developed in 2009 for small solar, wind and hydro power systems; and small independent power producers were given the opportunity to produce their own electricity from renewable energy sources and export any excess to the CEB grid. In 2013, a new strategy was adopted—the “Ocean Economy”—to harness the full potential of the ocean and ensure a comprehensive approach in handling this new frontier of the economy—one which embeds growth, inclusiveness, sustainability, and resilience.

Mauritius is among the largest marine territories in the world with a total economic zone of 2.3 million square km, including an Exclusive Economic Zone (EEZ) of 1.9 million square km and a co-managed economic zone with Seychelles of 0.4 million square kilometers. For many years, Mauritius has been benefiting from the “ocean economy” with substantial ocean-related economic activities mainly around fishing, farming, desalination, maritime transport, ship building, ports, and coastal activities including hotels, restaurants, sporting, public services, and research centers. Altogether, it is estimated that the various sectors of the ocean-related activities contributed around 10.8 percent of GDP in 2012, with hotels and leisure activities making up some 60 per cent of that total.

In December 2013, a High-Level National Task Force on the Ocean Economy was formed and a roadmap was published. The roadmap articulates ten key objectives that seek to promote the Ocean Economy over the next decade. In the short term, it seeks to develop Mauritius into a major regional hub for petroleum products, specifically container transshipment and port services and to promote Mauritius’ seafood processing hub, along with aquaculture, to play even a more prominent role in export diversification and consolidation of food security. The roadmap also gives a new impetus to tourism and ocean-based leisure, with a bigger focus on cruise tourism and sea sport. By 2020, the country will promote the ocean as a major share of renewable energy sources, harboring a regional platform for marine finance, ICT and ship registration, and by prospecting the zones with the highest likelihood for hydrocarbon and mineral resources. By 2015, the goal is that direct contribution of the Ocean Economy to GDP should reach approximately 20 percent (excluding eventual discovery of hydrocarbons). Mauritius should become a center of excellence for ocean knowledge, both as a support industry and as an industry in its own right, with continuous mapping and stock taking of its living and non-living resources for an ecologically clean and safe ocean

Figure 104: Change in wealth per capita, 1995 - 2010

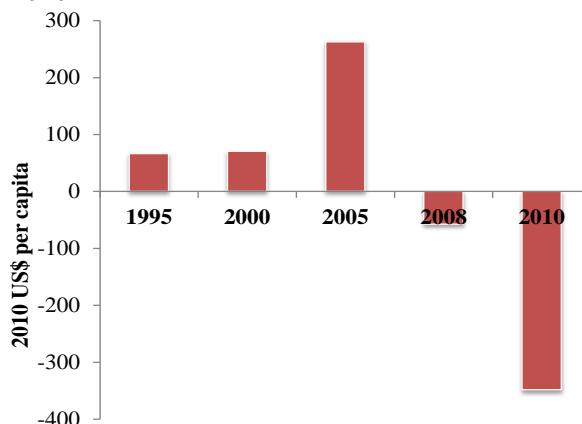
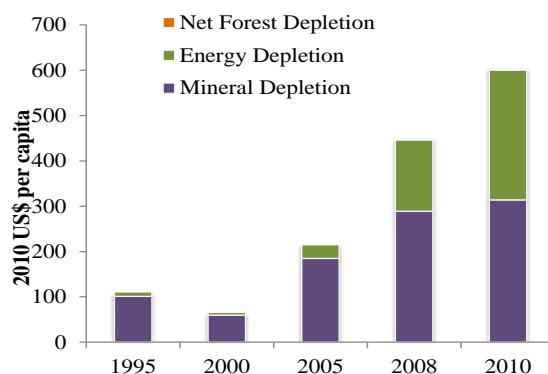


Figure 105: Natural capital depletion per capita, 1995 – 2010



Source: Change in Wealth per Capita Database, World Bank, Version 1.0, March 19, 2014

KNOWLEDGE GAPS: Natural wealth accounting

While Mauritius has demonstrated a strong commitment to developing natural wealth accounts, considerable work is still needed to fully incorporate all forms of wealth. So far, the parameters used to calculate natural capital depletion are limited, as they do not include coastal erosion, fisheries, or marine resources, which are key to Mauritius and might also be drivers of wealth depletion.

4.2. Unsustainable Infrastructure policies

Mauritius has sufficient fresh water resources but inadequate policies may critically affect service provision and the sustainability of the water system

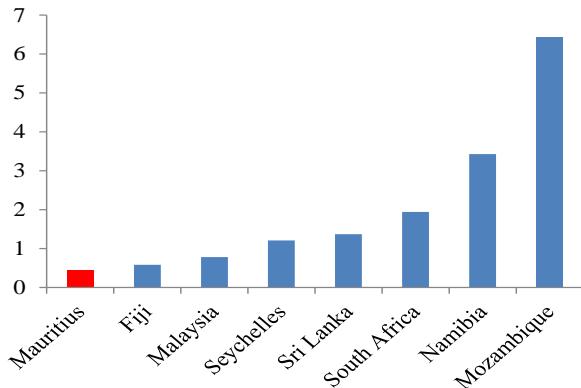
143. **Water service providers are struggling to recover costs and operational inefficiencies are affecting the sustainability of service delivery (Figure 106).** Key sector performance indicators demonstrate that Mauritian service providers are struggling with increased urbanization¹¹⁴ and all three service providers (CWA, WMA and IA) are failing to collect enough revenue to meet operating costs and new investment, impeding their viability. The existing tariff structure distorts cost perceptions and is overly complex, with a high degree of cross subsidization.¹¹⁵ Operational inefficiencies include inadequate asset management and maintenance, poor distribution pressure control, deficient planning, inadequate billing and collection, and poor customer services and response. As a result, non-revenue water comprises 55 percent of the total, of which technical losses are 31 percent and commercial losses, 24 percent

¹¹⁴ IBNET Apgar score assesses the health of water utilities / service providers based on six indicators, which provide insight into the utility's operational, financial, and social performance. The criteria are (i) water supply coverage, (ii) sewerage coverage, (iii) non-revenue water, (iv) collection period, (vi) operating cost coverage ratio, and (vi) affordability of water and wastewater services. Mauritius's score is placed within the low range, less than the average for lower middle-income countries. (IBNET Blue Book, 2014).

¹¹⁵ Despite a significant adjustment in 2012, the price of water has been kept artificially low, with the average cost of water estimated to be around MUR 7.16 per cubic meter. (Mauritius Water Sector Reform, Strategic Plan, July, 2012).

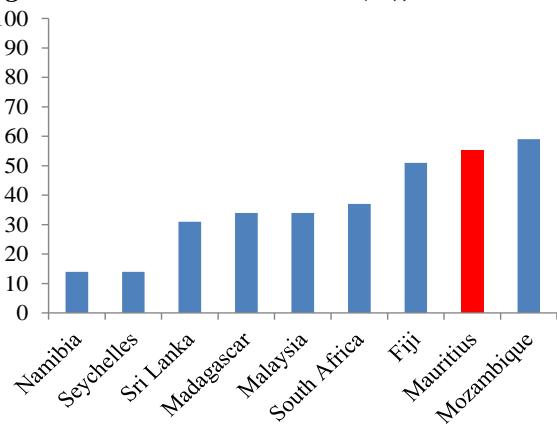
(Figure 107). The performance of the wastewater treatment plants has also been variable, with a number of the systems overloaded and in need of upgrades.¹¹⁶

Figure 106: Water revenues/service population/GNI (% GNI per capita), 2006



Source: IBNET Blue Book 2014

Figure 107: Nonrevenue water (%), 2014



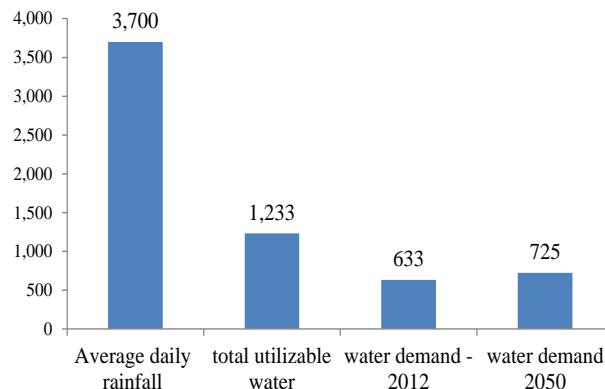
Source: IBNET Blue Book 2014

144. In coming years the water system will be under additional pressure, a situation that calls for immediate reforms. The sustainability of water services is critical for Mauritius, considering its high dependency on rainfall (Figure 108), competing demands,¹¹⁷ potential impacts of climate change, and the government's economic, social and environmental development objectives. The current operating models offer little or no incentives to increase the performance of the system, which suffers from a number of inherent institutional capacity constraints. As a result, the water system is increasingly vulnerable to external shocks, including prolonged droughts and economic downturns, both of which have recently affected continuity of supply and investment programs.

¹¹⁶ Mauritius Water Sector Reform, Strategic Plan, July, 2012.

¹¹⁷ The main user groups are: (i) potable water supply for domestic, commercial, industry uses etc. (around 37 percent of total), (ii) hydropower production (around 36 percent); and (iii) irrigated agriculture (around 26 percent). (Mauritius Water Sector Reform, Strategic Plan, July, 2012).

Figure 108: Rainfall and water use (Mm3), 2012



Source: Mauritius Water Sector Reform, Strategic Plan, July 2012

145. An integrated management approach is required to balance competing demands from irrigated agriculture, hydropower generation, and potable supplies, while maintaining environmental flows necessary for the protection of aquatic habitats and coastal environments and for recharging the groundwater aquifers. There is an urgent need to embark upon a reform process that leads toward a performance-based organization that enables operational efficiency for improved service delivery. Improving the technical performance and financial viability of service providers will enable further investments to enhance water security and reduce the impact of external shocks likely to be accompanied by climate change. In this regard, the government will need to accelerate reforms adopted in the 2014 National Water Policy to restore sustainability to the water system.¹¹⁸

Limited installed capacity in the energy sector requires quick investment in electricity generation and renewable resources

146. Energy generation and installed capacity has grown slowly. Installed capacity has expanded by 1.7 percent between 2005 and 2011 while peak demand increased at an average rate of 2.7 percent over the same period. As a result, operational capacity over installed capacity is among the lowest when compared to other small islands (Figure 109). Furthermore, electricity generation over 2005-2011 shows a decline in the share of renewable energy, with an increase in the share of coal by 10 percent (Figure 110). A recent report from the African Development Bank (AfDB) points out that in 2013 the Peak Load was 446 MW with overall installed capacity at 489 MW. The existing reserve of 43 MW may be too small as demand grows and repairs of power plants are scheduled. While this slow expansion could be justified by the low load factors of most thermal stations, new generation projects will be required, as forecasts indicate that energy demand is likely to increase by approximately 60 percent over the next 10 years.

¹¹⁸ The National Water Policy published in July, 2014 establishes national water priorities and outlines improved sector governance. Notable developments from this policy include: (1) reform institutional arrangements to separate planning / oversight, regulation and service provision functions; (2) integrate water supply, wastewater management and irrigation sub-sectors – including the consolidation to a single service provider; (3) prioritize water use allocation and rationalize uncontrolled water rights / allocations granted during the colonial era; (4) establish objectives to improve financial and technical performance of the water service providers, including reduction of non-water revenues to 20 percent by 2040; (5) establish objectives and mechanisms for the protection, conservation, and enhancement of water resources and the overall aquatic environment; and (6) introduce potential areas for PPP in the water sector.

Figure 109: Kw/hab. installed capacity in Mauritius and peer island countries, 2008

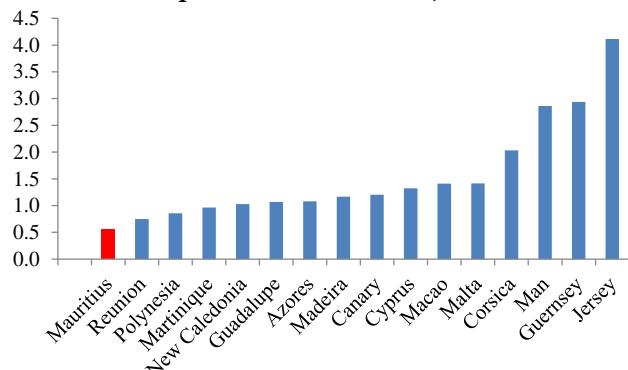
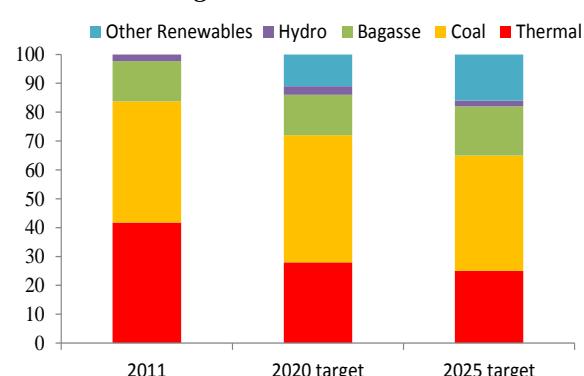


Figure 110: Electricity production per source in 2011 and targets



Source: A benchmarking study of island electricity companies: The case of the CEB in Mauritius, 2012 and Long-term Energy strategy 2009-2025

147. The energy sector remains vulnerable, given the country's dependence on imported fossil fuels¹¹⁹ and rigid existing tariff system. CEB produces around 40 percent of the country's electricity and Independent Power Producers (IPPs) generate the remaining 60 percent. CEB performs well with satisfactory system losses, growing total factor productivity and adequate staffing. CEB can cover its operating expenses with the sale of electricity but faces fuel costs beyond its control and increased reliance on IPPs using bagasse and imported coal. As a consequence, CEB's finances are unstable and highly conditional upon the proper pass-through of retail tariffs of volatile generation cost. Despite recent increases, some tariff categories do not cover generation costs. In addition, the tariff regime is not formally defined, further raising the risks of underinvestment and inadequate maintenance.

148. There is room for the growth of renewable energy in the medium term, contingent on improved policy and planning capacity. Renewable energy represented 20.7 percent of total electricity generation in 2012 compared to 27.6 percent in 2002. In 2008, the Maurice Ile Durable (MID) fund was set up with an initial budget of MUR 1.3 billion with the aim of turning the island into a sustainable development model.¹²⁰ Under the MID fund, the government has already made several steps to promote renewable energy. The investments required to meet electricity needs and accommodate an increased share of renewables, however, could be hindered by existing institutional uncertainty and the lack of transparency in the investment environment. In fact, recent renewable energy projects have been affected by concerns about the transparency of the contract awards, long negotiations, and fragmented discussions with various government agencies, which resulted in long delays, mounting project costs, and a loss of credibility for the government and the country. Strengthening the planning and implementation of its outcomes is critical for the development of the sector; likewise it is important to apply cost-reflective tariffs and maintain them periodically through indexation cost-adjustment mechanisms.

¹¹⁹ The total installed electricity capacity in the Mauritius and Rodrigues is around 489 MW and the total annual energy production is 2,300 GWh. Around 79 percent of electricity generation is from diesel and heavy fuel oil, kerosene and coal, with the rest of the energy mix provided by hydro and bagasse made from sugar cane. In addition, there are some small wind farms in Rodrigues Island and other projects under preparation.

¹²⁰ The fund aims to increase renewables to 35 percent by 2025 including 10 percent from variable renewables (wind and solar), and reduce energy consumption by 10 percent in non-residential and public sector buildings by 2020.

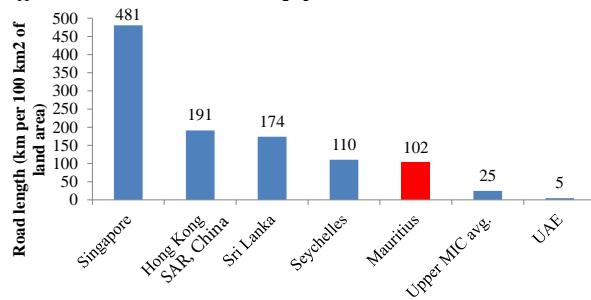
Increased exposure to natural hazards poses a serious threat to urban infrastructure settlements and the livelihood of their inhabitants

149. Urban environmental issues are currently being taken up with the Ministry of Housing and Land, with limited responsibilities given to municipal councils. Ad-hoc committees are formed only when environmental issues arise. To meet current challenges it is necessary to (i) strengthen leadership capacities and institutional frameworks so as to manage natural disasters and climate change risks and opportunities in an integrated manner at the local level, (ii) mainstream a certain number of environmental issues (solid waste management, global climate change, pollution, etc.) in municipal policies and domesticate these issues at the municipal level, and (iii) encourage inclusive participation of stakeholders and inhabitants to enforce policies.

While road investments have kept pace with demand to date, rapidly growing congestion threatens the sustainability of the road network.

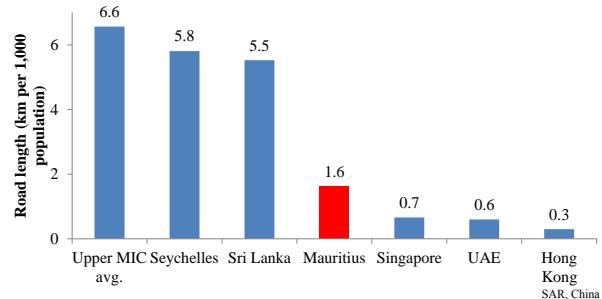
150. **There has been a substantial increase in the road network.** Mauritius has been investing considerable sums in developing its road network to the tune of 6.6 percent of the total public budget in 2013.¹²¹ The country possesses about 2,000 km of roads with a density of 102 km per 100 km² of land area, well above the African average of 15 km per 100 km² (Figure 111). On a per capita basis, Mauritius has already surpassed many higher income countries in part because more advanced economies often focus more on developing efficient and compact cities, resulting in lower road density per capita (Figure 112).

Figure 111: Road density per land area



Source: WDI

Figure 112: Road density per capita



Source: WDI

151. **Much of the network was not designed to carry the current traffic volume and load.** The majority of the existing paved network reflects a gradual improvement over older roads which were often based on old sugar cane tracks.¹²² Where expansion and upgrading of the road network has taken place, it has been undertaken employing a mix of design standards and specifications, which often do not include considerations of disaster risks. The result is a lack of uniformity in standards across the network, occasionally resulting in different standards on adjacent sections of the same category road.

