

8th International
Conference on
BIG DATA
& Data Science for Official Statistics

BILBAO 2024

Informing Climate Change and
Sustainable Development Policies
with Integrated Data

BILBAO. SPAIN | **10-14 JUNE 2024** | **#UNBigData2024**



UNITED NATIONS

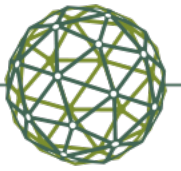
ECLAC

Monitoring Climate Change-related topics in Latin America and the Caribbean

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Content

- State of the art.
- Regional challenges.
- DA Project.
- PRASC Knowledge Base.
- Survey applied to 30 countries in 2023.
- Statistical Conference of the Americas- Climate Change related topics.
- Latin America and the Caribbean VNRs.
- Recommendations and Main Challenges.

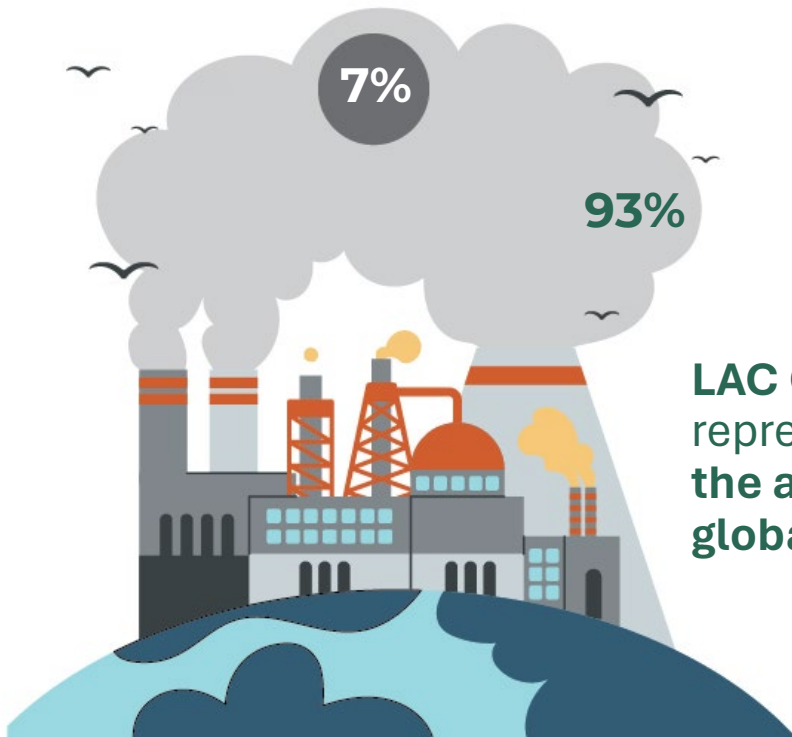
State of the art



The LAC region is in **an asymmetrical position in relation to climate change**

The region has made a historically **very small contribution to climate change**, yet it is **highly vulnerable** to its effects including disasters and its impacts on people, housing and infrastructure.

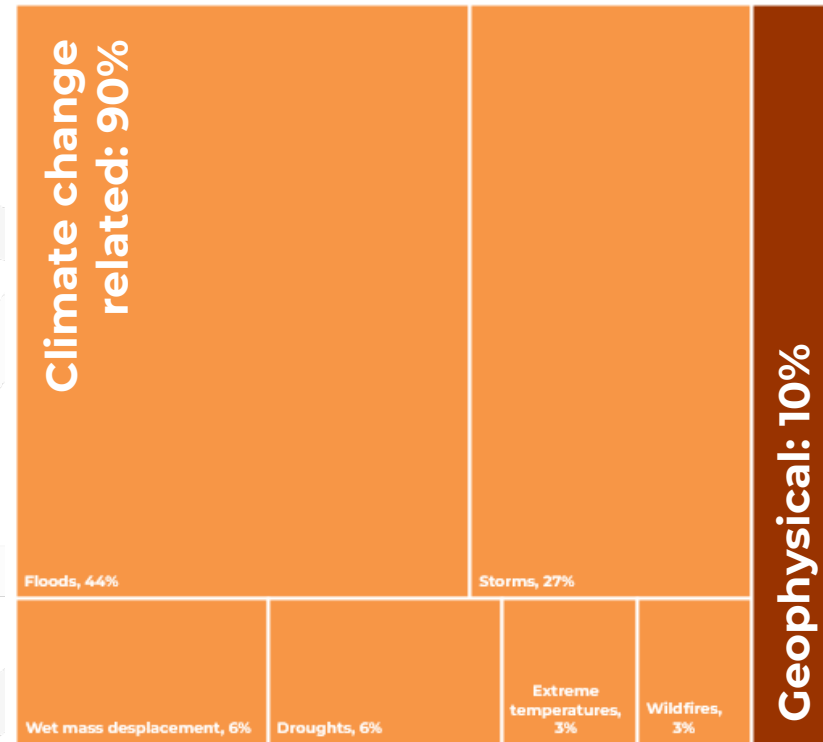
Since 1990....



