

Challenge and Response to Climate Change by Islands of the Indian Ocean

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This article focuses mainly on the island nations of the south Indian Ocean regrouped under the Indian Ocean Islands Commission and composed of five main island nations – Madagascar, Mauritius, Seychelles, Reunion Island and the Comoros Islands. These islands are working together on different issues of common interest and, among others, tourism and the effects of climate change.

At the Climate Change Science Compendium 2009, UN Secretary General Ban Ki-moon stated:

“The science has become more irrevocable than ever: climate change is happening. The evidence is all around us. And unless we act, we will see catastrophic consequences, including rising sea levels, droughts and famine and the loss of up to a third of the world’s plant and animal species.”

Tourism for the five islands states is a major contributor to the economy of each country. It was recorded that nearly 1.8 million tourists visited the islands of the Indian Ocean last year of which 50% went to Mauritius as their main tourist destination.

The mystique associated with the islands of the Indian Ocean that makes them attractive to tourists is the blend of lifestyles, indigenous cultures, unique land formations, flora and fauna, and lagoon and coastal resources. To maintain this mystique, there is an important call to harmonize policies and actions in a responsible manner from social, environmental and economic perspectives – that is according to the concept of Corporate Social Responsibility (CSR) – a responsibility of all stakeholders, public, private and individual.

As a Small Island Developing State (SID), Mauritius, as the other islands of the Indian Ocean, is highly vulnerable to climate change and the resulting sea-level rise. As per records for more than five decades from the Mauritius Meteorological Services there has been on average a temperature increase of about 1.0°C since 1951. The rainfall deficit based on records of the last 100 years is 100mm. Mean sea-level rise has been 2.1cm during the last decade.

These changes have had negative impacts on agriculture, water, fisheries, erosion of beaches, degradation of the reef system and bleaching of corals, loss of wetlands and depletion of biodiversity, among others. According to the Fourth Assessment report of the Intergovernmental Panel on Climate Change (IPCC) in 2007, the detrimental impacts of Climate Change on Small Island Developing States (SIDS) are now established facts.

Based on current trends, the Mauritius Meteorological Services Department has also predicted further projected changes as follows:

- Decrease of 8% in annual rainfall
- Increase in heavy precipitation events with increased risk of flash flooding
- More frequent heat waves in summer
- Milder winters
- Increase in the number of intense, tropical cyclones
- Increase in duration of dry spells, and therefore higher demands for water
- Increase events of high-energy waves (tidal surges) impacting the shores of Mauritius

Considering that Mauritius has limited land and other resources, any further increase in global temperature will immensely exacerbate the well being of the human population. Mauritius is most likely to become a water-stressed and water-scarce country. Agriculture and the marine ecosystem will be negatively impacted upon.

Despite being a low emitter of greenhouse gases (GHG), Mauritius has been facing the impacts of climate change and has been pursuing sustainable development for decades. The Government of Mauritius has for years realized that climate change is a global issue that poses an environmental, economic and social threat that impacts on every facet of government and public life – from finance and planning to water quality and quantity, agriculture, tourism, health, employment and transport. The challenge now is not just an adaptation to the impacts of climate change but also reduction in emissions of GHG. It is a comprehensive re-engagement with core objectives and principles of sustainable development.

At the international level, the Government of Mauritius has ratified United Nations Framework Convention on Climate Change (UNFCCC) in 1992 and the Kyoto Protocol (KP) in 2001, and has been an active participant in negotiation process including works towards “legally binding agreements” in Mexico in 2010 (that is the second commitments period under the Kyoto Protocol and the Bali Action Plan on long-term Cooperative Action).

At the national level, the government announced its vision toward Building Green Mauritius through the “Maurice Ile Durable project” with the overall aim of the project to reduce its reliance on fossil fuels by shifting to local, renewable-energy sources.

In the project’s current five-year program, “Government will participate actively in all efforts of the international community to address issues relating to climate change and sea-level rise.” Moreover, it also indicates that in line with Maurice Ile Durable, “Government will support and promote the interests of Small Island Developing States.” Furthermore, “Government will take steps to accelerate the process of regional integration and will also encourage cross-border initiatives in key sectors such as food security, climate change, infrastructure, ICT, renewable energy and marine resources development.”