152. **The emphasis on developing the network has not been matched by a similar emphasis on maintenance.** Maintenance of roads is done annually through contracts, or directly by the

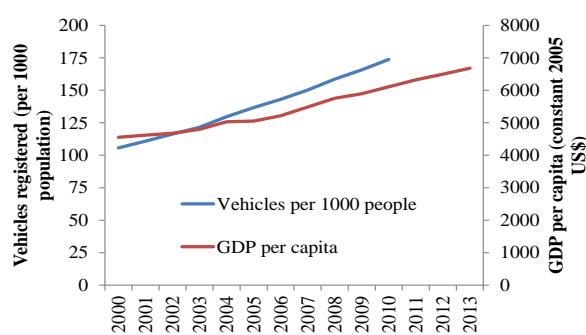
¹²¹ World Bank (2013). "Mauritius Policy Notes: Building Analytical Capacity to Raise Public Sector Efficiency."

¹²² For instance, inadequate width on major roads, poor geometry, understrength pavement, poor drainage in built up areas, and insufficient footways and parking space in business and commercial zones.

Road Development Authority (RDA) on a weekly basis. However, there is an imbalance between capital and recurrent expenditure in the sector¹²³ and Mauritius spends about 0.3 percent of GDP on maintenance compared to the Sub-Saharan average of 0.6 percent.¹²⁴ Limited maintenance results in an increased rate of network deterioration, raising costs for road users and creating a contingent liability of future rehabilitation costs.

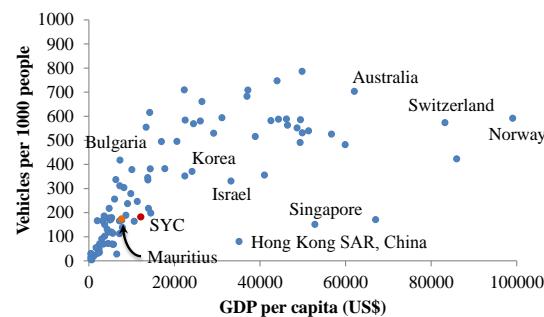
153. The country's development has increased the demand for transport, particularly for private vehicles. Since 1988, the number of cars and dual-purpose vehicles has grown steadily at approximately 7 percent per year, reaching 421,926 vehicles at the end of 2012. Mauritian motorization has already reached 180 vehicles per 1,000 people,¹²⁵ similar to or above more advanced countries, such as Singapore and Hong Kong SAR, China, (Figure 113). This equates to approximately 193 vehicles per kilometer of road despite a level of car ownership at 114 per 1000 head of population, well below countries such as the United Kingdom and the Netherlands. Based on global experience, Mauritius is at a turning point in its transport development path as motorization normally accelerates above US\$5,000 of GDP per capita (Figure 114). Resource-poor and space-constrained, Mauritius will need to follow an efficient and greener development path in the transport sector (Figure 114).

Figure 113: Mauritius: vehicles and GDP per capita



Source: WDI

Figure 114: Motorization and income growth



Source: Kopp et al. (2013)¹²⁶

154. Road congestion is already significant on several main corridors. This is particularly the case in the Port Louis-Curepipe corridor, which includes the 50 most travelled origin and destination routes for both morning and afternoon peaks. A recent study¹²⁷ indicates that without proper infrastructure and institutional measures, travel time in the most congested areas will

¹²³ Over the period 2010-2012, the RDA has been spending approximately MUR 155 million per annum (US\$5.3 million equivalent) on routine maintenance, and MUR 846.1 million per annum (US\$29 million equivalent) on scheduled periodic upgrading work on the entire primary network. These sums exclude investment in new roads, which amounted to MUR 1,161 million per annum (US\$40 million equivalent) over the same period.

¹²⁴ This translates into US\$17,500 per kilometer on maintenance of existing roads, which is low when compared to routine and periodic maintenance costs of US\$2,500 to US\$50,000 per km in Africa. World Bank (2010). "Africa's Infrastructure: A Time for Transformation."

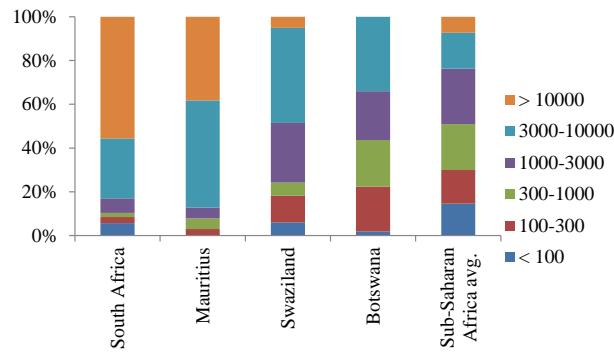
¹²⁵ There is a discrepancy in the number of vehicles registered between WDI and the national data. According to Statistics Mauritius, the figure is even higher at 320 vehicles per 1,000 population. For consistency purposes, the current report uses WDI data.

¹²⁶ Kopp et al. (2013). "Turning the Right Corner: Ensuring Development through a Low-Carbon Transport Sector" The World Bank.

¹²⁷ RDA, Mauritius. (2009). "Feasibility Study: Mauritius Road Decongestion Program."

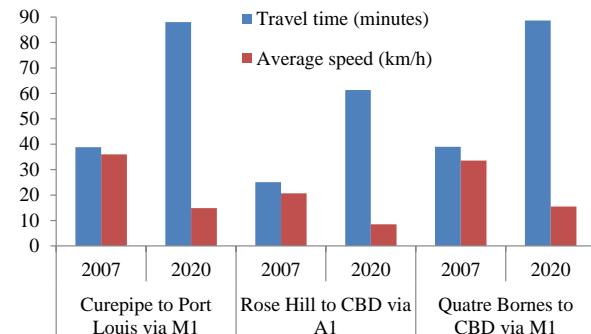
worsen significantly by 2020 (Figure 115). Traffic volume will increase 20 percent, travel time will double and average speed will be halved (Figure 116). Road congestion also has a significant economic cost with congestion during peak hours along the Curepipe-Port Louis corridor (M1) estimated at between 0.002 and 0.05 percent of GDP.

Figure 115: Distribution of road network by annual average daily traffic



Source: Gwilliam (2011)

Figure 116: Morning peak traffic conditions in the central business district



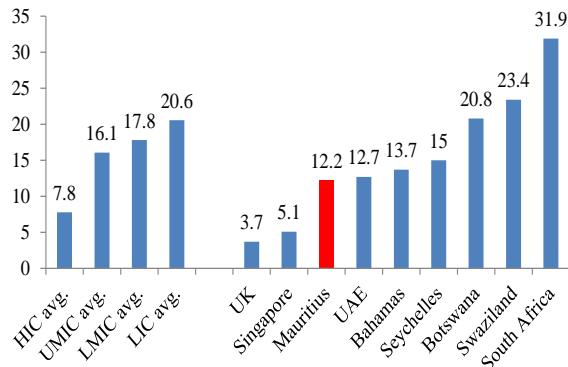
Source: RDA, Mauritius¹²⁸

155. Increased fatalities and serious injuries are another cost of growing transport demand. The relative poor quality of the road infrastructure, compounded by limitations in driver behavior, limited road safety education, excess speed, and poor enforcement, is resulting in rising rates of serious injury and death. Rear seatbelt use in private cars is negligible, and 20 percent of motorcycle helmet users do not even fasten the helmet strap. As a result, injuries from road traffic crashes are the leading cause of injury deaths. In 2012, a total of 21,195 road traffic accidents were reported, which resulted in 156 fatalities.¹²⁹ While low compared to other upper middle-income countries, the road traffic death rate in Mauritius has increased from 11.3 in 2009 to 12.2 in 2012 per 100,000 and is much higher than the average of high income countries (Figure 117). Also, the most vulnerable road users such as pedestrians and cyclists are those most exposed to road accidents (Figure 118).

¹²⁸ Ibid.

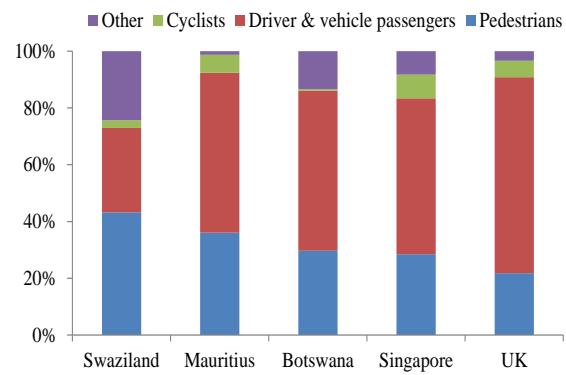
¹²⁹ Statistics Mauritius. (2013). “Road Transport and Road Traffic Accident Statistics” (Island of Mauritius), Port Louis.

Figure 117: Road traffic death rate per 100,000 population



Source: WHO Global Health Observatory (GHO)

Figure 118: Distribution of road accident deaths



Source: WHO Global Health Observatory (GHO)

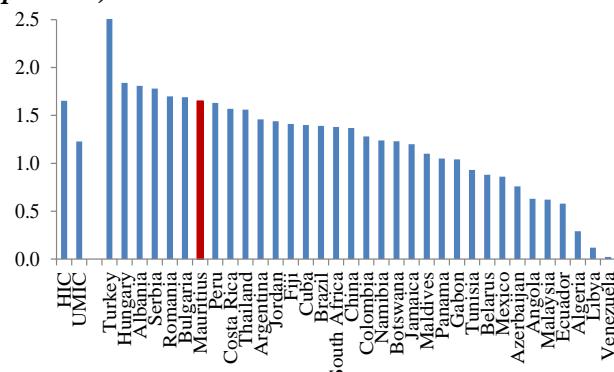
Sustainable transport policies are required to manage demand while providing high quality public transport

156. Improved demand-side management is needed to deal with growing congestion and to ensure financial and environmental sustainability of transport sector development. Mauritius may be over-dependent on private vehicles. To provide the right incentives, transport prices need to be rationalized to reflect the social and economic cost of the choice of transportation.¹³⁰ Thus, higher taxes and charges on car ownership and use could serve to retain a socially optimal use of private vehicles, mitigating the social and economic costs. Various price measures can be used to this end, including further raising fuel taxes or raising registration fees for new purchased and imported vehicles, despite both of these being largely in line with other upper-middle and higher income countries (Figure 119). A parking policy could provide appropriate incentives to road users given that parking even in cities is between US\$0.28 and US\$0.6 per hour, which is below the norm in advanced economies where the parking rates are US\$3-10 per hour or US\$18-30 per day.¹³¹

¹³⁰ The literature indicates that the price elasticity of passenger car transport demand ranges from -0.03 to -0.4 in the short run and -0.6 to -1.1 in the long run (Chamon et al. 2008).

¹³¹ Although it generally accounts for a tiny fraction of total roads, road pricing has certain potential to mitigate congestion as international experiences show that relatively minor investments have reduced vehicle travel substantially. A congestion charge of MUR 100 for private vehicles and MUR 200 for freight vehicles was proposed by the government in 2006 but never implemented.

Figure 119: Pump price for gasoline, 2012 (US\$ per liter)



Source: WDI

157. Improved public transport will need to be provided to complement demand-side measures. Based on comparison with cities of similar size and population, over 30 percent of commuters in Port Louis and Plaines Wilhems could potentially use mass transit.¹³² However, this requires consideration of many factors including adequate connection with other transport systems such as bus feeder systems. A mass transit system will require the reexamination of the licensing of routes, the current method of providing block subsidy, and making the bus industry more efficient and better integrated with the mass transit system. However, there is no authoritative body for managing traffic and transport, with responsibilities fragmented across the government, thus constraining the implementation of effective transportation measures.¹³³ Another hindrance is the lack of a national transport strategy that would serve to organize different investments in the sector. The absence of such a strategy has led to frequent changes in priorities, including redesigning the Port-Louis Ring Road Decongestion project to cancel the toll mechanism, or canceling the implementation of the Light Railway Transit system.

158. The mass transit system will need to remain affordable for the population at large. In order to attract people to mass transit, its relative price to individual car use needs to be sufficiently low.¹³⁴ The government currently subsidizes bus operators and free ride schemes to the tune of MUR 2.2 billion or US\$70 million per annum. Affordability also needs to be ensured as an anti-poverty measure, as cars may not be an option for the poor. The cost of public transport for the 1st quintile in Mauritius is merely 0.5 percent of household income, compared to over 33 percent in Africa and 20-30 percent for middle-income countries (Figure 120).¹³⁵ This may be due to government policies such as mandating employers to provide free transportation to employees and pensioners, and students having free ridership on public transport. Accordingly, focused subsidy arrangements may be needed to avoid burdensome transport costs for the poor.

¹³² The population in the two districts is about 520,000 with a density of 2,000 per km².

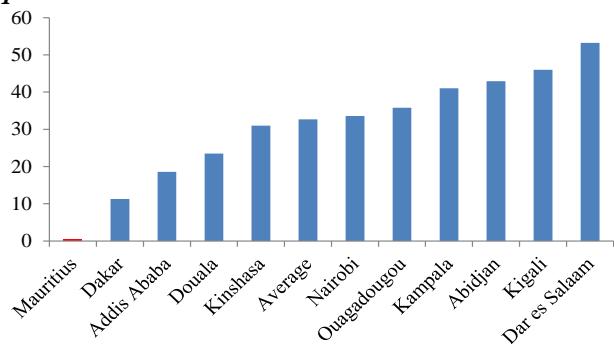
¹³³ Ministry of Public Infrastructure. (2011). “Setting up of a Mauritius Land Transport Authority: Final Report.”

¹³⁴ E.g. in Sao Paulo, a 10 percent reduction in public transit fares reduced private car use by 0.4 to 3 percent (Anas and Timilsina 2009).

¹³⁵ In Australia, a return trip cost about 3 percent of income for people living on minimum pension. In the United States, the working poor spent 10 percent of their income on commuting. Similarly, the affordability index (1st quintile) was 10 percent for Singapore, 22 percent for Kuala Lumpur and 26 percent for Buenos Aires (Carruthers, Dick and Saurkar 2005).

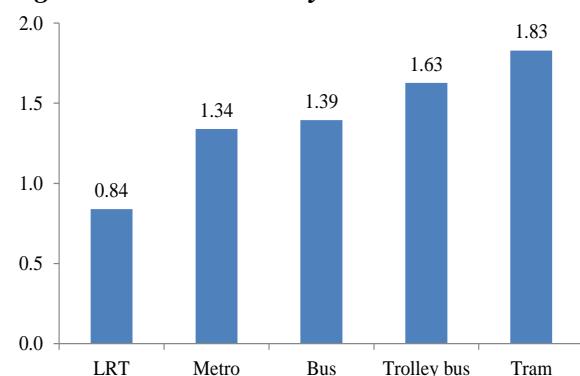
159. Cost recovery is needed to ensure sustainability. Differing urban transport options will have varying budget implications and each needs to be considered carefully to balance affordability with cost recovery (Figure 121).

Figure 120: Share of transport costs for first quintile households



Source: Gwilliam (2011)

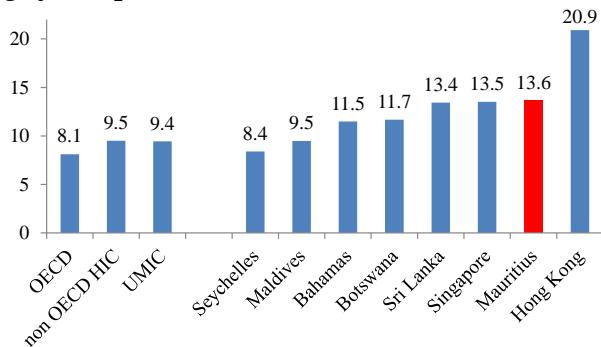
Figure 121: Cost recovery ratio to revenue



Source: Urban Transport Data Analysis Tool

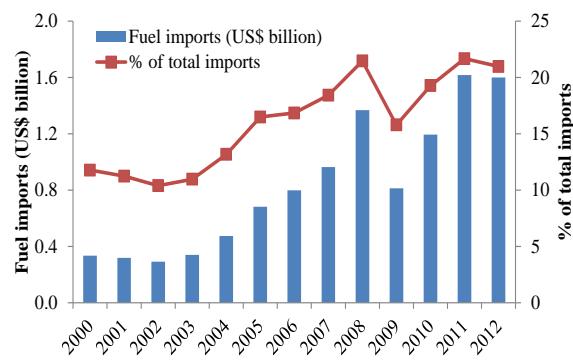
160. Advanced demand-side management as well as mass transit development will also improve the environmental and economic sustainability of Mauritius. The country's energy intensity is relatively high compared to other island countries (Figure 122). About 28 percent of carbon dioxide emissions are generated from the transport sector. As such, investment in public transport systems has the potential for large impacts.¹³⁶ Furthermore, as the country imports US\$1.6 billion of oil products, which account for about 20 percent of its total imports (Figure 123), developing efficient mass transit systems can contribute to reducing external vulnerability of the country by improving the country's external balance. Moreover, excessive road maintenance costs can be reduced with further shifts towards public transportation.

Figure 122: GDP per unit of energy use, PPP\$ per kg of oil equivalent



Source: WDI

Figure 123: Cost recovery ratio to revenue, 2000-2012



Source: WDI

161. Efforts to create new administrative centers to ease congestion problems need to be carefully planned. The government plans to carry out 13 mega-projects, of which 8 will be smart

¹³⁶ While a small passenger vehicle generates 150 g of CO₂-eq per km, an average local bus may emit 110 g of CO₂-eq per passenger-km, and light rail 84 g. Defra. (2009). Guidelines to Defra/DECC's GHG Conversion Factors for Company Reporting: Methodology Paper for Emission Factors. U.K. Department for Environment, Food and Rural Affairs.

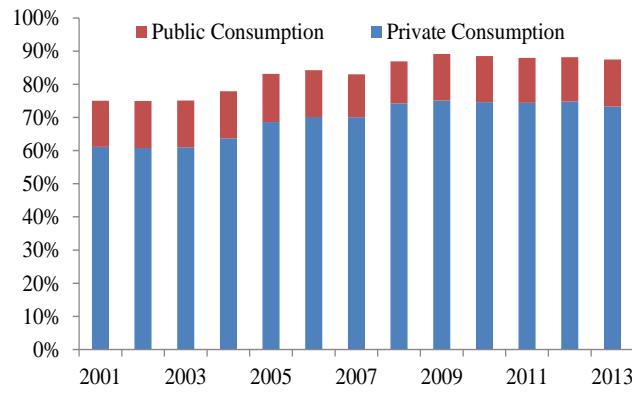
cities, some of them through PPP initiatives. This initiative will require careful integrated planning, either in terms of land use or transport. The provision of state of the art connectivity, smart modern transport, and reduced traffic congestion will not be realized without an empirically based and robust integrated transport strategy.

