

NET ZERO FOOTPRINTS 2023 REPORT

1st Edition

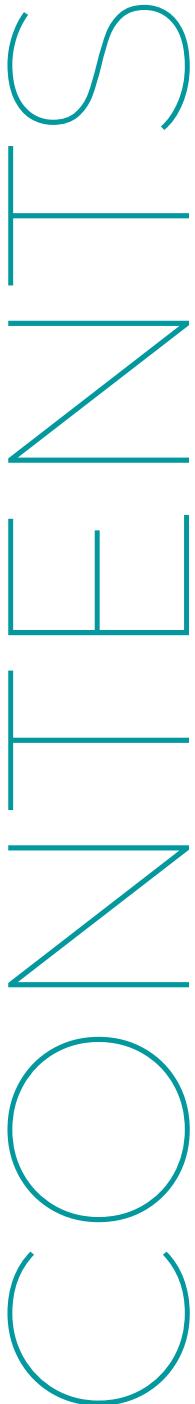


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Prepared By:
R Chamroo

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'The need to reflect on the future of our children as there is no planet B'

The Net Zero Footprints Conference was held in Mauritius on 16th March 2023 with the aim of bringing together experts, policymakers, and stakeholders from various fields to discuss and share ideas on how to achieve net-zero carbon emissions. The conference covered a range of topics related to reducing greenhouse gas emissions, including renewable energy, sustainable transportation, and green buildings. This report will focus on data analysis related to carbon footprints in Mauritius and the perspectives of economic sectors, including banking and finance, manufacturing and distribution, transportation and logistics, and the construction sector. Additionally, the report will address climate change issues prevailing in the African region, affecting each of the above economic sectors, and the need to reflect on the future of our children as there is no planet B.

DATA ANALYSIS ON CARBON FOOTPRINTS IN MAURITIUS

Mauritius, a small island nation in the Indian Ocean, is highly vulnerable to the impacts of climate change. The country has committed to reducing its greenhouse gas emissions by 30% by 2030 and achieving net-zero emissions by 2050.

According to the National Communication Report on Climate Change, 2018, the total greenhouse gas emissions in Mauritius amounted to 4.5 million tonnes of CO₂ equivalent (CO₂e) in 2014. The energy sector accounts for the largest share of emissions (64%), followed by waste (19%), industry (11%), and agriculture (6%).

SUMMARY OF PANEL 1- NET ZERO CLIMATE FINANCE

The banking and finance sector plays a crucial role in financing sustainable development projects and promoting green investments. Mauritius has established a Green Finance Task Force to develop green finance opportunities and encourage investment in renewable energy and energy efficiency.

The financial sector has challenges to face for a greener planet. Since climate is a risk and with risks are associated financial decisions to be taken by enterprises. Actors and experts of the financial sector can provide for a balancing financing method of climate risk versus financial risk. In this context, finance is a critical enabling factor for low carbon emissions as per Paris Agreement. Financial alignment flows with low greenhouse gas (GHG) emissions pathways which remains slow. Therefore, there is a climate financing gap according to IPCC, reflecting a persistent misallocation of global capital and climate-related financial risks remain underestimated by financial institutions and markets. Hence, discussing with actors & experts in the financial sectors can bring about solutions to climate-related financial risks and provide for fruitful ways for balancing global capital/funds equitably among stakeholders.

The Ministry of Environment, Solid Waste Management and Climate Change Mauritius highlighted the National Determined Contributions (NDCs) as a framework to reduce GHG emissions by 30% by 2030 and to implement adaption measures in key impacted sectors such as Energy, Transport, Industry, Agriculture, Waste, Land Use and Forestry. Various schemes such as RE (Recycling Equipment), EV (Electric Vehicle), Manufacturing Sector, have been put in place to incentivize private sector 'to contribute towards achieving a net-zero carbon society by 2070' in line with the SDGs together with government climate action policy to ensure coherence of long-term planning with short-term NDC measures and guide private sector investment.

The panellists emphasised on the different sources of finance, ESG, green bonds, and sustainable value chains with value added processes to instil more of green financing environment in the market as well as the frameworks needed to bring about a structure to the green financing. The Net Zero Emissions concepts in the Banking & Finance Sector is a challenging process especially when net zero is not practically achievable but can be meaningful in achieving by a target as close to net zero through green funds to help develop the energy sector, supply chains management and optimising logistical approaches to cutting down emissions. It was mentioned that it is a \$70 Million revenue loss to Africa for not looking at the supply chains in more holistic approach to green funding. On the other side, there was the highlights of transition financing as being a massive opportunity to a \$12 Trillion yearly revenues by 2030 in 11 value pools namely in carbon management, industrials, waste, hydrogen, water, power, buildings among others.

