

Green Jobs and Employment impacts of a Green and Low Carbon Strategy in Mauritius

Policy Brief

This report sets out to quantify the impact of climate policies (as reflected in the NDC strategy) on the social, economic and labour market outcomes. It contributes to answer key questions as regard to societal and employment implications a 40 % reduction would entail. Notably, it will answer several pertinent questions: what is the current number of green jobs? Can Mauritius make the transition to a green/low carbon economy and create jobs at the same time? how do emissions vary in a Business-as-usual scenario versus in an implemented Green and Low Carbon Strategy (GLCS)? What are the relative indirect output and employment impacts? How are GHGs likely to change in a no-action scenario versus one with a Green/Low Carbon Strategy? Most importantly, what are the implications with regard to human resource and skills development?

Answers to these questions are the core objectives of this report. Four sectors which have the potential to reduce GHGs are analysed: Agriculture, Manufacturing Textile, Lodging and Accommodation and Electricity. The analytical framework is based on five pillars: (i) an assessment of green jobs across economic sectors, (ii) the calculation of sectoral GHGs, (iii) assessing the relationship between green jobs and low-carbon transition through inter-industry linkages and economic wide impacts, (iv) conducting a 'What if' analysis, (v) and finally estimating the human resource and skill development requirements. The analysis is based on the 2019 data corresponding to the pre-COVID19 pandemic. However, it assumes a recovery for the period 2021-2023 and growth scenarios up to 2030.

Given the challenging nature of a complete mapping of Green Jobs, this report follows the internationally agreed framework of the System of Environmental Economic Accounting (SEEA) and its definition of Employment in Environmental Goods and Service Sector (EGSS), i.e., employment in resource management and environmental protection activities which are the two categories defined by the SEEA guidelines. The report categorises green jobs in terms of employment in resource management, where the resource efficiency criteria can be clearly identified such as in the Agricultural, Manufacturing Textile, Lodging and Accommodation, and Electricity sector. It also identifies green jobs in environmental protection activities sector in terms of sustainable processes, and several sectors whose practices and output are linked to improving the environment (e.g., as identified in waste management, sustainable fishing, land and ocean recreations, among others). It does not, however, add the Decent Work concept to the analysis, as per 2013 Guidelines of the International Conference of Labour Statisticians (ICLS). While this report recognises that Mauritius is a welfare state which has established a comprehensive system of non-contributory social security as well as national labour legislation, prescribing minimum terms and conditions of employment, which is observed by the majority of establishments, there still exist certain segments of the Labour Market, within the informal sector, whereby the application of the existing legislations proves to be difficult, thus warranting a subsequent report.

Green Jobs

The total direct employment in the Environmental Goods and Service Sector stood at 10.3%-in 2019. The Green Jobs Assessment for Mauritius in 2012 showed that 6.3% of total employment (excluding the public sector) were classified as green, an improvement over the 7 year period of 55.6%.

Green Jobs in the non-sugar and sugar cane agricultural sector, high seas and fish aggregating devices (FAD) fisheries, and aquaculture sectors, represent 16% of employment in the Agricultural sector. In the Manufacturing sector, 20% jobs are classified as green, observed: in sugar milling, partly in textile sector, and fish processing (given the assessment to EU standards). In the Services sector, the Lodging and Accommodation shows 13% of employment as green. Around 24% jobs are classified as Green n the renewable electricity. Remaining activities comprising green jobs include cleaning and landscaping, sewage and refuse disposal, water and waste management, land-based and ocean-based sports and recreation activities and public transport. The number of green jobs, in 2019, was approximately around 60,000.

Inter-industry linkages

An assessment of inter-industry linkages shows that green agriculture tends to produce more jobs as compared to conventional agriculture, mostly due to the higher direct, indirect, and induced output multiplier, linked to the greater use of domestic resources in the supply chain as opposed to chemical imports. The Employment multiplier stands around 3.00 for the green component as compared to 2.686 for the conventional one. This implies that for each 10 million of growth in final demand, 30 jobs are created in green agriculture as compared to 27 jobs in the conventional production system. In contrast, the direct CO₂ eq. emission for the green agriculture is 1.654 as compared to 6.133 for conventional one. In turn, for each Rs10 million growth in final demand, only 16.5 tonnes of CO₂ eq. are emitted in the green production system as compared to 61 tonnes in the conventional counterpart.