4.3. Macroeconomic policies to achieve high income status

Sizable current account deficits are making Mauritius more vulnerable to external shocks

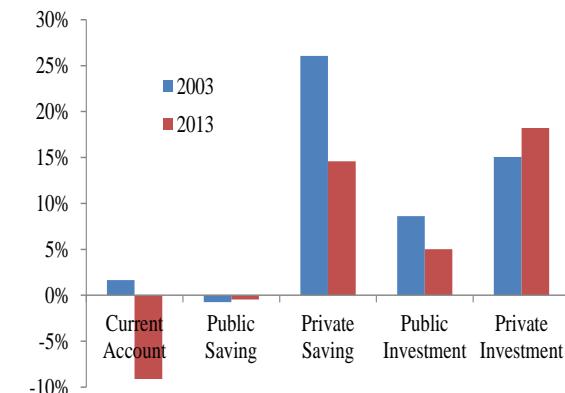
162. **Most of the current account deficit in Mauritius is explained by a decline in private saving.** Saving rates in Mauritius have declined from about 25 percent of GDP in 2000 to less than 15 percent of GDP in 2013 while consumption rates have increased over the same period ([Figure 124](#) & [Figure 125](#)). At the same time, investment rates have remained stable, at around 25 percent of GDP. The difference in the current account balance of more than 11 percentage points of GDP between 2003 and 2013 is almost entirely explained by a decline in private saving of 11 percentage points, almost no variation in public saving, and an increase in private investment of 3 percentage points of GDP, compensated by a decline of public investment of about 3.6 percentage points of GDP.

Figure 124: Private & public consumption rates (% of GDP)



Source: World Bank calculation based on WEO

Figure 125: Saving, investment evolution (% of GDP), 2003 and 2013



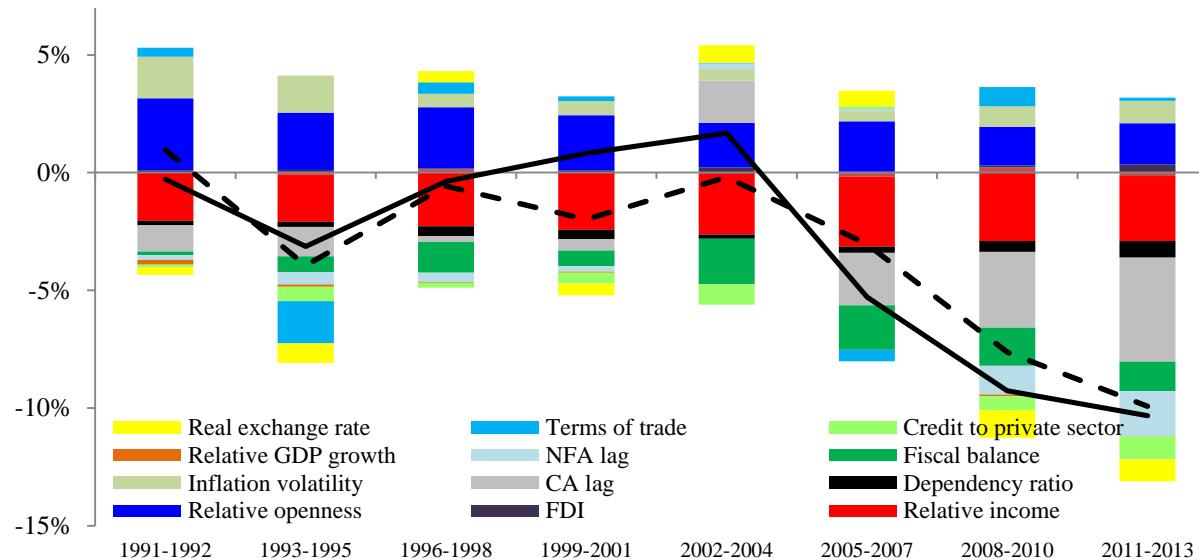
Source: World Bank calculation based on WEO

163. **A quarter of the current account deficit observed in Mauritius over the last years is associated with its stage of development, and is expected to remain in the medium run.** As its economy grows, it is reasonable to see Mauritius as a net importer of capital and it is estimated that about 2.7 percent of GDP of the current account deficit is associated with Mauritius' level of development ([Figure 126](#)). Other factors of smaller magnitude are associated with current international conditions and recent adverse terms of trade. The deceleration of Mauritius' main trading partners has led to a slowdown in demand for exports and added about half a percentage point to the deficit. These latest factors are expected to revert in the future, as Mauritian firms diversify away from slow growing partners and terms of trade revert.

164. **The combination of fiscal and monetary policies has contributed about 4 percent of GDP of the current account deficit.** During 2011-2013, the fiscal deficit is estimated to have added 1.25 percent of GDP to the current account deficit. Fast increases in credit to the private

sector and the appreciation of the real exchange rate, although recently slowed, added around 0.9 percentage points each. These data stress the importance of fiscal consolidation and the need for a more flexible exchange rate to cope with external vulnerabilities.

Figure 126: Contributions to the current account dynamics as percent of GDP, 1991-2013



Source: World Bank calculations

165. Mauritius' external imbalances are adding a source of vulnerability to the economy, as they require increased foreign financing (Box 12). The current account deficit not financed with FDI has increased gradually, reaching 7.8 percent of GDP in 2012. Because the current account deficit has been growing faster than the inflows of stable sources of foreign financing such as FDI, a greater portion of the deficit relies for its financing on other investments such as portfolio inflows. These sources are subject to higher rollover risks, are typically more volatile, and are highly sensitive to global market conditions, thus increasing Mauritius' external vulnerability. Therefore, the attraction of FDI has become crucial for Mauritius, as it constitutes a stable source of financing with collateral benefits (job creation, technology and knowledge transfers, productivity spillovers, etc.).

Box 12: How vulnerable is the current account balance to external shocks?

Some alternative scenarios to the current account of variables that have played a relevant role in the past include the following:

Fiscal Balance. For the baseline scenario it is assumed that a fiscal deficit fluctuates around 3.5 percent of GDP during 2014-2019 with alternative scenarios representing a strong fiscal adjustment with a fiscal deficit of 1.5 percent of GDP over the same period, and strong fiscal expansion with a fiscal deficit of 5.5 percent of GDP over the same period. Under the baseline fiscal scenario the current account over the mid-term is expected to fluctuate just slightly below its 2013 level of 9.9 percent of GDP ([Figure 127](#)). Strong fiscal expansion and strong fiscal consolidation imply differences in the current account balance between -11 percent of GDP and -8.5 percent of GDP, respectively. This strengthens the case for fiscal consolidation to reduce the current account deficit.

REER scenarios. For this baseline scenario, there is assumed a 1 percent real appreciation per year (below the average appreciation of 3.2 percent per year over 2010-2013), with alternative scenarios representing strong appreciation (5 percent per year). While the baseline scenario considers the evolution of the current account to around 10 percent of GDP, a strong appreciation will bring an adjustment in 2015 to 12 percent of GDP that will be highly persistent ([Figure 128](#)). Increased exchange rate flexibility is important to ensure external rebalancing as long as nominal depreciations are transmitted to the real exchange rate.

Terms of trade scenarios. A sharp worsening of terms of trade, triggered, for example, by an increase in global energy prices, would bring the current account deficit to almost 10.5 percent of GDP for the entire period. Terms of trade improvements would have limited impact to reach 8.5 percent of GDP by 2019.

Figure 127: Current account projections under shocks to the fiscal balance (% of GDP)

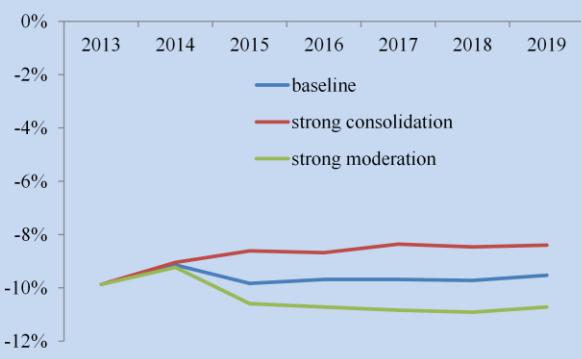
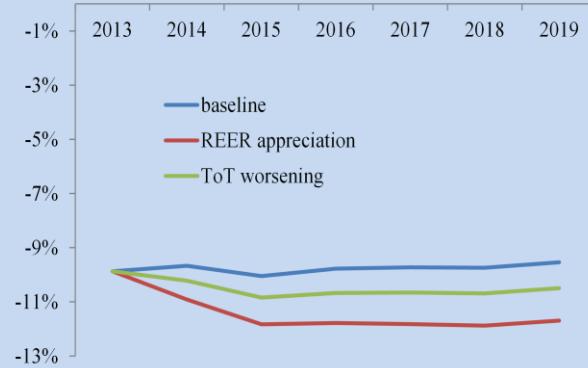


Figure 128: Current account projections under shocks to REER and terms of trade (% of GDP)



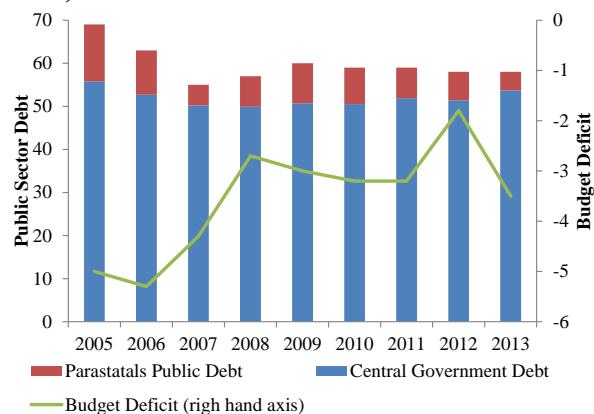
Source: WB calculations

Mauritius' ambitious goals will likely require a combination of additional resources, increased public sector efficiency and sustained efforts to implement reforms

166. Mauritius has been broadly successful in managing its macroeconomic framework but improved fiscal efficiency and restoration of fiscal space would be key to support the country's goal to reach high-income status in the medium term. This is particularly salient given that the fiscal environment in which government operates will surely become increasingly challenging in the future, with looming large expenditures in government liabilities (i.e. pension and health) and a large development program to build human and physical capital. Donor funding to offset the current account deficit is marginal, as the level of donor assistance is very small. Also, while fiscal consolidation has been successful ([Figure 129](#)), the large openness of the economy in terms of trade and investment and the vulnerable situation of its chief external partners (mainly European countries) make it critical for Mauritius to maintain solid financial buffers to conduct countercyclical policies as needed.

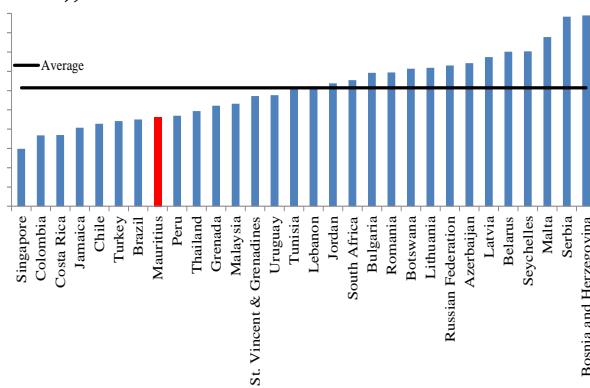
167. The government has consolidated the fiscal deficit and the public debt but financing the government's ambitious development agenda may be difficult given reduced discretionary funding. The government's obligation to meet statutory debt targets within the context of a low taxation environment suggest that most of the projected consolidation will likely come from public expenditure restraints. As a result, public expenditure as a share of GDP would fall below the current levels, which are particularly low when compared to peer countries ([Figure 130](#)). Without expanding the tax base, these low public expenditures may be insufficient to develop human capital and infrastructure, undermining efforts to achieve high-income status. Therefore efficiency gains, policy changes, additional resources, and improvements in service delivery in areas such as social protection, education and health will be needed.

Figure 129: Fiscal and Debt consolidation, % of GDP, 2005-2013



Source: Statistics Mauritius

Figure 130: Public expenditure of upper MICs (% of GDP), 2012



Source: IMF and staff calculations

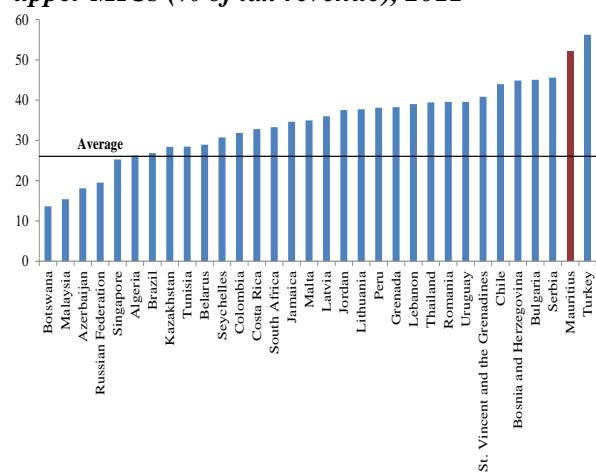
The tax system and social contributions could be expanded to provide adequate resources to finance priority government programs

168. There is room to diversify the tax system to provide the required public resources to finance the broad development agenda. Mauritius' pro-business low taxation system has worked well in terms of supporting economic growth and collecting adequate revenues. The current system heavily relies on taxation of goods and services ([Figure 131](#)), while providing simple and low taxation for other sources of income. However, as the country develops, the

taxation system will likely need to be adjusted to evolving realities. First, it will have to compensate for foregone revenues.¹³⁷ Likewise, foreign grants will continue to drop, associated with the country's growing income per capita.¹³⁸ Second, additional resources will likely be needed to implement the large development agenda. This gap may be partially filled with excise and environmental taxes and the taxation of wealth, mostly in the form of property taxes.¹³⁹

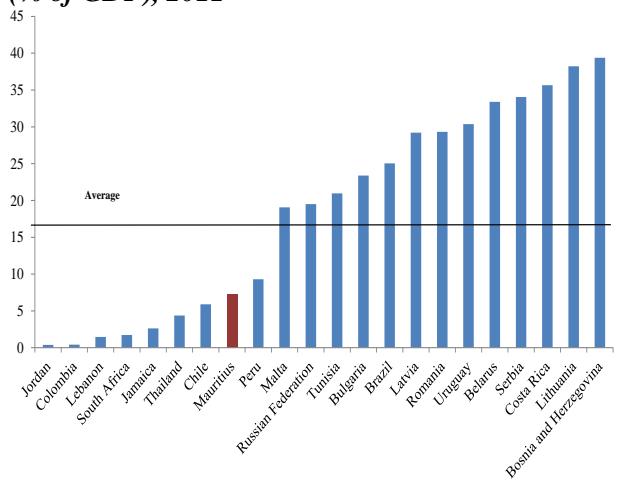
169. There are also opportunities to close the gap between the social contributions made by Mauritian citizens and social protection services received from government. Mauritians enjoy the social protection system of an upper middle-income country but make social contributions well below the average upper middle-income country (Figure 132). The Mauritian social protection system, representing around 4.6 percent of GDP in 2011, is in line with other high middle-income countries but is not supported enough by current social contributions, which at 0.3 percent of GDP are clearly insufficient to finance the services provided. This funding gap is very large as social contributions are only around 7 percent of revenues in Mauritius compared to an average of 19 percent in other upper MICs, and will likely increase over time due to the demands of an aging population, among other reasons.

Figure 131: Taxes on goods and services of upper MICs (% of tax revenue), 2011



Source: Statistics Mauritius

Figure 132: Social contributions of upper MICs (% of GDP), 2011



Source: World Development Indicators

170. Public expenditure is under control but will face growing pressures in coming years. Overall, the distribution of expenditure has been consistent over the recent past (Figure 133 & Figure 134). Sector allocations to social sectors have been broadly stable and represent between 45 to 50 percent of total public expenditure. Yet overall public spending on health and education

¹³⁷ For instance, taxes on customs that represented 3.9 percent of GDP in 2005 have declined to 0.4 percent in 2011 as a result of trade liberalization.

¹³⁸ The grants received by Mauritius total 0.7 percent of GDP, which compares favorably with grants received by countries with similar income status. In 2011, countries with similar income per capita received less grant funding as a share of GDP; for instance, Costa Rica received negligible amounts, Botswana and Lebanon received 0.2 percent of GDP each, and only Romania received well above Mauritius at 1.2 percent of GDP, but this was thanks to substantial contributions from the EU.

¹³⁹ The government has already taken a pioneering approach on excise and environmental taxes with a levy on energy products equivalent to 3.7 percent of GDP. This could be reinforced by converting present vehicle excise taxes to a tax based partly on CO₂ per kilometer. Also, the annual road tax could be converted into a tax on annual kilometers driven to reduce traffic congestion. The property tax could also be increased from the current 1.2 percent of GDP, while ensuring that the most modest properties are protected

is low when compared to other MICs, 2.3 and 3.5 percent of GDP, respectively. In addition to the rapidly aging population, this will put additional pressure on public expenditure in coming years. This calls for careful consideration of policies to raise efficiency and increase budget allocations to improve service delivery. This also will require an increased performance-focus, such as through improved M&E of public services, particularly health and social protection, to ensure effective targeting and improved outcomes.