With the Paris Agreement and Cop 26 & 27 reinforcement, Africa plays a crucial role on the World Market to reduce emissions as close as net zero and to contribute to the well being of the planet by deploying green financing with green technologies to make this part of the world an example and more sustainable to the future of the planet and our children.

PERSPECTIVES OF ECONOMIC SECTORS

SUMMARY OF PANEL 2- NET ZERO TRANSFORMATION AND MANUFACTURING

The manufacturing and distribution sector in Mauritius is primarily focused on textiles, clothing, and sugar production. These industries are energy-intensive and contribute to a significant share of greenhouse gas emissions. However, there is potential for reducing emissions through the adoption of sustainable manufacturing practices, such as using renewable energy and improving energy efficiency.

Industries are the backbone of an economy by providing energy and materials to sustain and grow modern society. Industries contribute to 30% of global GHG emissions through fuel combustion and processes. Hence transformation of industries is critical to a net-zero world. Some of the heavy industries in Mauritius and Africa are cement, steel, chemical, agriculture, transportation, and buildings. The top 3 heavy industries are cement, steel and chemical. These 3 materials are important in the manufacturing sector for making processes functional to have end products.

On the other hand, when the manufacturing sector takes in the 3 heavy industries materials into their processes there are substantial amount of GHG being emitted. A net zero approach to manufacturing processes can render lower emissions through decarbonization to reverse the current emissions trends across the manufacturing and industrial sectors. Actors in the transformation and manufacturing sectors can discuss for a net zero pathways to CO2 emissions with possible solutions for a greener industry approach.

During the manufacturing and transformation panel discussions, it was mentioned that more reporting measures and tools were to be brought onboard to adapt to a more effective and efficient supply chain management by cutting green house gases to continue on the path to net zero by continuing reducing their footprints. The emphasis was laid on circular economy whereby multi sectoral combinations can create a more authentic approach to reducing emissions to as close as net zero with a more cross sectoral mindset by adapting to new technologies such as Artificial Intelligence (AI), new supply chain technologies and testing models to enhance the manufacturing sector with its supply chains. It was also mentioned that we need a clear roadmap to Circular Economy with more hubs, policy as enablers, appropriate financing, and the right skills for the transition. The focus should also be from raw materials at source which go into the processing to eventually have the end products to users as green as possible with less CO2 emissions throughout the supply chain and value chain processes.

PERSPECTIVES OF ECONOMIC SECTORS

SUMMARY OF PANEL 3 - TRANSPORTATION & LOGISTICS SECTOR

The transportation and logistics sector is a significant contributor to greenhouse gas emissions in Mauritius. Road transportation accounts for the majority of emissions in this sector. Promoting sustainable transportation options, such as electric vehicles and public transport systems, can significantly reduce emissions.

The transport and logistics sector accounts for one-third of CO₂ emissions in an economy. Supply chains are coming under greater scrutiny as firms and countries accelerate efforts to decarbonise. With innovation, there is also an increased need to achieve net zero ambitions. Moving towards electric avenues, hydrogen, AI, and other measures can help into reducing the CO₂ emissions. But adopting new technologies in this sector is quite costly or need clear cut plan for processes which can be easily implemented to have an ongoing functionality.

Actors and experts in this sector discussed on the potential ways to cut GHG emissions by designing operational processes and systems in the light of environmental impacts of commerce growth through the use of ecommerce platforms for instance, a simple framework between private and public sector or finding ways to have customer engagement in shrinking their carbon footprints among other measures. Embedding sustainability into corporate governance could help influence the decision-making that flows into the supply chain.

It was mentioned that according to the EPA, transportation is the largest contributor of US greenhouse gas (GHG) emissions at about 29% of total GHG emissions with approximately 1.3 Million people die on roads each year. The time lost, lives lost and pollution of the current system are all the risks of climate change. What matters is learning from it and putting plans into action.

The transportation ecosystem has been undergoing its biggest transformation during the past 100 years with electric vehicles (EVs) self driving, connectivity, product mix. What we do next is critical for our future. It is very hopeful for the future of mobility with design mobility solutions consisting of clean, circular and equitable, multimodal connected solutions, interconnected principles leading us to mobility solutions that are net-zero, connected, recyclable and reusable. It is considered that the transformation will cater to all people everywhere, for all needs and tastes, regardless of socio-economic background.

Furthermore, we had a perspective of the airline industry showcasing how airplanes minimise CO₂ emissions on the tarmac and reducing their footprint on board flights by cutting on plastic materials with recyclables for cutleries and food waste minimisation. It was also mentioned that not only on the tarmac but on taking off and flying on optimal attitudes are measures to reduce fuel emissions for less fuel consumption and less CO₂ emissions. It was also said that new airplanes A340 and A330.

