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**ACCESS TO SPACE-BASED DATA: CLIMATE CHANGE**

**Agencia Espacial Mexicana**

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# How developing countries could have access to space-based data to climate change?

- Promote international cooperation to **strengthen early warning systems** using satellite technologies for risk prediction;
- Exchange of knowledge between the agencies in charge of disaster response;
- **Establish laboratories with technology reliable of measuring gas concentrations throughout the atmospheric column;**
- Access to free platforms to improve agricultural, forestry and fish productivity together with the prevention of productive and environmental risks at the regional level;
- It is necessary to generate and disseminate accurate, timely, and reliable satellite images and products to support decision-making related to the disasters;



- A comprehensive perspective is required, one that increases adaptive capacity, strengthens resilience and reduces vulnerability to climate change. In this sense, it is through collaborative and innovative actions that programs and projects that show sustainable and inclusive solutions can be generated.
- Neither agency or state alone can address the enormous need to monitor the Earth's climate. International coordination is therefore essential if we want to be successful in maintaining and expanding an operational Global Climate Observing System (GOCS).
- International coordinating bodies such as the World Meteorological Organization, the United Nations Office for Outer Space Affairs (UNOOSA), the Group on Earth Observations (GEO), the Committee for Earth Observation Satellites (CEOS) already work together, that is, it is everyone's job and for everyone.



## GEONETCast-Americas

- The GNC system receives meteorological and environmental information from NOAA satellites, including GOES 16, which are the latest generation satellites;
- This information will allow decision-making on meteorology and the environment, such as forest fires, disasters caused by natural and anthropogenic phenomena, among others;
- NOAA and AEM have held 2 Workshops in 2016 and 2018 respectively, on the use of GOES-16 satellites and GEONETCast-Americas (GNC) stations.



## GEO Blue Planet

- The main objective of the project is the participation of Mexico in the COAST initiative of the Committee on Earth Observation by Satellite (CEOS).
- Mexico can bring great experience in remote sensing applications to coastal regions, focusing on both land-sea and sea-land connections. Likewise, Mexico would greatly benefit from partnering in the integration of remote sensing in coastal regions, especially since coastal regions are such a critical region for the impacts of climate change.
- This project will be carried out in the Gulf of Mexico and Caribbean Sea region.



### **Mexican Observatory of Climate and Atmospheric Composition (OMECCA)**

A new atmospheric observatory for satellite validation purposes is being established in Mexico, in a natural reserve located in the Yucatán Peninsula. The entire infrastructure is set up as a mobil lab in a container that will be transported to the site, so that operations can start in the 2nd half of 2023.



The observatory will measure greenhouse gases at the surface, complying with WMO standards, as well as total column densities with a high resolution spectrometer that measures direct solar infrared spectra following the TCCON procedures (Total Column Carbon Observing Network). Meteorological and other environmental parameters (PM2.5, ozone) will contribute to the University Network of Atmospheric Observatories (RUOA, <https://www.ruoa.unam.mx/>).



Main objectives include performing carbon cycle studies in a tropical rain forest with limited perturbation, transport of pollution events from biomass burning and regional urban and industrial sources, vegetation health, ecological net productivity, among others. This project is financed by the Mexican Space Agency (AEM) and the National Institute of Ecology and Climate Change (INECC) and the activities are coordinated by the National Autonomous University of Mexico (UNAM).





## Action Plan of the Early Warnings for All

Investments will be made so that all the inhabitants of the Earth are protected by early warning systems for extreme weather events.

The targeted new investments planned will be used to advance the establishment of the four key pillars of multi-hazard early warning systems (MHEWS):

- Knowledge of disaster risks
- Observations and predictions
- Preparation and response
- Dissemination and communication
- Resilience and Adaptation

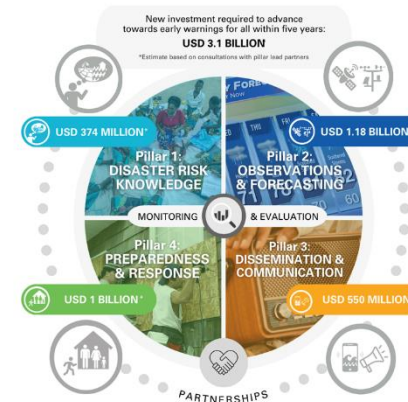


Figure 1: Budget overview for the four Pillars of the Early Warnings for All Initiative

# Which it was the positioning of Mexico in COP27?

**Within the framework of COP27, the main objective of the Government of Mexico is to strengthen the international climate regime with the completion of the Work Program of the Paris Agreement, among other instruments that strengthen the actions of the UNFCCC. Those in charge of providing the follow-up are the Secretary of Foreign Affairs and the Secretary of Environment and Natural Resources.**

## **Priority issues:**

- Increase in the emission reduction goal from 22% to 35% by 2030. Annual mitigation of 4 million tons of carbon dioxide Low carbon transport, which will avoid an annual emission of 30 MtCO<sub>2</sub>
  - Renewable energies for the next 8 years, such as solar, wind, hydroelectric and geothermal energy, with the goal of reaching 40 GW (Gigawatt).
  - Expand financing for the energy transition, address barriers to access financing for development in the different subregions of Latin America and the Caribbean.
  - Eliminate subsidies for fossil fuels.
  - Develop markets to finance investments in decarbonization
  - Reduce methane emissions
  - Establish more than 40 measures in all economic sectors through solutions based on nature, low-carbon transport and industrial regulation and promotion, which will allow a total estimated annual reduction of 88.9 MtCO<sub>2e</sub> by 2030.
  - Work with the United States through the mobilization of financial support and joint efforts to catalyze and incentivize investments that encourage the new deployment and transmission of renewable energy in Mexico.
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**Thank you!**

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