Figure 133: Government expenditure by category, 2007 - 2013

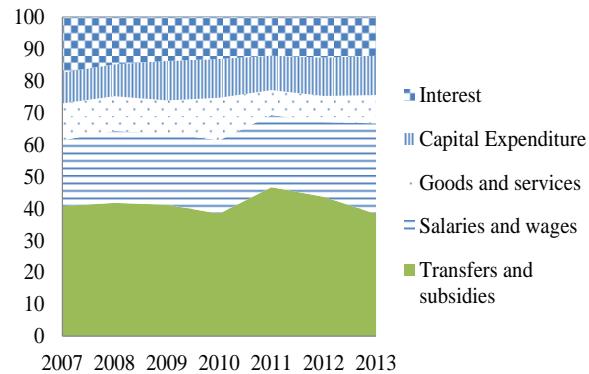
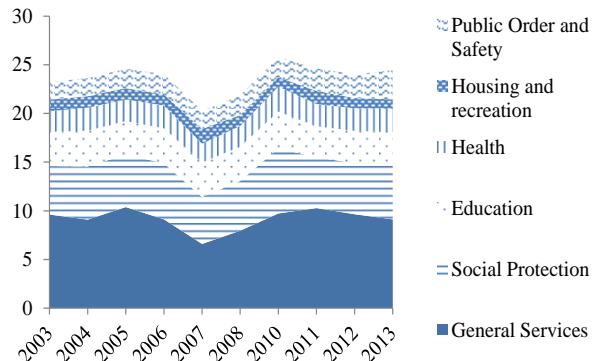


Figure 134: Government expenditure by function, % of GDP, 2003-2013



Source: Ministry of Finance and Economic Development

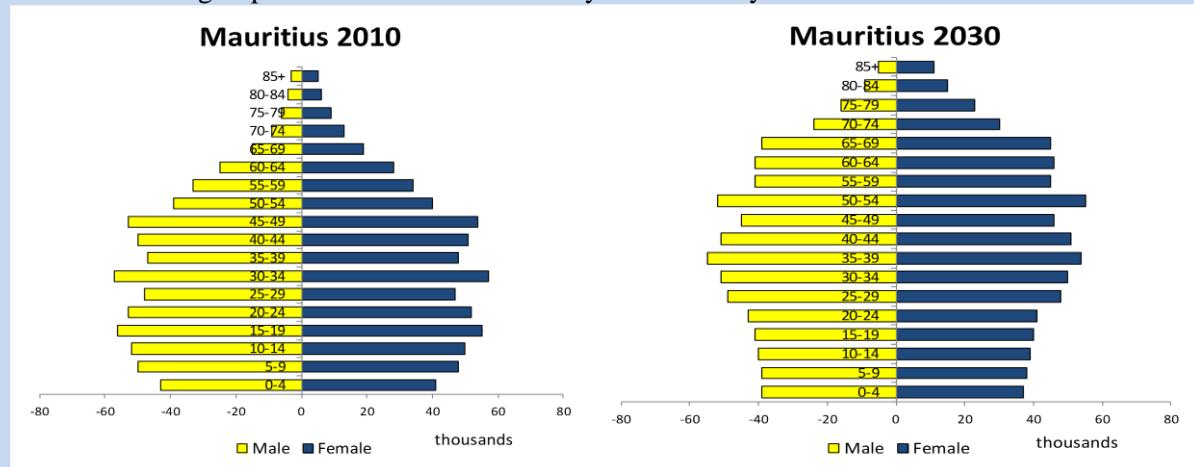
An aging population and increasing prevalence of NCDs will put intense pressure on the health system

171. Public health spending will be under pressure, with a potential impact on fiscal sustainability. While healthcare spending has risen, particularly since 2007, it has moderated recently as a major investment in hospitals has been completed (Figure 135). With a growing number of older people, increased prevalence of NCDs in older individuals, and an increasing demand for health care as the country develops, the public health system will be under additional pressure (Box 13).¹⁴⁰ To ensure that the current health system remains financially sustainable, innovative approaches in prevention and chronic patient care will need to be developed and the overall efficiency of the health system improved. Administrative reforms to raise accountability in service delivery and budget decentralization for the management of funds will be needed, as well as adequate information and administrative systems to support both service delivery and management. PPPs may play a role by leveraging available finance and bringing private sector expertise to areas that are non-core competences of the Ministry of Health and Quality of Life (i.e. maintenance).

¹⁴⁰ For example, even at current levels of utilization, the aging population will increase hospital use by almost one percent per year, and increasing age-standardized NCD prevalence will undoubtedly increase these utilization rates and related costs even further unless the underlying problems are addressed.

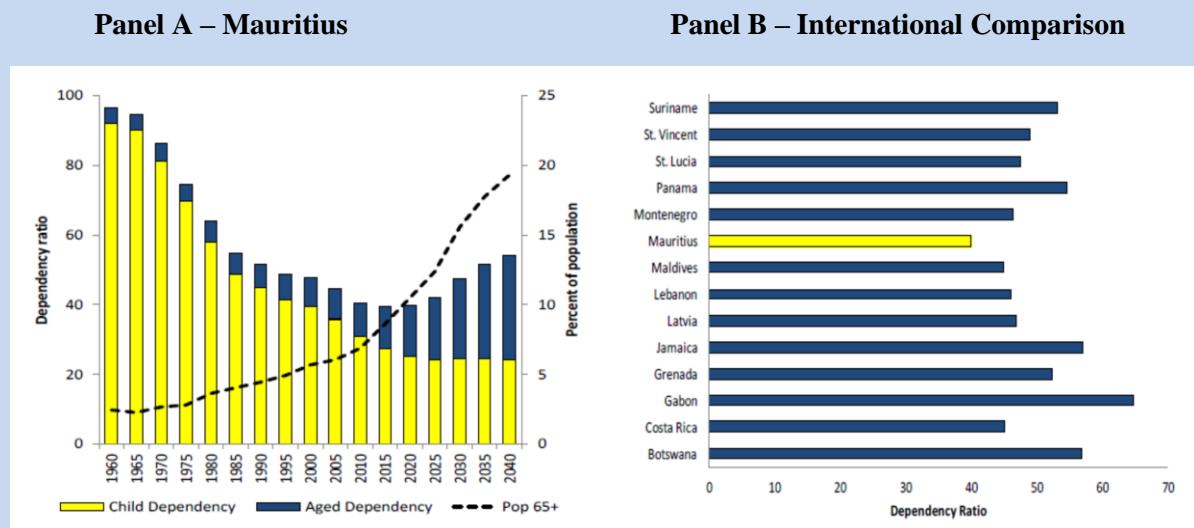
Box 13: Mauritius – Quickly aging population

A highly relevant factor affecting Mauritius in the medium and long term will be its aging population, with far-reaching impacts across the entire society and economy.



Source: World Population Prospects, 2010 Revision (downloaded 07/10/12)

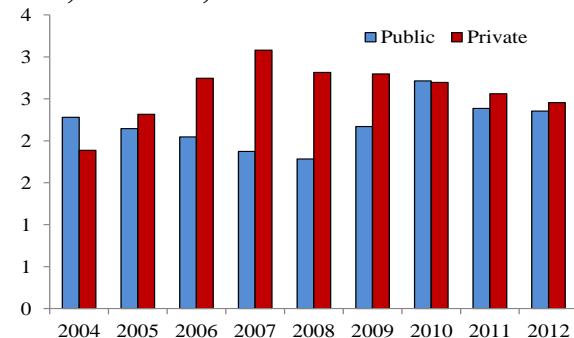
Since independence in 1960, Mauritius has benefitted from a demographic dividend, i.e., its dependency ratio has decreased over time, so that the number of people financing public services has grown while the number benefitting from these services has declined (Panel A). The country is now close to the low point of the dependency curve – around 40 dependents per 100 working age people – which is low compared to other middle-income countries (Panel B). The ratio will now start going up as the population ages and the cohort of people 65 and over increases to 20 percent of total population by 2040.



Source: World Population Prospects, 2010 Revision and The World Bank Databank (downloaded 07/10/12)

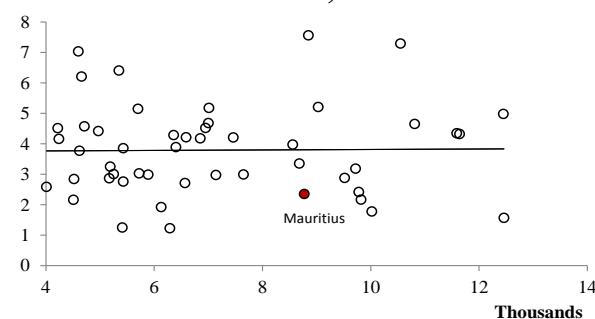
172. Given the high private spending on health in Mauritius, better communication between the public and private health systems is needed to ensure adequate access to health services. While Mauritius' total health expenditure is comparable to other middle-income countries (Figure 136), the private sector constitutes around half of total health expenditures. Ensuring that private health spending complements rather than substitutes for public health expenditure is important to ensure adequate health services to all and avoid adverse impacts on the poor. A renewed focus on efficiency and quality of the publicly financed health system is needed. There are several issues that should be addressed, such as better reporting on private sector providers, a more explicit formulation of which health services are included and provided by the public health system, and further competition between public and private providers for public funds under a clearly defined health insurance arrangement.¹⁴¹

Figure 135: Health sector spending as % of GDP, Mauritius, 2004 - 2013



Source: Health Nutrition and Population Statistics,
Last Updated: 07/23/2014

Figure 136: Private sector spending as % of GDP, Mauritius and other MICs, 2013



Pension sustainability faces challenges because of population aging

173. The aging population has significant implications for the pension system. Due to low fertility rates and increasing life expectancy, Mauritius' population is quickly aging.¹⁴² As a result, the burden of the Basic Retirement Pension on the government's budget will significantly increase under the existing rules for eligibility. The number of beneficiaries of the BRP will double by 2050 under the current retirement age of 60 and the cost of the BRP is projected to increase from 3 percent of GDP in 2013 to around 6.6 percent of GDP in 2050 (Figure 137). In 2013, the government introduced a new defined contribution retirement scheme for the civil service, financed with contributions made by civil servants while employed. This new retirement scheme only applies to those who enter into civil service in 2014. As a result, there will be a transition period in which retired civil servants under the previous define benefit system will continue to collect their retirement benefits but the new civil servants will not contribute to the previous system, which will require of additional government fiscal support.

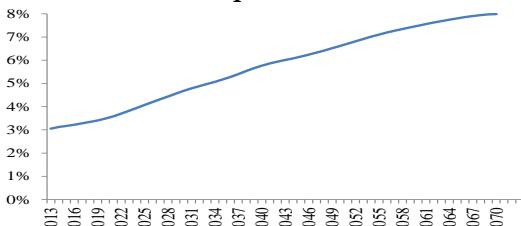
¹⁴¹ Already private facilities are providing some publicly financed services through contracting arrangements, but this is limited in scope and could be expanded.

¹⁴² The old-age dependency ratio, the percentage of people that will depend on the people of working age, will triple from 18.4 in 2013 to 55.3 in 2050.

174. The government needs to take measures today to address the growing fiscal burden of pensions in the future. Given the nature of the pension schemes, benefits of reforms are typically reaped in the medium to long term, which calls for immediate actions to ensure adequate preparation for future pensioners and adequate burden sharing among present and future pensioners. As a first step, the government may consider gradually increasing the retirement age of the BRP to 65 in line with the contributory pension scheme and implementing a pension test that would allow for receipt of BRP only by those without contributory pensions. In the future, the government may consider targeting the BRP to weed out better-off beneficiaries who probably do not rely on the BRP as a major source of income.

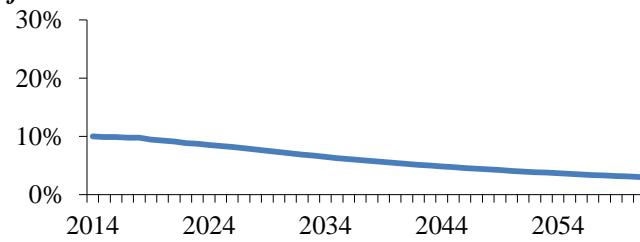
175. The contributory scheme under the National Pension Fund will be fiscally balanced at the expense of decreasing benefits.¹⁴³ To cope with increasing beneficiaries and decreasing contributors, the government is gradually increasing the retirement age from 60 to 65 by 2018, although this does not apply to the BRP. However, the impact has been limited as 95 percent of new retirees in 2013 retired at 60¹⁴⁴ due to a lack of incentives to contribute longer years and declare correct earnings (Figure 138).¹⁴⁵ The contributory scheme may lose its relevance given that it is not expected to provide meaningful benefits to participants while putting additional pressure on government to contribute additional public resources. In a context where declining national savings need to be boosted and incentives to work longer years need to be provided, the system should be reviewed to provide incentives to declare correct earnings. As a first step, the contribution ceiling could be removed or significantly increased to allow people to contribute on what they actually earn.¹⁴⁶

Figure 137: Projected long term spending on basic retirement pension



Source: World Bank calculations, using PROST model

Figure 138: Projected benefits from national pension fund¹⁴⁷



Building the human capital required to move to a knowledge-based economy will require additional public resources

176. Mauritius does not invest a large amount in education and training, and this amount has been progressively decreasing from 4.5 percent of GDP in 2003 to 3.5 percent of GDP in 2012 (Figure 139 & Figure 140). Although this is somewhat compensated by private spending on education, overall funding for education is insufficient to attain the government's goals.

¹⁴³ Projections were conducted using the World Bank PROST (Pension Reform Options Simulation Toolkit) model.

¹⁴⁴ This figure reflects “official” retirement only: up to one third of retirees continued to work past their 60th birthday.

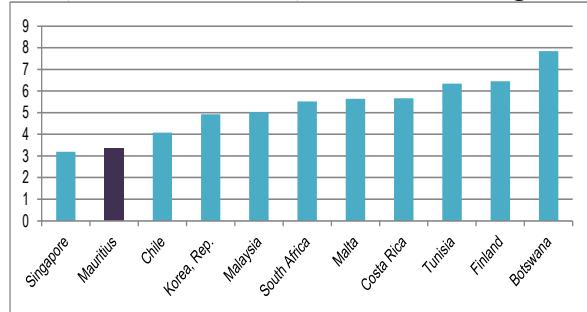
¹⁴⁵ 40 percent of pensioners collect just the minimum pension.

¹⁴⁶ The contribution ceiling is regressive as it allows high-income workers to cap their contributions, de facto providing them with the option to get a minimum pension with minimal contributions.

¹⁴⁷ Benefits presented are replacement rates for new pensioners calculated as a ratio of the new pension and average wage in a specific year.

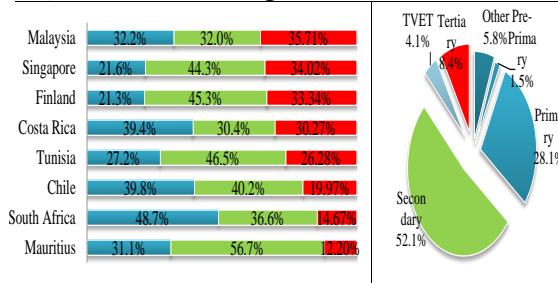
Secondary education expenditures are favored at a level of 1.7 percent of GDP (Figure 140). 80 percent of TVET education is publicly funded but this accounts for only 5 percent of the overall funding for education. Tertiary allocation is much lower at 0.2 percent of GDP.¹⁴⁸ There is a strong dependency on public financing by tertiary education institutions, as most public funds are allocated to cover tuition fees for undergraduates.¹⁴⁹ The high use of funds on social expenditure poses challenges to quality of higher education and to the development of research.

Figure 139: Public spending on education (% of GDP, selected countries, 2008-2011 average)



Source: UNESCO Institute for Statistics, Online Database

Figure 140: Public spending on education by level, 2008-2011 average



Source: BOOST Education Module and UNESCO Institute for Statistics, Online Database

177. Economic structural transformation requires a revamped education and training system to produce high skills, and this in turn requires significant financial resources and new funding modalities. Reforms are needed to improve the quality and relevance of skills and these require the expansion of secondary and tertiary education, curricular revision at various levels, investment in infrastructure, and other education and training inputs. Mauritius is faced with the challenge of developing this system under fiscal constraints that will require trade-offs, particularly in primary education, where better targeting of funds to schools with vulnerable pupils would reduce uneven educational outcomes. In secondary education, a more strategic use of school grants may equalize educational outcomes across various income groups. New funding avenues along with strengthened dialogue between the public and private sectors will develop the education and training system that best responds to Mauritius' needs. In tertiary education, financing options may require increasing fees complemented by income-contingent student loans to avoid increased inequity of access to tertiary education. Additional funding will need to be coupled with a review of non-financial factors that have an impact on learning outcomes, such as, availability and quality of learning materials, relevance of curricula, and teachers' performance and accountability. Also, at the individual levels, better understanding of the relationships between socio-economic factors, gender, and learning achievements are essential for the formulation of relevant and adequate policy options. This will require better use of learning assessments to inform policy and quality driven reform.

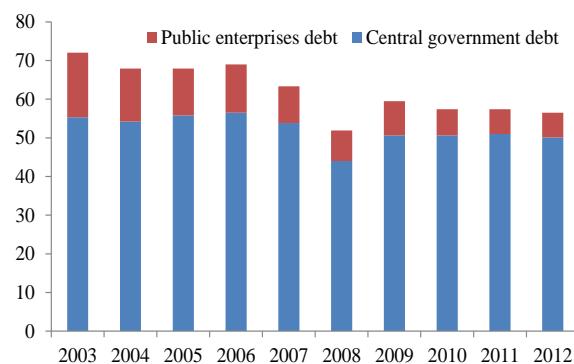
SOEs absorb too many resources, pose fiscal risks, and are too costly in their provision of public services

¹⁴⁸ This is well below the average for OECD countries (1.6 percent of GDP), and other upper MICS such as Malaysia (1.1 percent) and Singapore (1.1 percent).

¹⁴⁹ While the University of Mauritius has been trying to expand its non-budget funding to around 45 percent of expenditures through fees applied to executive and post-graduate students, this has not been linked to research activities.

178. State-owned enterprises (SOEs) in Mauritius play a strategic role in the provision of essential goods and services, including utility services such as water and electricity. They form one of the largest sectors of the economy and while their relevance has been reduced over the years they are important contributors to the national development strategy. They absorb significant government resources through grants and transfers from the budget, estimated at 3 percent of GDP in 2010. The Mauritian government has made significant efforts over the past decade to reduce the fiscal burden that SOEs represent, mostly by restructuring some loss-making SOEs and imposing a minimum return on capital investment. As a result, SOE debt has substantially declined over the years ([Figure 141](#)).

Figure 141: Central and public enterprises debt, 2003 - 2012



Source: MoFED

179. Current SOE governance has the potential to hinder effective service delivery. While significant progress has been made with respect to companies' governance in the private sector, the governance of SOEs lags behind. The current legal framework and reporting practices of SOEs negatively impact service-delivery outcomes. The legal framework (a) does not specify the collective and individual roles and responsibilities of board members; (b) does not specify board composition, which hinders the selection of members with the adequate skills; and (c) allows the supervising minister to appoint the chair and other directors, which often results in political appointees with inadequate skills and creates conflicting roles for both monitoring and decision-making roles. In addition, the quality of financial reporting is poor and in some instances there is an overly long delay by SOEs to publish financial reports with no resultant sanctions.