The Government of Mauritius is already participating in high-level negotiations as indicated earlier and is making its voice heard through negotiating blocs such as the Alliance of Small Island States (AOSIS), the Africa Group, and the Group of 77 towards reduction of greenhouse gas emissions by developed countries that are part of the UNFCCC.

With regard to the Copenhagen Accord of the 15th Conference of Parties to UNFCCC/KP in Copenhagen in December 2009, the Government of Mauritius has associated itself with the Accord with the following conditions:

- A legally binding agreement should be reached at the 16th Meeting of the Conference of Parties in Cancun.
- A second commitment shall have to be taken by the Parties under the Kyoto Protocol for a determined period beyond 2012.
- The financial assistance of 30 billion US dollars for the period 2010-2012 promised in the Copenhagen Accord should be in the form of grants and not loans.
- The quick-start funding to be made available forthwith and be monitored to ensure that it is not a repackaged fund that should otherwise be granted as traditional overseas development assistance.
- The Copenhagen Green Fund proposed in the Accord should be set up and made operational without any further delay.
- Priority for funding should be given to the most vulnerable countries such as Small Island Developing States (SIDS) and Least Developed Countries (LDC).

The Government of Mauritius is also supporting regional initiatives and programs through the African Ministerial Conference on Environment (AMCEN) and the Commission on Sustainable Development (CSD) among others.

The present and future detrimental impacts of climate change on Small Islands Developing States (SIDS) are now established facts, and the situation seems to be irreversible for a number of SIDS with topographies just above sea level. Some observed impacts of a warming climate include temperature, changing patterns of rainfall, sea-level rise, the continuing coral bleaching, alteration in stratification and circulation patterns of ocean currents and increased frequency of extreme-weather events. The impacts of climate change are all around us.

Some concrete actions taken and implementation progress made by Mauritius for instance can be summarized as follows:

- Close monitoring of climate change and sea-level rise
- Reducing greenhouse gases (GHG) emissions
- Investing in renewable energy
- Sensitization and raising awareness

The research of Zinke et al*, observed that soil erosion, land degradation and modern climate change pose a mounting threat to coastal nations in the western Indian Ocean. A better understanding of the entire ecosystem in the region is required to achieve improved sustainable management of the coastal environment. The vulnerability of the coral reefs

in the region to climate change (increasing sea-surface temperatures) has become increasingly documented by the scientific community. As per Obura (2010), to ensure the long-term viability of coral reefs, the atmospheric-CO₂ level must be reduced significantly.

An aviation perspective is also important, as the Indian Ocean islands are tourist destinations and most tourists to the region travel by air. According to a report by the International Air Transport Association (IATA), aviation is responsible for:

- 2% of global carbon-dioxide (CO₂) emissions
- 12% CO₂ emissions from all transport sources, compared to 74% from road transport
- 3% of the total man-made contribution to climate change

IATA also emphasizes that by 2020, airlines are aiming for at least an additional 25% improvement in fuel efficiency and CO₂ emissions through technology and operations enhancement.

Air Mauritius, being the national carrier of the Republic of Mauritius, is one of the leading airline companies in the region of the Indian Ocean islands. The airline company is conscious that deforestation is a huge contributor to global warming and is contributing in the initiative to save the earth for future generations. Air Mauritius, to be in line with the philosophy of the government, i.e. Maurice Ile Durable, MID, (Sustainable Mauritius) and that of IATA, has developed a green project called “One Take Off, One Tree.” This program is in partnership with the Mauritian Wild Life Foundation (MWF). It helps the foundation to plant a tree for every Air Mauritius flight that takes off.

It's worth noting that Air Mauritius is fully committed, ensuring the Corporate Social Responsibility concept is well understood from the business point of view so as its operations and activities respect the triple-bottom-line approach to corporate responsibility. Air Seychelles and Air Austral, two other airline companies in the region, are also strong advocates for a Corporate Social Responsibility philosophy and approach.

**Zinke J; Grove G; & Brummer G (2010), the Western Indian Ocean marine Science Association (WIOMSA Magazine, No. 4 – Jun 2010.*