



Nationally Determined Contributions to Climate Change in Sri Lanka

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This event report is based on a webcast discussion on “The State of Economic Development in South Asia: **Nationally Determined Contributions to Climate Change in Sri Lanka**” by **Prof. K. W. G. Rekha Nianthi**. The event is organized by the Center for Work and Welfare (CWW) at [IMPRI Impact and Policy Research Institute, New Delhi](#), in collaboration with [Counterview](#) and the [Centre for Development Communication and Studies \(CDECS\)](#).

Upcoming Events





image 28



image 29

Prof. Utpal K De, *Professor, North-Eastern Hill University, Shillong* in his opening remarks illustrated that the Web Policy Talk session on The State of Economic Development in South Asia was initiated by Dr. De where he pointed out the effects of the Covid-19 pandemic, which had several economic impacts on the South Asia region. Upon which, he went on to introduce Dr. K. W. G. Rekha Nianthi and opened the floor for her detailed presentation.

Sri Lanka’s Geographic Location and Climate



image 30

Prof K.W.G.Rekha Nianthi’s, *Professor, Department of Geography, University of Peradeniya, Sri Lanka*, presentation was based on the NDC report of the Ministry of Mahaweli Development and Environment – Sri Lanka – September 2016. Sri Lanka has been increasingly facing various environmental factors that are causing the local climate of Sri Lanka to change. Due to its unique latitudinal position in the Indian Ocean, Sri Lanka receives a large amount of solar radiation but due to the influence of ocean currents, the heat waves keep exchanging.

Interestingly, Sri Lanka also has two monsoon seasons a year, them being ‘Yala’ and ‘Maha’. This allows the Sri Lankan landscape to enjoy a nice tropical climate. Sri Lanka being an island country is also prone to certain natural calamities such as cyclones. For example, in 1978 approximately 1000 lives were lost in the cyclone that hit the country.

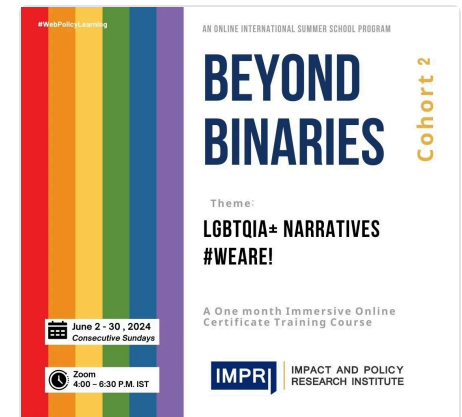
Historical and Future Climate Comparisons



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Sri Lanka is projected to go through a drastic change in its climate in near future. To compare the country's historical and future climate, Dr. Nianthi shared a slide making a thorough side-by-side comparison. Some of the variables of comparison discussed were Temperature Increase, Precipitation, Increase in Intensity of Floods and Droughts, and Rising Sea Levels.

For example, between the years 1961 and 1990, the increase in mean annual temperature in Sri Lanka was 0.2°C. Now the same mean annual temperature is said to rise anywhere between 0.8°C and 2°C by the year 2060. Soon, Sri Lanka is also projected to face an increased severity of floods, drought incidences, and landslides. It is also said to go through an increased frequency and intensity of cyclones on top of the rapidly rising sea level.

Disaster Occurrence in Sri Lanka 1990 -2018

This segment covered the disaster occurrence in Sri Lanka historically from 1990 to 2018. Out of all the disasters recorded, 58% represented Floods alone, followed by Transport Accidents at 18% and Landslides at 8%. Whenever Sri Lanka is hit by heavy monsoons, it is at an increased risk of floods. Whenever the summer monsoons trigger floods, the south-western areas get affected, and when the winter monsoons trigger floods, the north-eastern areas get affected.

Dr. Nianthi also insinuated that the issue of floods in Sri Lanka can be addressed by tackling some **management issues**. While closely looking at the drainage and the river system across Sri Lanka, it can be stated that a lot of them are not regularly cleaned. This causes the clogging of the drainage and increased levels of floods. Thus, this issue can be easily minimized rather than going through various mitigation actions.

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The other calamity that greatly affects Sri Lanka is the Landslides. The Central Highlands of Sri Lanka is prone to high-risk prone areas with regards to landslides. The NBRO (National Building Research Organization) has mapped all the risky areas, but the improper use of land remains an issue of discussion.

Steps Being Taken by the Sri Lankan Government

Despite the country's total greenhouse gas emission is less than 0.1% of the total global emissions, Sri Lanka must face the consequences of Global Warming and Climate Change. Therefore, in order to control and mitigate climate change, the Sri Lankan government has taken various steps on the policy front. Some of them being the National Adaptation Plan for Climate Change Impacts in Sri Lanka 2016-2015, National Climate Change Policy – First National Communication of Climate Change 2000, Second National Communication of Climate Change 2012, and State of the National Climate Change 2010.

