

National Report for the 12th WMO/UNEP Ozone Research Managers Meeting

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Ministry of Environment

Sri Lanka

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1. BACKGROUND

Sri Lanka, island country locating in the Indian Ocean and separated from peninsular India by the Palk Strait. It is located between latitudes 5°55' and 9°51' N and longitudes 79°41' and 81°53' E and has a maximum length of 268 miles (432 km) and a maximum width of 139 miles (224 km). It is proven that the possibility of receiving unhealthy Ultraviolet radiation (UV B or UV C) in the geographical areas close to the equator is high compared to that of other areas in the earth.

The ozone layer plays a crucial role in protecting life on Earth by absorbing most of the sun's harmful ultraviolet (UV) radiation. If there is a slight reduction in the ozone concentration, it could have several detrimental effects, particularly in the tropics and regions like Sri Lanka. Absolutely, monitoring UV radiation levels, column ozone measurements and profile measurements are crucial for understanding and addressing potential threats to human health, ecosystems, and the environment.

Therefore, undertaking projects to measure the influx of UV radiation, column measurement and profile measurement in Sri Lanka and conducting more research on this subject is essential.

Establishing a monitoring station in Sri Lanka not only benefits the country by providing essential data for local planning but also contributes significantly to global scientific knowledge and initiatives aimed at addressing environmental challenges.

2. PROPOSAL

Sri Lanka has no ozone monitoring stations and continue with its interest to establish a monitoring station to gather crucial data on pollution linked with damage to the Earth's ozone layer. It is difficult to carry out proper research concerned to ozone depletion and monitoring activities in Sri Lanka until monitoring station is established.

In view of the above, it is proposed to establish ozone and UV radiation monitoring stations in accordance with the standards of the WMO. It is expected to analyze column measurements of ozone and other gases/variables relevant to ozone loss, profile measurements of ozone and other gases/variables relevant to ozone loss and UV measurement in collaboration of the National

Ozone Unit (NOU), Department of Meteorology of Sri Lanka (MDSL) and National Building Research Organisation (NBRO). Relevant instruments for the stations are planned to be procured for this purpose. Training for the relevant officers and maintenance procedure of the ozone loss and UV radiation including all technical guidance should be included in the proposal. Data collecting, monitoring and reporting can be done through a suitable software in collaboration with NOU, MDSL and NBRO.

3. DATA ANALYSIS AND MODELLING

It is proposed to implement a centralized platform to analyze data which all the equipment is connected via network on establishment of all monitoring stations in the proposed locations. Selecting a suitable statistical modeling software for harmonizing relevant equipment data depends on several factors, including the specific requirements of the data analysis, the nature of the data, and the expertise of the users. Sri Lanka has limited capacity to connect with regional and global atmosphere monitoring networks. NOU, MDSL and NBRO are taking responsibility of modelling and analysis of data.

4. DISSEMINATION OF RESULTS

The collection of data is planned to be published in the relevant local and international websites (World Meteorological Organization). Communicating information about detected peaks or harmful levels of UV radiation and Ozone depleting gases to the general public is a crucial aspect of this project, and it involves both effective public communication and the utilization of the generated data for further research and policymaking.

5. PROJECTS, COLLABORATION, TWINNING AND CAPACITY BUILDING

The National Building Research Organization (NBRO) is continuously monitoring Realtime air quality in 20 locations around the country in collaboration with Meteorological Department of Sri Lanka.

The Meteorological Department of Sri Lanka is measuring temperature, relative humidity, atmosphere pressure wind pattern, wind speed, rain falls, sunshine hours and several measurements by the 24 stations established throughout the island in accordance with the standards of the World Meteorological Organization (WMO).

6. FUTURE PLANS

NOU of Sri Lanka is expected to establish ozone and UV radiation monitoring stations in Sri Lanka. Following are some of the future plans on ozone research and monitoring in Sri Lanka.

- Continuation of training, capacity building and research on Ozone for Sri Lanka

- Monitorization of total ozone and UV radiation.
- Implementation of centralized platform to analyze data which all the equipment is connected via network.
- Effects of increased UV-B on human and animal health, as well as the ecosystems.
- Continuation of awareness campaign on ozone and related issues.
- Increased collaboration with local and international organizations on ozone and related issues.

7. NEEDS AND RECOMMENDATIONS

To facilitate the planned ozone and UV radiation monitoring stations in Sri Lanka, assistance will be needed in the following areas:

- Need technical assistance and funding to establish Ozone and UV radiation monitoring stations to measure ozone column measurements, ozone profile measurements and UV radiation.
- Acquisition of instruments for monitoring ozone column measurements, ozone profile measurements and UV radiation.
- Technical assistance is required for operating and maintaining instruments and ozone and UV radiation monitoring stations.
- Regular calibration of instruments especially in the developing countries to ensure high quality data for research and other purposes.
- Develop programs for the operators of ozone monitoring stations so that they can produce high quality, uniform data across the globe.
- Training of personnel to enhance professional competence in monitoring, data processing and research especially in the developing countries.
- Provision of spare parts and essential consumables.