180. Fiscal risks emanating from SOEs may negatively impact government finances. Some potential fiscal risks include: (a) some SOEs being unable to sufficiently recover operating costs due to the policy for fee and price setting of goods and services; (b) SOE investment project cost overruns, which have amounted to 6.4 percent of GDP in 2013; (c) SOE debt/ arrears, although declining, carry risks of not being reimbursed to the government because of hidden subsidy schemes, unexpected changes in foreign currency debt, potential impact of adverse changes in interest rates, risky hedging strategies against some of these risks, or political economy constraints; and (d) government guarantees on SOE debt to third parties that may be recalled.

181. Clear development objectives and ownership policies of SOEs would help to rationalize government intervention in the economy. At the aggregate level, this would help to eliminate current ambiguities where both the MoFED and the line ministries share authority.

These policies would support a proper classification of SOEs as per their policy objectives and commercial realities to identify the areas and developmental objectives for which SOEs are relevant. The government should then develop and issue an ownership policy relevant for each category, providing stakeholders, market participants and the general public with an understanding of the state's objectives as an owner, particularly with regard to policies on ownership and management diversification (through share sales and PPPs, for example). The legal framework for SOEs can be reviewed to simplify, streamline, and harmonize the legal form under which the different SOEs operate, either through the Companies Act or dedicated legislation governing SOEs.

182. Accelerating the pace of SOE governance reforms would play a critical role in raising SOE accountability. Senior managerial positions, including the nomination of decision makers and many board members in SOEs, are strongly linked to political patronage and loyalty rather than the business experience, capability, and integrity. Given human resource constraints these are serious barriers to the intended objective of inclusive and sustainable growth. At the firm level, efficiency can be enhanced by putting in place measures to empower SOE boards of directors by nominating the most qualified and appropriate individuals as directors. Also, accountability of SOEs should be made clear either through corporate objectives anchored in laws, regulations, or cabinet decisions or through performance contracts disclosed to the public. Oversight capacity, currently spread between OPSG, MoFED and sector ministries, needs to be strengthened technically and politically to effectively supervise and monitor SOE performance in order to help promote accountability, transparency and fiscal discipline as well as assist in determining areas for operational and/or financial restructuring.

There is a need to rebuild the fiscal buffers to cope with external shocks

183. A prudent macro-fiscal framework and fiscal consolidation is necessary to reach public debt targets (Box 14). The government has taken important steps to improve macroeconomic management of a succession of severe external shocks. These include a significant reduction of debt to GDP ratio during the last decade from 69 percent of GDP in June 2005 to below 52 percent of GDP in 2008. This reduction was temporally halted by the implementation of stimulus packages in 2009 and 2010, so that total debt increased to 60 percent of GDP in 2009 before falling back slowly in subsequent years. While the adoption of the 2008 Public Debt Management Act (PDMA) has supported debt reduction and offset the fiscal deficit, the major driver has been economic growth. In view of the low tax strategy of the country, reductions in overall spending relative to GDP are needed to achieve a 50 percent to GDP public debt reduction by 2018. This will require the acceleration of fiscal consolidation efforts after the limited progress achieved recently.

184. Growth moderation, public spending pressure, and an uncertain external environment produce additional fiscal risks that could make the country less resilient to shocks and more prone to macroeconomic instability. This would challenge Mauritius' development model of an international trade platform that relies on country stability to attract foreign investment and move up in the ranks of middle-income economies. Financing of the deficit is not currently a problem. Excess liquidity in the financial sector, low inflation, and a positive interest rate environment translate into adequate financing with limited rollover risks. However, a reversal of this scenario could develop quickly and require large rapid policy

adjustments. At issue is not just fiscal sustainability but also the consistency of the development model of Mauritius, which requires predictability and proactive risk management to provide an adequate environment to attract foreign investment.

185. While savings can be found across the board by eliminating ineffective programs and policies, piecemeal efforts are unlikely to achieve cost and efficiency savings. Instead, a comprehensive and sustainable approach will likely require an acceleration of public sector reforms to improve service delivery. This will require ingraining a comprehensive approach in the public sector to improve evidence-based policy decision-making, raise accountability, and focus on service delivery. Further efforts to address efficiency and equity issues in the delivery of services across the public sector, including improved planning, financial management, and monitoring and evaluation, will ensure the incentives to sustain implementation of reforms. Overall, reforms to unlock supply side constraints would have improve medium term macroeconomic projections (Box 14).

Box 14: Mauritius medium-term macroeconomic projections

The government's medium-term forecast for Mauritius foresees a smooth acceleration of GDP growth from 3.4 percent in 2014 to 4.0 percent in 2018 and beyond. This economic growth is supported by the continuation of the recent economic model with private consumption accelerating to 5 percent per year by 2020 and trade continuing to grow at current trends. The fiscal deficit is projected to fluctuate around current levels (-3 percent of GDP) and public debt will converge to the 2018 goal of 50 percent of GDP.

However, these projections are highly dependent on policy decisions to unlock supply-side constraints, accelerate productivity gains, and sustain income growth. In many instances in the recent past, this has not been the case. If policy decisions are further postponed it may result in a “new mediocrity” scenario, where private consumption is 2 percent points below current projections and unable to support annual economic growth beyond the current 3.4 percent.

In this scenario, the government may want to run a more pro-cyclical fiscal policy to partially counteract private sector sluggishness and increase public consumption and investment each by 1 percent of GDP. While financing the projected 5 percent of GDP fiscal deficit would be feasible in a context of a highly liquid financial system, the debt to GDP ratio would be substantially above the 50 percent to GDP goal by 2018, a level to which it would converge only by 2024. Furthermore, the government would be depleting its fiscal buffers and would leave the economy exposed to potential economic shock.

In an alternative scenario, the new government may want to accelerate key reforms to improve education and skills and boost productivity in the long term. However, the reforms that can raise output potential are unlikely to pay off in terms of economic growth in the short term (i.e. education or innovation). The government may fill that gap by increasing public investment by 1 percent of GDP in 2016 and 2017 to unlock some infrastructure bottlenecks (i.e. water, electricity). Further acceleration of infrastructure development will be difficult to sustain within the existing public sector capacity and available fiscal space to meet the 2018 debt threshold. Yet, the government may also accelerate sector reforms in 2015 so that a more conducive environment favors implementation of PPPs to carry out a larger infrastructure program in the medium term. By phasing the implementation of a program that unlocks infrastructure and human capital bottlenecks, the government may not only sustain domestic demand in the short and medium term but also raise long-term growth.

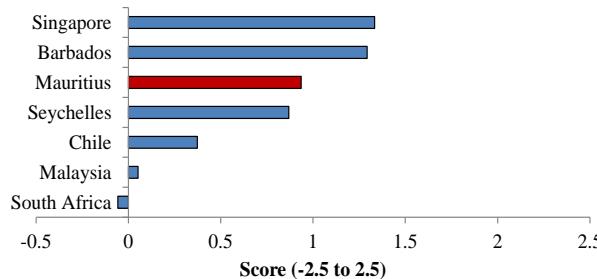
4.4. Public sector management: improving service delivery

High government effectiveness needs to be improved to achieve high income level status

186. Mauritius has made strong achievements in governance during the last two decades, demonstrated by relatively high scores on relevant governance indicators. Periodic multi-party elections, a clear separation of powers, and a relatively free and independent media demonstrate Mauritius' commitment to good governance ([Figure 142](#) & [Figure 143](#)). In public sector management, important initiatives have shifted away from a traditional input-based annual budget program to a strategic, performance-oriented multiannual exercise. A comprehensive internal control framework exists to ensure that government resources are used economically and effectively, and that assets are safeguarded, which translates into strong scores across many PEFA

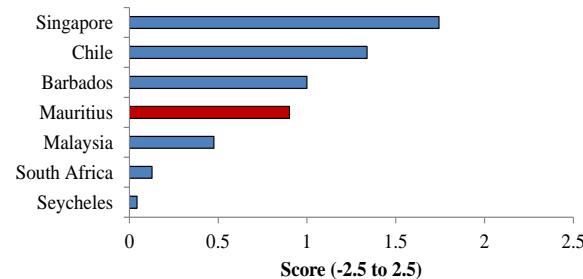
indicators (Figure 144 & Figure 145). These reforms have allowed Mauritius to achieve a relatively strong position from a regional perspective, which has resulted in the country reaching MIC status and making steady progress towards further public sector strengthening.

Figure 142: Political Stability, 2013



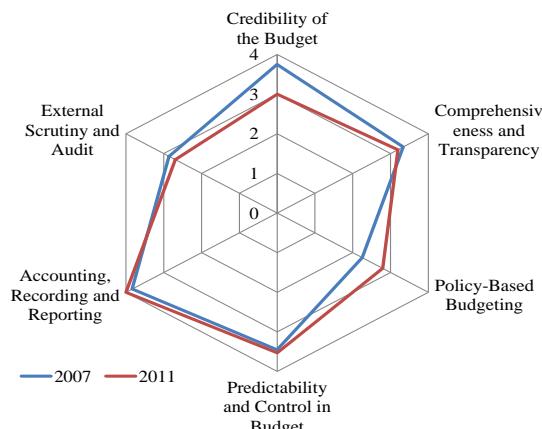
Source: Worldwide Governance Indicators

Figure 143: Rule of Law, 2013



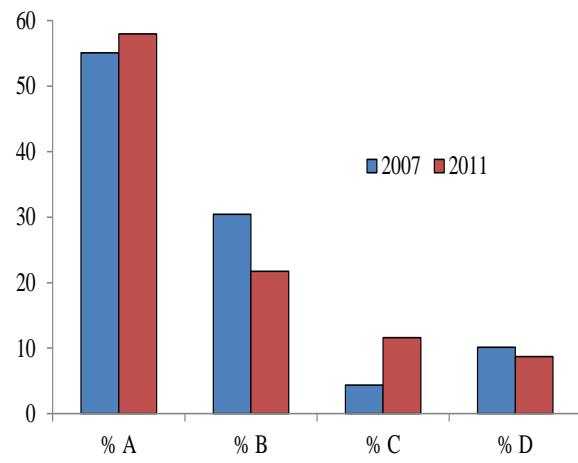
Source: Worldwide Governance Indicators

Figure 144: Budget management, PEFA indicators, 2007, 2011



Source: World Bank (2007 and 2011)

Figure 145: PEFA indicators, % of total, 2007, 2011



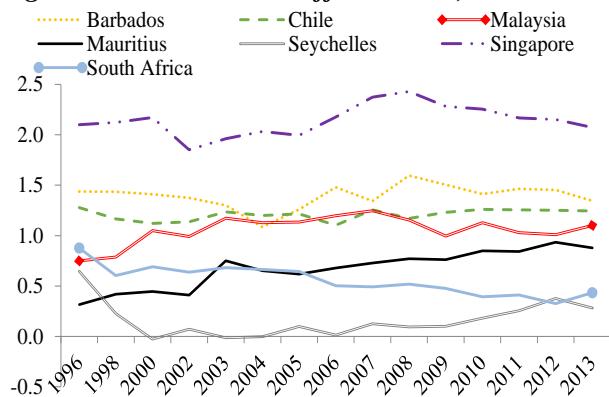
Source: World Bank (2007 and 2011)

187. Over the last few years, some improvements in the public sector efficiency have slowed down or even reversed. Despite overall progress on World Governance Indicators (WGI)¹⁵⁰ over the past decade, recent years show a stagnation or decline in some areas, such as government effectiveness (Figure 146). Limited progress has been achieved on the ‘Voice and Accountability’ indicator over 1996-2013 and progress on regulatory quality has also slowed down in recent years (Figure 147). Although Mauritius is perceived to be among the least corrupt countries in Africa, it is significantly below OECD levels and corruption trends seem to have

¹⁵⁰ The Worldwide Governance Indicators (WGI) project reports aggregate and individual governance indicators for 215 economies over the period 1996–2013 for six dimensions of governance: Voice and Accountability, Political Stability and Absence of Violence, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption.

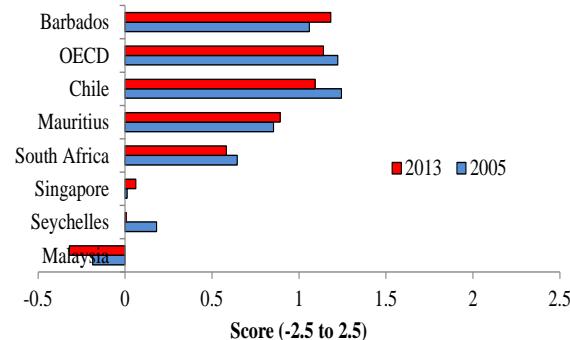
reversed recently, as shown in the recent decline in the ‘Control of Corruption’ indicators (Figure 148 & Figure 149).¹⁵¹

Figure 146: Governance effectiveness, 1996-2013



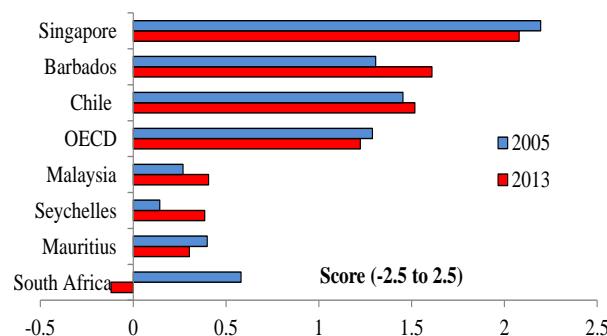
Source: World Governance Indicators

Figure 147: voice and accountability, 2005-2013



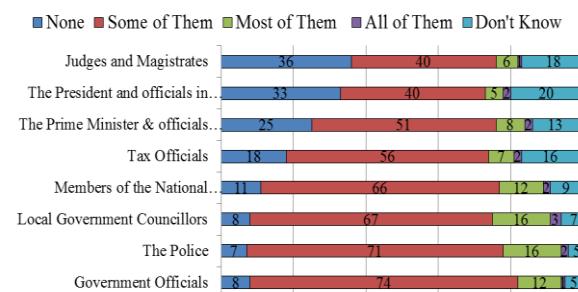
Source: World Governance Indicators

Figure 148: Control of corruption, 2005-2013



Source: World Governance Indicators

Figure 149: Corruption perception index by institutions, 2012



Source: Afrobarometer Mauritius (2012)

188. **Public sector efficiency lags behind other upper-middle-income countries, affecting efforts to accelerate economic growth and inclusiveness.** There is stated interest in replicating international good practices adopted by peer countries, yet the introduction of such reforms is often inadequately implemented, putting Mauritius at risk of falling behind. Reforms that are crucial for greater competitiveness such as efficient and transparent procurement and public investment management of strategic infrastructure programs are yet to be fully implemented.¹⁵²

¹⁵¹ The Afrobarometer surveys illustrate the same message: 74 percent of respondents perceive that some government officials are involved in corrupt practices. Police (71 percent) and municipal councilors (67 percent) also had elevated levels of perceived corruption. 40 percent of respondents believe that judges and magistrates are involved in corruption. Despite these high perceptions, only 2 percent of respondents said that they have had a personal experience with corruption. The national anti-corruption office, the Independent Commission Against Corruption (ICAC), has been credited for active preventive and outreach work and developing innovative tools to fight corruption, but has also been criticized for not systematically taking up all cases of alleged corruption.

¹⁵² Organizational reforms of key service-delivery agencies, such as the acceleration of delivery of basic services, permits, and licenses for citizens and private sector companies are yet to be implemented and e-government and m-government tools have yet to show their full potential for reaping greater efficiency and accountability results for the public sector.

Civil service reforms are less advanced as in peer countries and basic instruments, such as a human resources management information system, are not yet fully operational across the administration. Greater emphasis on performance is needed across sectors, from strategic planning to performance-based budgeting, management, and M&E to enhance service-delivery outcomes in key sectors.

189. Achievements to date have enabled Mauritius to qualify as an upper-level middle-income country, yet these efforts may not be sufficient to elevate the country to high-income status. First-generation public sector reforms around public sector efficiency and effectiveness and strengthening transparency have laid the foundation for the government to deliver the services that a MIC requires. However, accelerating towards HIC status calls for second-generation reforms, focusing on greater performance. This requires more transformational public sector reforms across the government to enhance service-delivery and to ensure a greater turn-around of key services through a focus on outcomes, further strengthening efficiency and effectiveness, and new incentives framework conducive to strengthening accountability. This would be complemented by improved legal and regulatory systems to provide a predictable investment climate, ensure investors' rights, improve risk management controls, and keep bottlenecks for investors at a minimum. Yet, strengthening citizen engagement will be key to ensure that the information put forward transparently is actually used to hold government accountable.

Five main areas where improved public sector accountability can be accelerated

190. The achievement of infrastructure goals calls for an improved public investment management system. In order to deliver on infrastructure goals, there is a need to strengthen public investment management efficiency, both at the MoFED and sector level. This also includes increasing transparency of the process to ensure adequate accountability. The entire project cycle should be strengthened, including the public procurement system. The formulation of investment programs and the selection of individual projects must be set within a broad framework that extends beyond individual project analysis, including sector strategies and government priorities. In addition, planning, design, and implementation should be based upon appropriate construction norms that increase resilience against natural hazards and the effects of climate change. Robust project preparation should be made a priority and sector ministries need to acquire the capacity to commission, supervise, and review project studies. A strengthened appraisal system, preferably aligned with a government-wide M&E system, is also needed for the acceleration of project implementation, including the effective use of socioeconomic and economic analyses to guide project preparation and selection, including considerations of alternative project designs. The PIM self-assessments are a useful entry-point to start strengthening public investment management efficiency. Improved infrastructure development can also gain of the large experience on PPPs available internationally (Box 15).

Box 15: Understanding recent experiences of PPPs in Mauritius to improve future interventions

The Government of Mauritius has repeatedly announced its willingness to use Public-Private Partnerships (PPPs) for several major projects, yet these statements have not translated into contracts other than independent power producer (IPP) projects in the energy sector. There is a broad recognition that PPPs should be considered an option for satisfying Mauritius' needs regarding public infrastructure and public service delivery. PPPs, being focused on outputs and results, are a great opportunity for the private sector to help public authorities in translating policy options into investment projects and in pricing alternative policy options. Global experience shows that a focus on efficient delivery of public service creates room for reducing fiscal tension and creating fiscal space, but that too much focus on the “creation of fiscal space” tends to jeopardize efficiency, fiscal sustainability, and ultimately reduce fiscal space.