Nationally Determined Contributions (NDCs) of Sri Lanka 2020-2030 by The Ministry of Mahaweli Development and Environment in Sri Lanka is the National Focal Point to the United Nations Framework Convention on Climate Change (UNFCCC).

In order to implement the NDCs, there is a need of identifying the existing policy and institutional gaps.



In addition, improvements are required in the area of human technical capacity. And without the necessary financial and technical support, it is a difficult task to implement the NDCs by 2020. The NDCs of Sri Lanka consists of five specific areas. They are 'Migration', 'Adaptation', 'Fairness & Ambition', 'Loss and Damage', and 'Means of Implementation' which includes Finance, Technology Development & Transfer and Capacity Building.

Mitigation Strategies for Green House Gasses Emissions

In case of limiting the Green House Gasses (GHG) Emissions, the focus is on addressing 5 specific sectors including Energy (Electricity Generation), Transport, Industry, Forest and Waste. One of the objectives is to reduce emissions by 20% in the energy sector. Another main objective for the government is to reduce emissions by 10% in other remaining sectors by 2030.

With respect to the energy sector, the electricity generation has realized almost 100% electrification need for the national grid. Sri Lanka's total power generation capacity is 3888 MW of which 23% is comprised of coal, 29% is comprised of oil thermal power and 48 % is from renewable energy sources. The renewable energy distribution includes 74% from hydro, 18% from small hydro, 1.3%, and 0.07% from solar.

The NDCs Targets for Energy Sector and Current Interventions in Renewable Energy Generation

The NDCs target of the energy sector includes the establishment of large-scale wind power plants of 514MW, solar power plants of 115MW, biomass power plants of 105MW, and mini-hydropower plants of 176MW. To encourage Demand



Side Management (DSM) activities, a Presidential Task Force has been appointed for implementing Demand Side Management programs.

There is also a need to encourage **sustainable energy-related policies** to increase the share of renewable energy from the existing percentage of around 50%. It is essential to convert the existing fossil fuel-based power plants to new renewable energy. Sri Lanka has taken a strong initiative to eliminate coal power plants (capacity of 4700 MW) from the national electricity system by 2030.

Current interventions in renewable energy generation include the development of Hydro Power Plants (Uma Oya, Ginganga), Small Hydro Power Plants (overall 500MW estd.), Wind Parks: Mannar Islands is recognized as one of the sites with the best potential place for generating wind power. The northern areas of Sri Lanka have the potential to generate approximately 300MW of wind power energy.

Transport Sector Major Contributor Towards Green House Gasses Emissions

Transport Sector is one of the major GHG emitting sources. The current vehicle fleet of Sri Lanka is approximately 5 million. The use of buses has not increased, indicating a shift from public transport modes to using private vehicles. Although buses are less than 1% of the active vehicle fleet, it contributes approximately 50% of the passenger transport.

The vehicles are mainly powered by imported petroleum oil (crude and refined). About 70% of the petroleum is consumed by the transport sector. Per capita petroleum oil consumption per annum has increased from approximately 50 liters in 1990 and 90 liters in 2000 and 150 liters in 2015. This has resulted in an increased petroleum import expenditure which is adversely affecting Sri Lanka's



economy. Total expenditure for petroleum imports is about 6% of the gross domestic product.

The improvement of **energy efficiency/fuel economy** in the transport sector is a national priority. In addition, GHG emissions in the transport sector can be reduced by lower-carbon transport systems, increasing investment into public transport, walking – cycling infrastructure and by modifying roads, airports, ports in order to minimize travel time and distance.

The NDCs of Transport Sector: 2030

The NDCs of the transport sector include establishment of energy-efficient and environmentally sustainable transport systems by 2030. Another objective is to develop Urban Transport Master Plan to improve the transport system in line with the Megapolis Plan. It is also necessary to upgrade the Fuel Quality Standards to reduce harmful emissions that cause environmental pollution and health hazards. For example: Encourage 95 octane petrol. Besides, there is a push in promoting the use of electric and hybrid automobiles. Additionally, Centralized Traffic Management Systems are to be used in order to reduce traffic congestion.

Disaster Risk Reduction and Economic Development

Sri Lanka targets-Sendai framework to increase economic development and disaster risk reduction. Some of the items of priority are to decrease the annual average disaster mortality by 2030, 50% reduction of direct disaster economic to gross domestic product (GDP), and 75% reduction of disruption of education for children during a disaster. The Mahaweli Development has also proposed the concept of tropical belt to organize a conference for all tropical belt countries for economic development and disaster management.



Acknowledgment: Dhimaan Sarkaar, (MS. Business Analytics – Loyola Marymount University, Los Angeles, CA) is a Research Intern at IMPRI

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