

# 12<sup>th</sup> WMO/UNEP Ozone Research Managers Meeting Convention

Geneva, Switzerland, 24 to 25 April 2024

## National Report from Costa Rica

### 1. OBSERVATIONAL ACTIVITIES 1

#### 1.1 Column measurements of ozone and other gases/variables relevant to ozone loss

Costa Rica do not have ozone measurements.

#### 1.2 Profile measurements of ozone and other gases/variables relevant to ozone loss

Costa Rica do not have ozone measurements, but we have global solar sensor, PAR, UV-B and UV-E.

#### 1.3 UV measurements

Costa Rica have three UV-E sensors (kipp & zonic) with hourly measurements, located in the next cities: San José, Cartago and Alajuela.

#### 1.5 Calibration activities

Costa Rica do not have technical capacities and infrastructure to calibrate any type of radiometer sensors. By now, financial structure of public administration does not support calibration cost. For it, we adjust an old sensor (expired calibration certificate) with a new sensor, by defining a multiplicative value.

### 2. RESULTS FROM OBSERVATIONS AND ANALYSIS

Our UV measurements have young time series and our data base do not include this data by now. For it, we will start to analyze the data this year.

### 3. THEORY, MODELLING, AND OTHER OZONE RELATED RESEARCH

Costa Rica develop a daily forecast of UV index to the public from application of national study (link below) and climate forecast from Weather Research & Forecasting Model (WRF) for each climate region.

### 4. DISSEMINATION OF RESULTS

#### 4.1 Data reporting

Costa Rica do not have yet.

#### 4.2 Information to the public

In 2014, i worked with MSc. Wright a method to estimate UV index from UV-B sensor data (link below). The method still been used by forecast department in National Meteorological Institute of Costa Rica (IMN) to generate daily maximum UV index.

### 4.3 Relevant scientific papers

#### Medición y cálculo del índice ultravioleta en Costa Rica

## 5. PROJECTS, COLLABORATION, TWINNING AND CAPACITY BUILDING

National Meteorological Institute of Costa Rica accept the invitation from Mexican National Autonomous University (UNAM) to be part of “UV-B solar radiation monitoring in Central America and the Caribbean as an indirect way to gain knowledge on the condition and behavior of the ozone layer” project. It has been developed with other countries of Central America and Caribbean region.

## 6. IMPLEMENTATION OF THE RECOMMENDATIONS OF THE 11<sup>th</sup> OZONE RESEARCH MANAGERS MEETING

This is the first time of Costa Rica been part of this great event, but we have been working on the topic.

- Costa Rica will be part of the Central America and Caribbean regional project to indirect way to monitoring ozone layer, mentioned previous.
- Costa Rica have a good relation with WMO RA-IV representative, because this office is located into IMN building. This help to reduce the gap between Costa Rican Ozone Officer and National Meteorological Institute.

## 7. FUTURE PLANS

- IMN will install UV-E sensors in other cities to increase monitoring to national level.
- IMN will have ozone data from indirect method estimation, with UNAM support.
- IMN will develop an hourly forecast to the public.

## 8. NEEDS AND RECOMMENDATIONS

- Costa Rica need support to calibration activities, like calibration equipment and capacity development.
- Costa Rica need support to have a pyrhelimeter sensor with respective calibration activities.
- Costa Rica need support to develop a multi solar sensor measurements place.
- Costa Rica need support to develop new projects related to ozone and radiation topics.
- Costa Rica need support to develop new product to the public.
- Costa Rica need support to store and work with satellite images.

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