In order to better design a PPP policy for faster growth, Mauritius should learn from its past experience with infrastructure and state-owned enterprises. Recent PPP attempts should be reviewed to improve new PPPs. A new public-sector understanding of the private sector must be developed to create a new “PPP image” dissociated from previous unsuccessful PPP projects. Some areas on which to focus:

Improved PPP institutional capacity. Mauritius benefits from the existence of a PPP-compatible institutional framework, with a PPP Law and some regulations. Improvements should come from added institutional capacity of the government to deal with PPPs. Capacity, in this context, means the ability to understand private sector motivations, to define the project and design a feasible PPP mechanism, and to coordinate public sector entities in a way that allows for effective long-term management of the contractual relationship.

Additional clarification about partners’ functions. The public sector should be in charge of defining the intended outputs and performance levels, and subsequently monitoring performance, helping to obtain all needed public-sector decisions related to the projects. The private partner would be in charge of managerial decisions, namely on investment and on human resources (including appointing managers and deciding on staffing levels and composition). Public authorities need to be prepared to accept minority shareholding and release control over operational matters, focusing instead on outputs and results. This may also require providing an enabling environment for skill re-balancing, often associated with planned down-sizing of the labor force and right-sizing in relation to technological improvements to raise productivity.

Good project assessment and selection. Competition during tender, as well as efficiency during project implementation, depends on a proper and clear definition of the project and its goals, and on adequate assessment of costs, benefits, and risks (actively involving the several government departments related to public investment, from the line ministry to the finance ministry). Projects should be assessed in the context of the investment plan, considering spillovers from/to other projects (e.g. when demand diversion is a possibility), with a credible timeline and affordability. A robust project assessment process would clarify government expectations, add credibility to government projects, and avoid changes in project scope during the tender process.

Reinforcing procurement capacity. Several characteristics of the project (e.g. the ability to define the intended outputs and to measure the actual outputs, the pace of technological change and related obsolescence, the impact of possible policy changes) do constrain the range of procurement modes. PPP contracts do create explicit (e.g. force majeure cases) and implicit contingent liabilities that call for careful assessment of the costs and benefits of the project for the society. Therefore, the capacity of public administration for managing a project and its contracts is also relevant.

Understanding private sector motivation and behavior. The PPP contract needs to establish a real “business” out of serving public needs, mitigating and optimally allocating to the parties the risks of delivering the project. If rewards correspond to the risks, and the public sector establishes a clear framework for contract and fiscal management, then private entities (investors and financiers) will bid for the contract. However, the government needs to create an environment conducive for that “business” to arise. When that is not the case, namely when policy options (for instance on jobs, or on innovation) diverge from efficient management (and so require policy relaxation or adequate consideration in the design of the PPP business model) additional reward may be required. Also, the absence of a proper business definition may attract rent-seekers that bid to get contracts and then push for opportunistic renegotiation.

Mauritius enjoys an advantage not common to many other countries: a large financial sector, potentially able to finance the infrastructure needs of the country and a private sector able to carry out the due diligence that is so relevant of the PPP process. Moving forward, this will need to be matched with a new PPP approach that also carefully addresses fiscal costs and risks.

191. The budget process should be strengthened to improve allocative and operational efficiency, identify areas where efficiency can be raised, and upgrade reporting. Despite the significant progress made in implementation of Programme Based Budgeting (PBB) since 2008/9, the government has reverted to traditional input-based budgeting from the 2015 budget. The PBB shifted budgeting from traditional input-based annual programming to a strategic performance-oriented multiannual budget exercise and this translated into an improvement across many indicators in the 2011 PEFA assessment ([Figure 144](#) & [Figure 145](#)). The restored budget approach reverts to appropriations being done by vote of expenditure – department/division. In addition, the budget (now) only presents key outputs for the current budget year that are much less than the detailed 3 year performance information – outcome, efficiency and outcome indicators – provided under the PBB approach. The new approach limits the ability of the government to allocate resources to priority policy objectives and also limits the performance information presented to the public and National Assembly for accountability. This moves away from good practices implemented by other peer countries to enhance allocative and operational efficiency of public resources. Moving forward, the government could use the upcoming PEFA assessment to identify areas of improvement especially those in strategic planning and credibility of budget. To enhance the credibility of the performance information in the government annual report, the government should subject such information to audit by the Director of Audit. While procurement systems focus on compliance, there is a need to strengthen the planning functions and monitor results against spending. The current financial statements include minimal information relating to public assets and liabilities, limiting the government’s accountability. Additionally, accrual-based accounting standards should be adopted in preparing financial statements and enshrined in law with improved provisions for fiscal responsibility, fiscal risk management and government accountability. Greater parliamentary oversight, e.g. through the Public Accounts Committee, would also be needed.

192. Improved M&E would better align national development objectives to public sector service delivery. Developing a well sequenced, actionable, and budgeted strategy for implementing and tracking select national priorities can be introduced under a national development plan or the budget speech. Strong political leadership and technical expertise will be needed to move away from a culture of compliance to a culture of learning and improvement

to enhance government efficiency. This requires a better link between strategic priorities and strategic planning, performance-based budgeting, and performance management. Both monitoring and evaluation tools need to be strengthened to ensure the most effective monitoring of government goals, policies, and projects. Statistical capacity and oversight mechanisms also need further strengthening for the utilization of M&E findings in policy-making and implementation.

193. The civil service needs to be strengthened to focus on delivering results. The civil service in Mauritius fares relatively well in regional terms and there have been recent public sector performance modernization efforts including Citizen Charters, Quality Management Frameworks, and Public Service Awards. However, Mauritius risks falling behind more reform-oriented peer countries in terms of civil service performance. The civil service is still structured in a traditional way, with little reform momentum. Senior management lacks the authority and flexibility to manage human resources effectively. These constraints translate into high turnover rates, difficulties in retaining technical specialists, lengthy recruitment processes, and insufficient multi-year human resource planning. As a result, individual performance may drift. Capacity constraints at medium- and lower levels of the administration also negatively impact greater responsiveness to citizens' needs. Some scarce skills may be hard to attract and retain within the public sector and mobility between the private and public sector is limited. Efforts to strengthen meritocracy are only nascent. There is a limited amount of key data available on the civil service, which makes the management, monitoring, and performance of civil servants difficult. Reform momentum needs to be invigorated to identify and implement areas for improved performance and accountability and become more focused on delivering key results across sectors. A more direct link between governmental goals, departmental performance management systems and the program objectives is needed to hold officers and senior management more accountable. A greater performance focus and enhanced used of e-government tools would help to set free a greater potential for innovation, enhance civil service accountability, transparency and efficiency and make service-delivery faster, generate economies of scale, and could provide greater service-options for citizens. Many countries have implemented many of the "second-generation" reforms presented above successfully (Box 16).

Box 16: Examples of second generation public sector reforms in other countries

Budget transparency to raise budget performance. South Korea provides the public with substantial information on the central government's budget during the year to hold government accountable for management of the public's money. The reform towards transparency in South Korea included several steps. In 2000, the government established the Center for Public Investment Management at the Korea Development Institute to conduct feasibility studies; all budgetary projects have to be reviewed and approved by the center. Further, in 2004, the Korean government launched a budgetary initiative called the "Three plus One Reform." The reform included the introduction of (i) National Fiscal Management Plan, an annual fiscal plan developed in an iterative manner with broad participation by civil society and experts; (ii) Top-Down Budgeting that decentralizes the budget process and delegates responsibilities from the central budget agency to individual ministries; (iii) Performance Management system that introduces monitoring and evaluation measures as part of the budget process; and (iv) Digital Budget and Accounting System that enables an accurate analysis of the fiscal data and information, providing policymakers with real time support for policy formulation.

Public Investment Management (PIM) Systems to develop cost-effective infrastructure. Country efforts to "invest in the investment process" can play a key role in raising the returns on public and private investment and in ensuring that the scaled-up investment reaps the required growth dividends, while maintaining fiscal and debt sustainability. Some of the most effective PIM systems are in Chile, Ireland, Korea, and the UK. The case of Chile is worth noting, with very advanced PIM capability evidencing that developing countries can build robust investment systems.

Government-wide Performance Monitoring and Evaluation Systems to improve policy-making. Developing effective government-wide performance monitoring and evaluation (M&E) systems requires strong linkages across the performance value chain. Strategies to develop an M&E system vary depending on a country's institutional architecture, results-focus, priority for measuring results and on the scope and pace of its performance management reform objectives. Some countries have followed an incremental method for developing indicators at strategically selected programs/sectors (for example, Canada, the UK, Colombia and Chile), while others have taken a comprehensive "big bang" approach by defining indicators for all existing programs and sectors at once (for example, Mexico and Korea). Countries need to continuously improve the quality of the indicators to ensure that they can meaningfully inform government processes. Chile is internationally regarded as a successful example of how to put into place an M&E system that has an impact on policy-making and implementation. Chilean M&E tools are the product of both cross-national lesson drawing, and national policy learning experiences. The main M&E tools are centrally coordinated by the Ministry of Finance's Budget Office and promote the utilization of M&E information in government decision-making processes, particularly those related to the budget.

194. Improved civil society participation and citizen engagement would further raise the agenda for accountability and service delivery. Mechanisms for strengthening transparency and anti-corruption could include an improved legal framework and better government information detailing conflicts of interest and published asset declaration mechanisms. Participatory tools, such as third-party monitoring or procurement watch in the infrastructure sectors could bring in a user perspective and enhance transparency and accountability. This could be reinforced by effective access to information policy. Other mechanisms would encourage more regular participation of users and citizens in the form of feedback on the quality and efficiency of public services. For example, generating empirical, qualitative data on citizens perceptions on

service-delivery could be triangulated with more performance-based and budget data, e.g. from the social sectors. Also, a robust parliamentary review of budget implementation would enhance government accountability and foster public dialogue on government policies, priorities, and results. This may require a revision of the mandate and resources for the Public Accounts Committee for reviewing the audited accounts. On the media side, this could include support for investigative journalism.

KNOWLEDGE GAPS: Adapting international good practices to local realities

While the government is aware of many international goods practices and many of them have been formally implemented in Mauritius (i.e. PBB, PIM, procurement) results are not always fully realized. This calls for a better understanding of the factors that may constrain the implementation of these practices in Mauritius and identify the main bottlenecks to accelerate the reforms and improve service delivery. This is important not only for on-going reforms but also for the upcoming areas where improvement will be required should the country want to reach high income status, including improved regulation, more accountable civil service, better citizens oversight on service delivery, among others.

Table 4: Main challenges identified for aligning resources and priorities: sustaining development

Issue	Impact on twin goals
<i>Unsustainable infrastructure policies</i>	Current infrastructure policies in water, transport and electricity are unsustainable and unable to address growing bottlenecks. In the water sector, inadequate sector and SOE governance, financing, and policies will make it difficult to deliver reliable water services. The electricity sector will require improvements in its planning capacity to accelerate growth of installed capacity. In the transport sector, a clear strategy to control demand, improve public transportation, and maintain assets is also needed.
<i>Limited public revenues</i>	Mauritius' priorities in terms of human capital and infrastructure will require a combination of efficiency gains, sustained policy reforms, and additional resources. With grants and trade taxes diminishing, there is scope to maintain a business friendly tax system that is further diversified, environmentally friendly, and aligns social contributions with benefits.
<i>Inefficiency of parastatals</i>	Parastatals absorb too many resources and often operate at subpar efficiency because of inadequate governance. Government intervention in the economy needs to be streamlined and the efficiency of SOEs substantially improved.
<i>Growing health and pension costs</i>	The aging population and growing health costs will present serious challenges to the sustainability of current pension policies in the long term. Absent reforms, the burden of the basic retirement pension will grow while the contributory scheme will reduce benefits. A revision of these policies should start sooner rather than later to facilitate a smooth adjustment.
<i>Limited use of evidence-based M&E</i>	Policymaking is often too focused on the short-term and substantial new programs and policies are announced every year. However, in a context of limited evidence to formulate policies and evaluate them, policy makers cannot assess whether they achieve their objectives or corrections are needed. As a result, wastage remains in the budget, which undermines public sector efficiency and opportunities to fund new priorities.
<i>Limited and inadequate public investment</i>	Removing infrastructure bottlenecks will not only help overcome supply-side constraints but also accelerate economic growth and employment creation in the short term. Institutions should be reinforced to raise the efficiency of public investment, including a more strategic selection of projects and a better-quality

	implementation process. Given these large needs, the framework for public private partnerships should be revamped to attract funding and raise operational efficiency.
<i>Insufficient regional cooperation to protect natural resources</i>	Emerging opportunities, such as the ocean economy, may drive economic diversification and employment creation. Yet, despite a large Exclusive Economic Zone, regional collaboration remains key in order to protect natural resources and exploit economies of scale for the region at large.
<i>Exposure to natural hazards and climate change</i>	Mauritius is extremely vulnerable to natural hazards, and this will increase as a result of climate change. The potential impact in terms of sustaining economic growth is very high and the country needs to develop a proper mix of capacities, shared between sectors, institutions and the civil society, for risk identification, risk reduction (prevention, planning, and design), preparedness (early warning systems), risk financing and rapid recovery. The timeline is uncertain but the overall impact undeniable, therefore continuous work is required to ensure the country is well prepared when affected by natural hazards.

Chapter 5. Summary of the challenges

195. This chapter will suggest priorities based on the opportunities and challenges discussed in this paper. The goal is to identify those interventions that will have the biggest impact in accelerating Mauritius's progress toward the goals of poverty eradication and improving the welfare of the less well off. The analysis presented in this note shows that Mauritius' economic and social model has succeed in bringing the country to the ranks of upper middle income countries, ensuring shared prosperity and reducing poverty significantly. Yet, the existing model is showing signs of reaching its limits, raising income disparities and preventing the country from reaching high income status. Therefore, at the heart of the challenge facing Mauritius is the need for a new growth model that is knowledge-intensive and supported by strengthened skills.

196. As chapters 2-4 of this note describe in detail, Mauritius faces a broad range of obstacles to achieving the transition to this new growth model, which undermines efforts toward eliminating poverty and ensuring that the middle class retains its status. Table 5 summarizes the 18 challenges identified in chapters 2-4 of this note and presented in tables 1, 2 and 4. They are organized following the main chapters around three thematic issues: (i) boosting competitiveness and moving from an industrial policy to one of innovation; (ii) improving equity in public service delivery to ensure employment opportunities for all; and (iii) aligning resources and priorities to sustain development.

Table 5: Summary of main issues identified

Thematic issues	Broad Issues identified
Boosting competitiveness: moving from industrial policy to innovation policy	<ol style="list-style-type: none">1. Revisit industrial policy for efficient allocation of resources toward higher value-added sectors2. Remove sector-specific constraints to increase domestic investment and FDI3. Revise policies to spur innovation, FDI and transfer of know-how4. Support SME development as a driver for inclusive economic growth (jobs, exports, innovation)5. Raise the quality and availability of skills6. Remove constraints in trade facilitation and connectivity, in particular in port management and ICT
Improving equity in public service delivery: ensuring employment opportunities for all	<ol style="list-style-type: none">7. Improve labor market institutions to align wages to productivity and eliminate gender gaps8. Reform the education system to reduce inequity of education outcomes and boost quality of education9. Refocus health expenditure on growing health patterns (i.e. NCDs)10. Raise efficiency of social protection system to reduce poverty and inequality, while promoting labor re-entry

Thematic issues	Broad Issues identified
Aligning resources and priorities: sustaining development	11. Revisit unsustainable infrastructure policies in water, transport and electricity 12. Increase public revenues to finance new priorities (i.e. education) 13. Increase fiscal space by raising efficiency of parastatals 14. Reexamine health and pension policies to cope with growing costs of aging population 15. Ingrain evidence-based and M&E policies to raise public sector efficiency 16. Revise public investment and PPP policies to improve public investment leverage and efficiency 17. Develop regional approach to protect natural resources (i.e. fisheries stock) in line with future industry development (e.g. ocean economy and tourism) 18. Strengthen policies, institutions and implementation mechanisms to increase resilience against natural hazards and climate change

5.1. Prioritization approach

197. Each of the challenges in Table 5 was assessed to identify the expected results that could be obtained by removing these constraints and the impact on the twin goals of poverty elimination and shared prosperity. In order to define priority interventions, each of the 18 challenges identified in this note was assessed against the following criteria:

- *Impact on goals:* To what degree will the reforms proposed impact the elimination of poverty and ensure a sustainable increase in the welfare of the less well off? The main area assessed in here is the impact that the proposed reform has on raising the income of the poor and the most vulnerable, taking mainly into account prospects for additional employment creation and productivity gains in sectors where the most vulnerable can take advantage of opportunities.
- *Time horizon of impacts:* Over what timeframe will the impact be realized? While the focus of the CPF is a 5 to 7 year period, some of the priority issues will be longer term, as many of the challenges are structural and related to moving the country to a new growth path that will require time to be implemented. Short period is considered when impact of the reforms could be achieved in 1-2 years, medium in 3-5 years and long period beyond 5 years.
- *Preconditions:* To what degree does this issue need to be addressed in order to unlock wider potential in other areas? This criteria assess whether the reform identified would serve as a building block to reforms supported in other areas.
- *Complementarities:* To what degree does the issue have influence across different domains (growth, inequality, sustainability) and/or would magnify the positive impact of addressing other constraints? The assessment scores strong if affects all the three domains, medium if affect two domains and weak if only affects one domain.
- *Evidence-base:* Based on the quality of the evidence, how confident are we in the identification of the issue as a priority? This criterion acknowledges reforms where not enough granularity can be offered and additional analytical work is required to better detail a reform plan.

- *Political capital required:* This criterion assesses the political cost that the intended reform will have on the government. The political cost reflects the fact that some rights, privileges or support is removed from existing beneficiaries as well as the fact that the reform will have substantial redistributive impact. Those rated as high are expected to have strong resistance from the population at large, while those rated as medium are expected to confront strong resistance from strong vested interests. Low rating would signal mild opposition to the reform proposed.

198. **The main criterion for selection of the challenge as a priority is its impact on the twin goals**, mainly associated with the capacity of reforms on these areas to boost employment and raise productivity and income of the bottom 40 percent of the population. The second most relevant criteria is the time horizon for the challenge to impact on the twin goals. Preconditions and complementarities criteria put these challenges in relation to each other and identify areas where there can be multiple impacts. Also, evidence-base denotes areas identified as priority but that can require further analytical work to detail specific recommendations. Finally, each challenge has associated a political cost which will facilitate the presentation of the main priorities in an action plan that builds political capital to support reforms' implementation. Table 6 summarizes the results of the desk prioritization assessment, followed by a description of the challenges identified and how they are assessed against the main criteria selected.