The green Textile industries and green Lodging and Accommodation have lower indirect output multipliers (0.482 vs. 0.584 and 0.394 vs. 0.429 respectively) due to resource efficiency which, in turn, leads to higher employment multipliers as efficiency measures require more jobs in service and maintenance. Due to the efficiency gains, the carbon emission per output is significantly lower for the green Manufacturing Textile sector, but slightly lesser in the Lodging and Accommodation.

The output multiplier for renewable source of electricity is slightly higher than that of fossil fuels (0.296 vs. 0.286). The employment multiplier is also higher with 0.140 versus 0.112 for fossil fuel electricity. The direct emission coefficient, as expected, is zero for renewable electricity, however the indirect emission multiplier is 4.296 as compared to 4.198 for fossil fuel due to domestic supply chain linkages.

Green/Low Carbon Strategy Scenario versus Business-as-Usual (no-action) (BAU) Scenario: The BAU Scenario with a GDP growth of 4% leads to a total of 21,831 green jobs by 2030, across the four sectors, thus representing 3.1% of employment in those sectors. The implied indirect jobs (associated solely with the four green sectors) with the BAU Scenario are estimated at 7,278 while the induced employment amounts up to 9,414. The Green/Low Carbon Scenario, in turn, leads to an increase of up to 66,974 in Green Jobs by 2030 (207%). Given the rise in employment across different sectors, this would stand at 9.3% of total employment in the four underlying sectors. The associated indirect and induced jobs stand at 20,907 and 28,989. The GLCS leads to a rise in total employment for the four sectors by 5.6% relatively higher as compared to the BAU; however, a fall in indirect employment is observed. The overall impact on employment, being 2.6% higher than the BAU, is positive.

In the BAU scenario, a full recovery by 2023 and an annual 4% GDP growth onwards will lead to a 31% increase in tCO₂ eq. for Mauritius by 2030, while the Green/Low Carbon Strategy, reflecting the NDC strategy, would lead less CO₂ emission by 12% as compared to BAU situation. Energy consumption in Manufacturing Textile is around 14% lower than BAU. The CO₂ eq. related to the energy sector (processes and transportation) is 40% lower than the BAU, while the overall CO₂ eq. emission is 32% lower than the BAU. These results exclude waste management strategy and transport policy for Mauritius. The transition towards a low carbon economy and the creation of green jobs lead to an absolute decoupling of the CO₂ eq. from GDP growth.

Human resource requirements and skill development

The analysis suggests that skill upgrade is needed for Production and Specialized Services Managers across economic sectors. Different aspects of skill development include with knowledge, expertise and working practices which are geared towards sustainability, efficient reporting, novel marketing approaches (branding, packaging, eco-design), and climate change adaptation and mitigation strategies. At Professional and Technicians level, skills in relation to the manufacturing sector and Lodging and Accommodation include the implementation of ISO14000, Life Cycle Assessments, carbon footprint assessment, energy auditing, eco-friendly processes with minimum environmental impacts. Two main jobs at clerical level occupations that would require green skill upgrade are General and Keyboards Clerks, and Numerical and Material Recording. Craft and Related Trades Workers and Plant and Machinery Operators may need to operate different green and energy efficient machineries and equipment and would also require training and enhanced skills in green practices.

Conclusion

This report concludes that strategies towards greener business practices will accelerate the shift towards a low carbon economy for the period 2022-2030, to reach the 40% emission reduction target. However, a significant number of green jobs is required in main economic sectors in order to spearhead this transition. It is therefore a pre-requisite to prepare the labour force to enable them to match the capital investments and growth in the green sectors of Mauritius. The move towards energy and resource efficient enterprises will require initial training as well as varying skilling and an up-skilling of the personnel at different levels on green practices. Green skills are likely to be essential for different occupational group, ranging from managers to professionals, technicians, to plant and machinery operators, and elementary employees. There is a need for a coordinated approach between public and private sector. A Green Skill Development Plan is the way forward, which must be adopted holistically by relevant stakeholders, including training centres and educational institutions. In addition to skills policies, well designed macro-economic, industrial, enterprise and social protection policies could further maximise employment gains, accelerate the transition, and make it just for all Mauritian men and women.