PERSPECTIVES OF ECONOMIC SECTORS

SUMMARY OF PANEL 4 – CONSTRUCTION SECTOR (GREEN CONSTRUCTION)

The construction sector in Mauritius is rapidly growing, and it is essential to ensure that new buildings are designed and constructed using sustainable materials and practices. The adoption of green building standards, such as Leadership in Energy and Environmental Design (LEED) and Building Research Establishment Environmental Assessment Method (BREEAM), can significantly reduce emissions in this sector.

Climate Change Issues in the African Region: The African region is highly vulnerable to the impacts of climate change, including rising sea levels, droughts, floods, and food insecurity. Climate change also poses a significant threat to the economic development of the region, affecting industries such as agriculture, fisheries, and tourism. It is crucial for African nations to prioritize sustainability and adopt sustainable development practices to mitigate the impacts of climate change.

Net zero carbon building is about having buildings constructed with low carbon emissions. In other words, the use of high energy efficiency with renewable energy sources, green building materials into construction phases among other green resources used in the process are needed for a net zero building. Actors and professionals in this field will discuss about the green building concepts in Mauritius and Africa as well as raw materials available and used in making a building green for an equivalent to a Net Zero CO₂ emission.

The main aspects of discussions focused on designing carbon offsetting building, building performance and efficient outlook and the implementation of a sustainable building infrastructure adapting to the current climate situations of the country and its environment. It was mentioned that it is a multidimensional challenge for the construction sector to implement net zero buildings strategies. Nevertheless, by adopting green measures partly if not fully as sustainable materials are not available in tropical countries fully, there must be design optimisation. A reduction in operations energy demand and consumption is needed. Fossil fuels should be eliminated. Provision of onsite renewable energy and storage are required where possible. There must a limitation of upfront embodied carbon. There should be consideration of whole life carbon in conjunction with whole life costing. Performance must be disclosed publicly on an annual basis with a database for future analysis over time.

Urban integration with urban designs must be considered to embody sustainable cities in any of the African cities and same is also emphasised widely in European cities. Hybrid constructions are focused on a more green ecosystem approach rather than the traditional construction system. France was taken as an example where commercial buildings are being converted into green ones with a more hybrid approach for a sustainable ecosystem whereby renewable energy, roof farming and water management systems from rain harvesting or minimising the use of potable water for specific purposes show that it was a proven example to make cities sustainable and also have traditional commercial buildings converted to hybrid buildings for a more green ecological approach with a thorough management of the building resources in a cost effective manner. And this way it was forecasted that by 2030, 50% of the CO₂ emissions could be reduced with such measures since between 2011 and 2020, it was a reconversion strategy which started its evolution with proven positive outcomes.

CONCLUSION

The Net Zero Footprints Conference provided valuable insights into reducing greenhouse gas emissions and achieving net-zero carbon emissions. The data analysis on carbon footprints in Mauritius, Africa and regional countries highlighted the need for sustainable practices in various economic sectors, including banking and finance, manufacturing and distribution, transportation and logistics, and the construction sector. The conference also underscored the urgent actions for a sustainable planet and sustainable future.

The contributions of each stakeholder and speaker onboard have brought some solutions, suggestions, information and data which gave us a scope to progress and work on a base for more progression towards net zero.

The honourable Minister of Environment, Solid Waste Management and Climate Change, Mr Kavidass Ramano and the Department of Environment for National Determined Contributions gave a perspective of the status in Mauritius with facts and figures. Schemes are out there for stakeholders to take benefit from and nurture for bettering their supply chains.

The banking and finance sector is evolving with ESG and introduction of green bonds in the future but we still need to ponder on how the SMEs and small companies can have a share in financing their projects as its limited and tough out there to sustain and be green.

On the manufacturing and transformation panel, discussions were very interesting however we have to bring on board more reporting measures, tools and adapted supply chain management to be more effective and efficient on cutting green house gases to continue on the path to net zero by continuing reducing their footprints.

On the transportation and logistics panel, we had some interesting highlights on how we can commute with the light rail system, with electric vehicles and on planes sustainably with net zero footprints emissions in reduced ways.

On the carbon buildings panel, there are various renewable resources which can be implemented on right from raw materials at source to the end of the supply chain for green building to be constructed.

It was further shared that the 2nd edition of the Net Zero Footprints Conference will be held in Hamburg, Germany in 2024 with actors from different European countries, African countries and other parts of the world to keep up with the momentum of discussions with many more speakers, stakeholders to have more green solutions to make our planet more sustainable, more green for the future of our children.



The Coca-Cola Company
 Bank of Mauritius
 Ministry of Environment, Solid Waste Management and Climate Change Mauritius