Table 6: Criteria for prioritizing opportunities and constraints

Constraint	Impact on goals		Time horizon of impacts		Pre-condition?	Complementarities		Evidence base	Political capital required						
	small	medium	large	short	medium	long	weak	medium	strong	weak	medium	strong	low	Medium	high
1. Revisit industrial policy for efficient allocation of resources toward higher value-added sectors	Medium			Medium			No	Strong		Medium			Medium		
2. Remove sector specific constraints to increase domestic investment and FDI	Large			Short			No	Medium		Medium			Medium		
3. Revise policies to spur innovation, FDI, and transfer of know-how	Medium			Long			No	Strong		Weak			Low		
4. Support SME development as a driver for inclusive economic growth in jobs, exports, and innovation	Large			Short			No	Strong		Weak			Low		
5. Raise the quality and availability of skills	Large			Short			Yes	Strong		Medium			Low		
6. Remove constraints in trade facilitation and connectivity, in particular in port management and ICT	Large			Medium			Yes	Strong		Strong			High		
7. Improve labor market institutions to align wages to productivity and eliminate gender gaps	Large			Medium			Yes	Strong		Weak			High		
8. Reform the education system to reduce inequity of education outcomes and boost the quality of education	Large			Long			Yes	Strong		Medium			High		
9. Refocus health expenditures on growing health patterns such as NCDs	Small			Long			No	Medium		Strong			Low		
10. Raise the efficiency of the social protection system to reduce poverty and inequality, while promoting labor reentry	Large			Short			Yes	Strong		Strong			High		
11. Revisit unsustainable infrastructure policies in water, transport and electricity	Medium			Medium			Yes	Strong		Strong			Medium		
12. Increase public revenues to finance new priorities (i.e. education)	Medium			Medium			No	Medium		Medium			High		
13. Increase fiscal space by raising the efficiency of parastatals	Medium			Medium			No	Medium		Medium			High		

Constraint	Impact on goals small medium large	Time horizon of impacts short medium long	Pre-condition? yes no	Complementarities weak medium strong	Evidence base weak medium strong	Political capital required low Medium high
14.Reexamine health and pension policies to cope with growing costs due to the aging population	Large	Long	No	Strong	Strong	High
15.Ingrain evidence-based and M&E policies to raise public sector efficiency	Medium	Long	No	Strong	Strong	Low
16.Revise public investment and PPP policies to improve public investment	Medium	Long	No	Medium	Medium	Low
17.Develop a regional approach to protect natural resources such as fisheries stock, in line with future industry development including the ocean economy and tourism	Medium	Medium	No	Medium	Weak	Low
18.Strengthen policies, institutions and implementation mechanisms to increase resilience against natural hazards and climate change	Medium	Medium	No	Strong	Medium	Low

1. *Revisit industrial policy for efficient allocation of resources toward higher value-added sectors:* Cross subsidies and protection measures still support sectors facing strong competition such as textiles, in part to maintain jobs. Yet, this objective is not always fully met and hinders the development of services sectors that often end up subsidizing less efficient sectors. Removing these constraints would serve to reallocate resources and create employment in growing services sectors to compensate for job losses in declining sectors. This would have impact in the medium term, accelerating economic growth, inclusiveness and impacting favorably the sustainability of the economic model. However, government is expected to confront strong resistance from those that benefit most from the current industrial policy. (*Paragraphs 82-84*).
2. *Remove sector specific constraints to increase domestic investment and FDI:* Sector constraints hold back the potential to accelerate investment, attract FDI, and create employment. The constraints range from fragmentation in the agriculture sector, to an unclear legal framework for expanding aquaculture, to limited regional cooperation for the support of tourism. Lifting many of these sector constraints could immediately create a large number of jobs, providing opportunities for the population at large and the most vulnerable and poor specifically. This would favorably affect growth and inclusiveness. Overall, political cost of these reforms would upset some entrenched groups that benefit of the status quo but it is unlikely that they will be rejected by the population at large. (*Paragraphs 105-127, Box 8*).
3. *Revise policies to spur innovation, FDI, and transfer of know-how:* Inadequate intellectual property policies, institutions for R&D, and university and enterprise collaboration hamper the capacity of the economy to absorb new technology and increase the know-how content of FDI. Revamped policies would support economic diversification and promote human capital development. As this requires substantial institutional changes the impact of these reforms would likely only be felt in the long run. Therefore, this may not have direct impact on the most vulnerable in the short term but it would have spillovers on employment creation through acceleration of economic growth. However, to achieve more granularity on the reforms to be implemented would require additional analytical work. Overall, no major opposition is expected to the implementation of reforms in this area as it would have limited redistributive impact. (*Paragraphs 85-89, Box 6*).

4. *Support SME development as a driver for inclusive economic growth in jobs, exports, and innovation:* SMEs represent the majority of businesses in Mauritius but fail to create enough employment or generate enough profits or exports. Part of their challenge may be limited access to finance, as well as inadequate government support in some areas, such as accessing and sustaining exports. Removing these constraints would have immediate impact on employment creation of the most vulnerable, reinforcing inclusive economic growth based on a more sustainable and resilient economic model. Yet, a clear identification of these constraints would require finalization of a new firm census to ensure that targeted support to SMEs responds to adequately identified needs. It is expected that there will be limited political and institutional opposition to measures in support of SMEs as in general the population favors them and the redistributive impact is relatively minor. (*Paragraphs 102-104*).
5. *Raise the quality and availability of skills:* Inadequate skills are holding back the potential of the economy to diversify and increase competitiveness. This also limits the inclusiveness of growth, as a large part of the population cannot acquire these skills through education or training. Supporting the improvement of skills would therefore likely have an immediate impact in accelerating inclusive economic growth and reinforcing resilience of the economy. Furthermore, improved skills would be a prerequisite for many related reforms to succeed as the population would be able to take advantage of opportunities unlocked in a more innovative knowledge economy. This reform is expected to face limited opposition by the population at large, and is favored also by the limited stakeholders that could oppose it. (*Paragraphs 90-91*).
6. *Remove constraints in trade facilitation and connectivity, in particular in port management and ICT:* Expanded capacity in airport, port and telecom infrastructure is undermined by policies that constrain operational efficiency. Further air liberalization could enhance competition, reduce prices, and support growth in some sectors such as tourism, which are intensive in low and semi-skilled labor. Improved port performance would further support the role of Port Louis as a regional transshipment hub, raising the country's competitiveness and opening investment and employment opportunities for an industrial hub around port/ocean activities. Similarly, increased competition in the use of broadband could reduce costs and support the expansion of the ICT sector, which would create substantial semi-skilled and highly skilled jobs, if skills in this area are reinforced. Overall, this would serve to create a large number of jobs in the medium term while building economic resilience. It is expected that political cost of some of these reforms will be high due to opposition by very vocal and powerfully entrenched groups. (*Paragraphs 92-100*).
7. *Improve labor market institutions to align wages to productivity and eliminate gender gaps:* Labor market institutions are raising certain sector wages above labor productivity, undermining competitiveness and the potential for employment creation. Also, these institutions generate severe gender discrimination that hampers the inclusiveness of economic growth. Revising labor market institutions would serve to restore competitiveness and create employment in the medium term, also a precondition for other reforms to succeed and for the economy to become more resilient. Yet, additional analytical work and dialogue will be required to ensure that the revised labor market institutions reflect international good practices and Mauritius' social model. Given the substantial power shift that this may entail and the impact on the population at large, government would likely face strong and vocal resistance. (*Paragraphs 159-166*).
8. *Reform the education system to reduce inequity of education outcomes and boost the quality of education:* The quality of education is not on par with the country's aspirations and outcomes are very unequal, with a large part of the population failing to acquire the

minimum education requirements to be fully productive. As a result, human capital is too low, undermining competitiveness and economic diversification and ingraining intergenerational inequality and poverty. Improving the equity and quality of the education system is a prerequisite for the country to inclusively develop further. Reforms should start immediately as expected results will take a relatively long time to materialize as new cohorts move along the improved educational system. Political cost to reforms in this area can be large, associated with vocal and strong stakeholders as well as a large part of the population that benefits from the positive (although unequal) outcomes of the current education system. (*Paragraphs 141-149, Box 9*).

9. *Refocus health expenditures on growing health patterns such as NCDs:* The health system is burdened by high rates of non-communicable diseases that, combined with aging population, will put intense pressure on the system. Private spending is already very high and the public system will need to realign funding to address emerging diseases, raise efficiency, and ensure adequate complementarity with private spending to ensure that the most vulnerable are adequately cared for. This is expected to have relatively limited impact on the most vulnerable in the short term as the public health system covers the entire population, but the situation will require careful monitoring and incremental reform to ensure that the growing health patterns do not undermine health outcomes of the most vulnerable in the future. Overall, this reform is expected to require limited political capital as it will have relatively small redistributive effects. (*Paragraphs 130-134*).
10. *Raise the efficiency of the social protection system to reduce poverty and inequality, while promoting labor reentry:* Fragmentation in the social protection system undermines its efficiency and its capacity to relieve entrenched poverty in Mauritius. Furthermore, uncoordinated and untargeted programs do not always adequately cover the most vulnerable. A comprehensive review of the social protection system would have a large immediate impact on three aspects. It would improve inclusiveness and tackle poverty by better targeting social assistance, accelerate economic growth by promoting labor reintegration that would compensate for a declining labor force, while avoiding aid dependency and reinforcing the resilience of the economic model. This is expected to have high political cost as it would entail a redistribution of benefits, which are currently broadly distributed across the population, to make them more targeted. (*Paragraphs 152-158*).
11. *Revisit unsustainable infrastructure policies in water, transport and electricity:* Current infrastructure policies are unsustainable and unable to address growing bottlenecks. In the water sector, inadequate sector and SOE governance, financing, and policies will make it difficult to deliver reliable water services. The electricity sector will require improvements in its planning capacity to accelerate growth of installed capacity. In the transport sector, a clear strategy to control demand, improve public transportation, and maintain assets is also needed. Most of the population has access to basic services and therefore improving these policies would not have an immediate impact on poverty. Yet, it would be a prerequisite for removing bottlenecks to further economic growth in the medium term, ensuring a sustainable provision of infrastructure services. These reforms are expected to have a political cost associated with tariff increases (i.e. in water) and pricing mechanisms to manage transport or energy demand. (*Paragraphs 176-194*).
12. *Increase public revenues to finance new priorities such as education:* Mauritius' priorities in terms of human capital and infrastructure will require a combination of efficiency gains, sustained policy reforms, and additional resources. With grants and trade taxes diminishing, there is scope to maintain a business friendly tax system that is further diversified, environmentally friendly, and aligns social contributions with benefits. This will have a moderate direct impact on the most vulnerable and poor but will open avenues

to align public resources to areas that most benefit them in the medium term. While impact on economic growth would likely not be large it would substantially support more inclusive and sustainable public spending. It is expected that this will have large political cost as the population at large would unlikely see favorably any tax increase. (*Paragraphs 168-170, P. 209-210*).

13. *Increase fiscal space by raising the efficiency of parastatals:* Parastatals absorb too many resources and often operate at subpar efficiency because of inadequate governance. Government intervention in the economy needs to be streamlined and the efficiency of SOEs substantially improved. While this would not have direct impact on the most vulnerable in the short term, it would allow targeting resources into emerging priorities that benefit the neediest. It would also serve to accelerate economic growth as SOEs become more efficient. This would likely have a large political cost for entrenched stakeholders given the extensive patronage system associated with existing parastatals. (*Paragraphs 211-215*).
14. *Re-examine health and pension policies to cope with growing costs due to the aging population:* The aging population and growing health costs will present serious challenges to the sustainability of current pension policies in the long term. Absent reforms, the burden of the basic retirement pension will grow while the contributory scheme will reduce benefits. A revision of these policies should start sooner rather than later to facilitate a smooth adjustment. It is not expected that these reforms will have an immediate impact on the most vulnerable or poor but would protect critical benefits in the long term while encouraging private savings required to sustain economic development. These reforms would likely entail high political costs as they would curtail current and/or foreseen benefits for the population at large. (*Paragraphs 204-208, Box 13*).
15. *Ingrain evidence-based M&E policies to raise public sector efficiency:* Policymaking is often too focused on the short-term and substantial new programs and policies are announced every year. However, in a context of limited evidence to formulate policies and evaluate them, policy makers cannot assess whether they achieve their objectives or corrections are needed. As a result, wastage remains in the budget, which undermines public sector efficiency and opportunities to fund new priorities. The impact of improving evidence-based M&E policies would likely be long term as it would require substantial and incremental institutional changes that would need time to produce results. Yet, once operational it would ensure more disciplined, sustainable, and focused public expenditure that would better align resources to the needs of the poor and vulnerable. This reform is unlikely to have any major political cost as it does not remove existing benefits or have redistribution impact. (*Paragraphs 224-227, Box 16*).
16. *Revise public investment and PPP policies to improve public investment:* Removing infrastructure bottlenecks will not only help overcome supply-side constraints but also accelerate economic growth and employment creation in the short term. Institutions should be reinforced to raise the efficiency of the public investment, including a more strategic selection of projects and a better-quality implementation process. Given these large needs, the framework for public private partnerships should be revamped to attract funding and raise operational efficiency. These institutional reforms would likely require some time to raise public sector efficiency and given the relative long time required to prepare some of the required large infrastructure, it would likely have full impact in the long term. Reforms in this area would likely not have major political cost as they does not remove existing benefits or have redistribution impact. (*Paragraph 223, Box 15*).
17. *Develop a regional approach to protect natural resources such as fisheries stock, in line with future industry development including the ocean economy and tourism:* Emerging

opportunities such as the ocean economy may drive economic diversification and employment creation for the population at large. Yet, despite a large Exclusive Economic Zone, regional collaboration remains key in order to protect natural resources and exploit economies of scale for the region. This would also serve to contribute to the sustainability of natural resources in Mauritius and at regional level. This reform is unlikely to have any major political cost as it does not remove existing benefits or have redistribution impact. (*Paragraphs 173-175, Box 11*).

18. *Strengthen policies, institutions and implementation mechanisms to increase resilience against natural hazards and climate change:* Mauritius is extremely vulnerable to natural hazards, and this will increase as a result of climate change. The potential impact in terms of sustaining economic growth is very high and the country needs to develop a proper mix of capacities, shared between sectors, institutions and the civil society, for risk identification, risk reduction (prevention, planning, and design), preparedness (early warning systems), risk financing and rapid recovery. The timeline is uncertain but the overall impact undeniable, therefore continuous work is required to ensure the country is well prepared when affected by natural hazards. This might not have direct implications for the most vulnerable and poor in the short term but would certainly serve to better protect the poor (often the most exposed and vulnerable to natural hazards) in the medium term. This reform is unlikely to have any major political cost as it does not remove existing benefits or have redistribution impact. (*Paragraphs 169-172, Box 10*).

199. **To complement and enrich the desk assessment, consultations were held with key stakeholders**, including internal consultations among the country team, and presentations in Mauritius to government, private sector, civil society, and development partners. The presentations served to outline the main analysis and the logic behind the identification of challenges and priorities. Overall, the consultations underlined broad support for the analysis and priorities identified and reinforced the prioritization process proposed. However, it was suggested that more emphasis should be placed on the need to improve government effectiveness in an incremental and sustained way as well as the need to improve public-private dialogue, which has served so well the country in the past. It was also requested that the prioritization not only serve to identify areas where impact on shared prosperity is larger but also propose a timeline that could help the government to articulate its reform process.

5.2. Prioritization: final results

200. **Mauritius needs a new growth model that is knowledge-intensive and supported by strengthened skills.** The right inputs for this transformation include adequate skills, improved infrastructure and increased investment and know-how. These need to be combined with a conducive environment that provides adequate incentives in terms of labor market institutions, innovation policies, sustainable infrastructure, and public services. The main question that the country faces at this time is: What should come first? Based on the above prioritization process, the SCD aims to balance the relevance of these interventions with a timeline that provides an inclusive and politically feasible path to reach high-income status.

201. **There are substantial political economy constraints to moving forward with the required reforms.** In Mauritius, a strong political system built on years of coalition governments resists major changes from within. Two major risks exist from the political economy point of view. The first risk is to fail to recognize that past policies will not propel the country to a new stage of development. Furthermore, delaying the reforms will put additional pressure on

Mauritius's socially inclusive model, as the middle class struggles and disparities grow. That would set the country on a low and non-inclusive economic growth path that could eventually undermine the social model that forms the fabric of the Mauritius society. The second risk is that implementation of the needed reforms may be captured by the political elite, and the political class may strongly influence business patronage and arbitrage of political capital in many policy decisions. A reinvigoration of the open public dialogue between the private and public sector would serve to limit this risk of political capture.

202. The needed reforms are technically and politically complex and the prioritization also aims to identify a reform path that builds political capital while reforms are implemented. While some immediate relief to the poor and low middle class can be offered, for instance, in the form of social assistance, more sustainable inclusive economic growth will require incremental reforms to boost competitiveness. Yet, many of these reforms would require substantial political capital as they would remove benefits or have substantial distributional effects for the population at large or entrenched vocal and strong stakeholders. The prioritization will therefore seek a reform process that reinforces political capital. This analysis does not take into account technical complexities, assuming that implementation of these reforms could be replicated from experiences elsewhere, and this note presents some good international experiences that can guide the government in certain areas. Also, this analysis does not consider institutional fragmentation or inadequate coordination in implementing these reforms, an issue that could be overcome with adequate external support and determination to achieve clear government goals.

203. Using the set of criteria presented in Table 6, priority interventions are identified based on the potential impact on the twin goals of shared prosperity and elimination of poverty extreme and political cost. For each challenge, impact on the twin goals scored 1 for small rating, 2 for medium rating and 3 for large rating, focusing specifically on generating sustainable income and employment opportunities for the bottom 40 percent of the population. It was also assessed whether the impact would be achieved in the short term (1-2 years), medium term (3-5), or long term (+5 years) beyond the current government mandate. For each reform, a score of political cost was also used, from high cost (-3) to medium cost (-2) and low cost (-1), assuming these reforms are frontloaded in the next 2-3 years. The result was a combined score that was then converted into a color matrix that summarizes the expected results and political costs as follows:

Combined score between impact of the reform and its political cost	High Negative	Medium Negative	Low Negative	Neutral	Low Positive	Medium Positive	High Positive
	-3	-2	-1		+1	+2	+3

204. In the short term, there are areas where quick and positive impact on shared prosperity can be achieved with limited capital cost. Not surprisingly, the government has keenly embraced reforms to support SMEs and skills development as well as removing some sector constraints to favor private investment. As identified above, these measures are broadly accepted by the population at large and could translate into positive impact in a relatively short period of time.

Table 7: Rewards/cost of different challenges

	Short term (1-2 years)	Medium term (3-5 years)	Long term (+5 years)
1. Revisit industrial policy for efficient allocation of resources toward higher value-added sectors	Yellow	Green	Green
2. Remove sector specific constraints to increase domestic investment and FDI	White	Dark Green	Dark Green
3. Revise policies to spur innovation, FDI, and transfer of know-how	Yellow	White	Green
4. Support SME development as a driver for inclusive economic growth in jobs, exports, and innovation	Light Green	Dark Green	Dark Green
5. Raise the quality and availability of skills	Light Green	Dark Green	Dark Green
6. Remove constraints in trade facilitation and connectivity, in particular in port management and ICT	Yellow	Green	Dark Green
7. Improve labor market institutions to align wages to productivity and eliminate gender gaps	Red	Green	Dark Green
8. Reform the education system to reduce inequity of education outcomes and boost the quality of education	Red	Yellow	Dark Green
9. Refocus health expenditures on growing health patterns such as NCDs	Yellow	White	Dark Green
10. Raise the efficiency of the social protection system to reduce poverty and inequality, while promoting labor reentry	Red	Yellow	Dark Green
11. Revisit unsustainable infrastructure policies in water, transport and electricity	Yellow	Light Green	Green
12. Increase public revenues to finance new priorities (i.e. education)	Red	White	Green
13. Increase fiscal space by raising the efficiency of parastatals	Red	Light Green	Green
14. Reexamine health and pension policies to cope with growing costs due to the aging population	Red	Yellow	Dark Green
15. Ingrain evidence-based and M&E policies to raise public sector efficiency	Yellow	White	Dark Green
16. Revise public investment and PPP policies to improve public investment	Yellow	White	Green
17. Develop a regional approach to protect natural resources such as fisheries stock, in line with future industry development including the ocean economy and tourism	Yellow	White	Green
18. Strengthen policies, institutions and implementation mechanisms to increase resilience against natural hazards and climate change	Yellow	Light Green	Dark Green

205. Yet, for these measures to be fully successful and create employment in the short and medium term they need to be complemented by additional and politically costly supply-side reforms. Broadening the range of sector specific constraints removed would help to boost domestic investment and employment creation. More importantly, for reforms on SMEs and skills development to translate into sustainable progress, the government would need to remove constraints in trade facilitation including port management, ICT connectivity, or air access. These reforms would have a significant impact on the potential for exports of services, boosting employment in ICT/BPO, tourism, and trade and absorbing losses in declining sectors such as agriculture and textiles. While the political cost of the latter reforms may be high, the large impact foreseen and the complementarity with measures already announced by the government could translate into a meaningful impact that would be already perceived during the government tenure.

206. A second set of reforms to establish the right incentives to support the transition towards a high-income economy could be done with relatively low political cost. Revisiting industrial policies and improved innovation policies can pay off in the medium term in the form of higher FDI, knowledge transfer, and increased competitiveness if they are implemented in the short term, helping to overcome relatively low political capital cost. Mauritius' development

aspirations will be difficult to achieve and sustain without sustainable policies for transport, electricity, water, and wastewater management. This calls for a concerted effort that tackles overall governance in those sectors, including policies to manage demand, improve governance in utility companies, administer sustainable tariffs, and increase investment to sustain the quality of services for the entire population. Early implementation of these reforms would help to reap their benefits during the government tenure. While reforming labor market institutions may be costly, it would have a large positive impact if combined with the above reforms, helping to set up a more competitive economy.

207. Incremental progress can work towards building a comprehensive Disaster Risk Management and Climate Adaptation Framework to mitigate the impact of future disasters at low political cost. Mauritius remains extremely exposed to natural hazards this will only increase over time as climate change continues. In the immediate term the legislative framework should be further strengthened to create the enabling environment to mainstream risk reduction into sector development, further improvement of the early warning systems, contingency plans, impact assessment methodologies and disaster risk financing strategies. Adequately integrating the sustainable policies of *Maurice Ile durable* will be important to building the resilience of the country. Opportunities to exploit natural resources, from the ocean economy to the tourism industry, call for more concerted regional cooperation to ensure that these resources are sustainably preserved. Limited opposition to these reforms and the positive impact that they can have in the medium term calls for immediate implementation.

208. Delivering on a broad reform program requires the public sector to take a leading role, which can be done in an incremental way. In order to improve public service delivery in education and health, raise the efficiency of public investment, and create a level playing field for private sector investment, the government must adopt a modern public sector approach based on continuous evaluation and strengthened accountability. Moving forward, further progress will require tackling some more politically costly reforms. Fiscal space should be created by increasing public expenditures, eliminating waste, and shifting focus away from non-priority areas such as SOEs so that public services are aligned toward the emerging needs of the country in terms of building human capital and infrastructure. Furthermore, pension and health policies will need to be revisited to cope with growing costs related to the aging population. The earlier these policies are implemented the smoother the impact can be shared among the population, easing resistance to change.

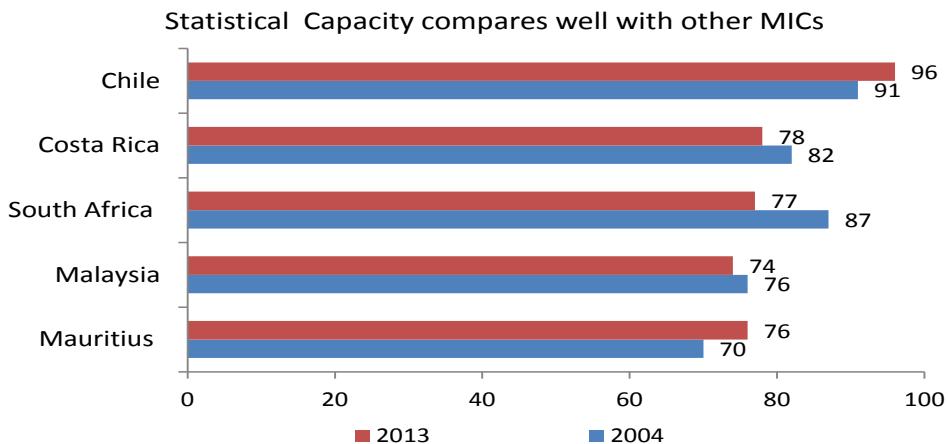
209. Despite high political cost, reforming the social protection system would alleviate poverty, provide safety nets to reduce vulnerabilities, and support active labor market policies, such as training and employment services. With a low base of extreme poverty and substantial amounts already allocated to social protection, reform and modernization of Mauritius's social protection system offers the possibility of virtually eliminating extreme poverty in the medium term. It also may address many other inclusion challenges such as those found in the education and labor markets. Furthermore, with growing inequality inherent to the on-going development process, an improved and well-targeted social protection system can effectively support those falling behind and ease their reintegration into the labor market.

210. Improving education to raise employment productivity is key to making Mauritius a successful high-income economy. Although these efforts have a high political cost, they will likely pay off in the long term. Raising the quality of education and better aligning skills with labor market needs will help Mauritians, especially young Mauritians, to reap the benefits of

economic growth in the form of expanded employment opportunities and increased income. Not only may additional public resources be needed to improve the education system but policy reforms such as implementation of nine years schooling would also serve to achieve more equitable education results so that the population at large contributes to and benefits from growing opportunities. A new education system that raises quality and equity would not only help to push the country to a new development path but also to break the substantial intergenerational vicious poverty cycle that undermines opportunities of much of the bottom 40 percent of the population.

Annex 1: Statistics capacity

The capacity of Statistics Mauritius is good and compares well with other MICs. Mauritius is one of the top performers in terms of statistics in the Africa region. Surveys are regularly prepared on various sector topics and a household survey has been recently finalized, updating information from the 2007 household survey. Bank support is being provided to analyze information from the household survey, exploit panel data labor market information, including building additional institutional capacity. The IMF provides support on National Accounts, with recent focus on improving balance of payment information. The table below provides a brief overview of data availability and quality in the areas that are expected to be critical for the SCD.



Data source: World Bank Bulletin Board of Statistical Capacity

Assessment of data availability and quality in the areas of macroeconomy, fiscal and debt, employment, poverty and social, industry, private sector and education are generally good.

Broad area	Assessment of data availability and quality
Macroeconomy	Generally good and up to date, although some relevant gaps exist (e.g. in accounting for the financial off-shore sector and its impact on the BoP).
Fiscal and debt	Good and annually updated; projections broadly sufficient and reliable.
Employment	Relatively good data but insufficiently exploited. Regular multipurpose household survey but inadequate methodology limits panel data analysis. Household surveys carried out every 5 years (2002, 2007, 2012).
Poverty and social	Relatively good data although administrative data for some social aid programs may be improved. Pension data being put together as part of preparation of a PROST model.
Industry, private sector	Relatively good but sometimes outdated. Industrial census is available as part of the Registrar of Companies Financial database but usefulness of the information is limited as it lacks employment information. Firm-level surveys are prepared every 5 years, and the latest one is relatively outdated as it was prepared before the economic reforms in 2005-2010. Good trade data collected by customs.

Education	Generally good. Mauritius participated in the latest PSIA study which allows for cross country comparison although these data have not yet been analyzed. Overall good administrative data that have been complied as part of Boost until 2012. Information on private education is scarce, however.
Health	Overall good administrative data that have been complied as part of Boost until 2012, although it lacks some data to allow deeper administrative analysis (i.e. cost center budgeting). Latest Health survey was carried out in 2007 and information on private health is scarce.
Environmental	The parameters used to calculate the natural capital depletion are currently limited, as they do not include coastal erosion, fisheries, or marine resources which are key to Mauritius and might also be drivers of wealth depletion.

Annex 2: Recent analytical work

Recent World Bank analytical works are listed below:

Report / document (year)
“Mauritius Inclusiveness of Growth and Shared Prosperity” (P146743) (2014)
Building Analytical Capacity to raise Public Sector Efficiency (P128135) (2013)
Indian Ocean Islands Tourism Review: Mauritius dealing with challenges in the tourism sector in Mauritius (2013)
Mauritius: Civil Service Reform Policy Note (P125280) (2012)
Social Protection Review and Strategy (2010)
PROST model - analysis of pension reforms (2014)
SOEs governance - Public Sector Performance DPL (2013)
SOEs fiscal risks (2014)
Transport sector – MIP and RAMS projects (2013)
Public sector performance - Monitoring and Evaluation (2014)
Public sector performance, IMF –WB reviews of the introduction of the Performance Base Budgeting (2010)
ICT sector - Mauritius Competitiveness DPO (2014)
Tertiary education sector - Mauritius Competitiveness DPO (2014)
Improve regulation and raise value added in the financial sector - Mauritius Competitiveness DPO.
Improvement business and trade environment - Public Sector Performance DPL (2013)
Benchmarking electricity public company, - analysis of the financing of the electricity sector (2013)
Diagnosis and options for private sector participation in the water public company (2012)
Petroleum sector -RAS (2014)
Development of the ocean economy concept (2013)
Develop the Procurement Act and related regulations (2013)
Mauritius Human Opportunity Index (2012)
SPEA/Atkins and Luxconsult (2014) Designing an Asset Management Strategy for the Road Development Authority, funded by the PPIAF;
Antonaropoulos & Associates, together with G. Karavokyris & Partners, Future Water, and Desai and Associates (2014) Land Drainage and Watershed Management Study;
Sweroad (2012) Road Safety Management Capacity Review, a study funded by the Global Road Safety Facility (GRSF);
Luxconsult and PD Naidoo & Assocs. (2011) Feasibility Study, Detailed Design and Preparation of Bidding Documents for Baie du Tombeau Sewerage Project;
Transport Research Laboratory (2011) Implementation of a Road Management System
NIRAS and Mega Designs (2011) Masterplan for the Development of Water Resources in Mauritius
Frischmann Prabhu (India) PVT. LTD and Dagon Eng. (2011) Feasibility Study for an East-West Connector
Arup Sigma Ltd and Architects Studio Ltd (2011) Feasibility Study for an Underpass at Place D’Ames
Castelia (2011) Renewable Energy Plan
Ecorys (2011) Feasibility Study for new runway at Sir Gaetan Duval Airport, Rodrigues

Various analytical works carried out by the Government of Mauritius and by development partners are listed below:

Organization	Report / document (in blue those accessible on –line)
Nathan associates Inc for Commonwealth Sec.	Draft Africa Trade and Investment Strategy for Mauritius
Nathan associates Inc for Commonwealth Sec.	Draft Mauritius International Financial Services
Government of Mauritius	Outline for the Blue print economy
The National Energy Commission	Report of the National Energy Commission: Making the right choice for a sustainable energy future: The emergence of a “green Economy” - 2013
UNDP	Policy and Governance Assessment for Marine and Coastal Resources for the Republic of Mauritius - 2011
ILO	Skills for Green Jobs in Mauritius – 2011 Green jobs in Mauritius. Experiences from a Small Island Developing State – 2012
IMF	Article IV reports: Mauritius: The Drivers of Growth—Can the Past be Extended? Inclusive Growth and the Incidence of Fiscal Policy in Mauritius — Much Progress, But More Could be Done Reforming the Tax System to Promote Environmental Objectives: An Application to Mauritius
UNHABITAT	Mauritius - National Urban Profile -2012
UNDESA/UNDP	National Synthesis Report Rio+20 - 2012
UNDP/MOESD	Disaster Risk Reduction Strategic Framework and Action Plan -2012
UNDP/MOESD	National Climate Change Adaptation Policy Framework: Policy, Strategy, Action Plan, Investment Plan, and Methodology - 2012
UNHABITAT / Ministry of Housing and Lands	Rapid assessment of social housing programs effected in Mauritius since the 1960's - 2012
UNEP	TNA Report IV: Projects Idea Report - Adaptation (Water, Agriculture, Coastal Zone) - 2013
UNEP	TNA Report III Technology Action Plan – Adaptation Water, Agriculture and Coastal Zone - 2013
UNDP/MOFED	The Programme-based budgeting reform in Mauritius. Preconditions, achievements and challenges ahead - 2013
UNDP	Trade Mainstreaming - 2013
UNDP	National Marine Ecosystem Diagnostic Analysis (MEDA) Mauritius - 2013
WHO	Situation Analysis on the social inequities to Health (Social determinants of Health) with focus to NCDs - 2013
UNESCO	UNESCO Country Diagnostic Report -2013
NAS/ UNAIDS	Stigma Index Consultation – 2013
UNFPA	ICPD and Beyond 2014 - 2013
UNDP/MOESD	Environmental Impact Assessment in the Republic of Mauritius: Recommendations for Mainstreaming Climate change into the EIA process – 2013
UNDP/MOESD	Integrating climate Change into Coastal Planning and Management in the Republic of Mauritius: Recommendations for Mainstreaming Climate Change into the current ICZM framework - 2013

UNDP/MEPU	Industrial Energy Audit Reports (10) - 2013
UNDP/UNEP/MoH	National Sound Management of Chemicals Situation Report - 2013
UNDP	The SRM and the Social Aid Reform - 2013
GEF/SGP/RRA	Northern Marine Reserves Rodrigues- Management Plan 2012-1016 – 2013
UNRCO	Youth Leadership Workbook - 2013
UNDP/UNFPA/UNWomen	Rodrigues Gender Policy 2013-2017 - 2013
UNDP/UNFPA/UNWomen	Costed Action Plan to fight against Gender Based Violence (GBV) in Rodrigues - 2013
UNDP	UNDP Gender Briefing Kit - 2013
UNDP/MFA	MDG Report 2013 - 2013
FAO	FAO Bioenergy and Food Security (BEFS) Country Brief Mauritius - 2013
FAO	Reorganization and Strengthening the Governance Framework of Agricultural Services of Ministry of Agro-Industry and Food Security, Republic of Mauritius – 2014
UNDP/ UNEP/ SAICM/GoM	National Priorities for the Sound Management of Chemicals: Phased Plan of Action, Economic Analysis and Mainstreaming Road Map - 2014
UNDP/ UNEP/ SAICM/GoM	National Chemicals Profile of the Republic of Mauritius - 2014

Annex 3: Knowledge gaps

Knowledge gaps have been identified in natural wealth accounting, in adapting in international good practices to local realities, in SMEs constraints and access to finance, in statistic and economic valuation, and viable aquaculture models. For ease of reading, the knowledge gaps are summarized below:

- (i) Natural wealth accounting.** While Mauritius has shown a strong commitment to developing natural wealth accounts, considerable work is still needed to fully incorporate all forms of wealth. So far the parameters used to calculate natural capital depletion are limited, as they do not include coastal erosion, fisheries, or marine resources, which are key to Mauritius and might also be drivers of wealth depletion.
- (ii) Mauritius needs to assess the factors that inhibit the implementation of international good practices to local realities as well as bottlenecks to wrap up with reforms.** While the government is aware of many international good practices and many of them have been formally implemented in Mauritius (i.e. PBB, PIM, procurement), results are not always fully realized. This calls for a better understanding of the factors that may hinder the implementation of these practices in Mauritius. It is also important to identify the main bottlenecks to accelerate the reforms and improve service delivery. This is important not only for the on-going reforms but also for the upcoming areas where improvement will be required should the country want to reach high income status, including improved regulation, more accountable civil service, better citizens oversight on service delivery, among others.
- (iii) SMEs constraints and access to finance.** While there are broad discussions in Mauritius about the challenges that SME face, particularly in terms of access to finance, there have been no comprehensive surveys since 2009 to understand the nature of these challenges. As a new census takes place in 2015, this will be an opportunity to assess SMEs' challenges and the impact that on-going government measures have on supporting them in key areas such as support to export, access to finance and transfer of knowledge, among others.
- (iv) Statistics and economic valuation.** Statistical and economic data collection remains limited, is not achievable for entire value chains, and suffers from data inconsistency among the various sources. Key statistical and analytical methodologies should be defined and implemented to support fisheries, aquaculture management and development planning. Sector regional dimension and economy of scales potential call for a regional approach and the development of a national fisheries information system and dashboard to be integrated into regional ones.
- (v) Viable aquaculture models.** There is a need to identify key constraints, comparative advantages and sound socio-economic and environmental aquaculture models to support sector development.

Annex 4: Map of the Republic of Mauritius