LAC GHG emissions represent only 7% of the accumulated global emissions.

Greenhouse gas (GHG) emissions in Latin America and the Caribbean and rest of the world (accumulated 1990-2020)

Source: ECLAC, CEPALSTAT, on the basis of World Resources Institute (WRI), CAIT Climate Watch.

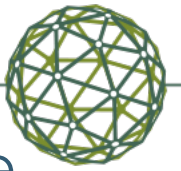


Occurrence of climate change-related and geophysical disasters in the LAC region (accumulated 1990-2023)

Source: ECLAC, CEPALSTAT, on the basis of Centre for Research on the Epidemiology of Disasters (CRED), International Disaster Database (EM-DAT).

90% of disasters in LAC had their origin in meteorological or hydroclimatic phenomena such as droughts, floods and storms.

State of the art



There is an ever-growing **demand** for environment, climate change and disaster statistics , both from **international and national agreements and development plans and policy targets.**



2030 Agenda

Monitoring Framework for the SDGs

50% of the indicators

SENDAI FRAMEWORK

FOR DISASTER RISK REDUCTION 2015-2030

Sendai Framework

100% of the indicators



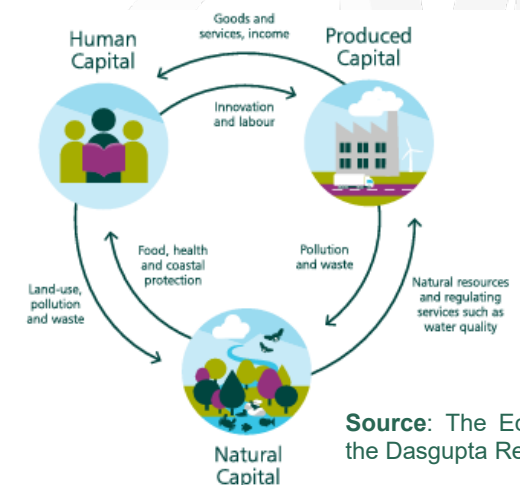
PARIS2015
UN CLIMATE CHANGE CONFERENCE
COP21·CMP11

Paris Agreement

100% of the indicators

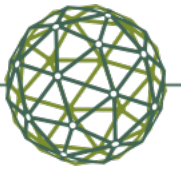
Of the three pillars of sustainable development, the newer and weakest is monitoring/measuring **environment, climate change and disaster dynamic.**

Statistical production of climate change and disaster statistics is **insufficient and heterogenous in the LAC region.**

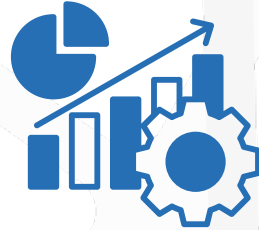


Source: The Economics of Biodiversity, the Dasgupta Review, 2021

Regional challenges



Statistical challenges



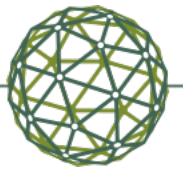
- **Insufficient and/or irregular collection of data within the National Statistical Systems.**
- **Underutilized sources of statistical information** (i.e., remote sensing, geospatial, monitoring stations and administrative records).
- **Methodologies still under development** (to measure some aspects of climate change and adaptation, and disaster risk, impact and resilience).

Institutional challenges



- **Deficient institutionalization and regular budget allocation** in both NSOs and line ministries.
- **Lack of Inter-agency technical capacities and common language** (in all relevant institutions).
- **Insufficient institutionalized regular statistical cooperation** among NSO - Ministry of Environment - Disaster/Emergency, line Ministries and academia.

Regional capacity-building



Since 2016, more than 900 public officials from LAC countries have been trained, without including webinars or online training courses

1. Demand-driven inter-institutional capacity building to LAC countries

In-person workshops

Online training course on ES/CC/D

Remote TA/training on EA/EEA

Quarterly webinars on environment, CC and on SDG/SENDI indicators

Regional Network of ES

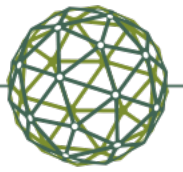
Assessment on the use of Geospatial Technology in NSOs

Support in the consultation and implementation of:

- Global Set of Climate Change Statistics and Indicators
- System of Environmental-Economic Accounting



Regional capacity-building



2. Methodological development.

FDES in Spanish

Methodological Guidance Manual - Environmental Indicators

Environment Statistics Libguide

Damages and Losses (DaLA) Methodology

3. Production of key regional environment indicators.

CEPALSTAT database and geoportal

Regional Climate Change Profile

Statistical News/Studies

Statistical Yearbook

4. Secretariat of a working group of the Statistical Conference of the Americas.



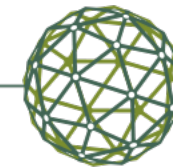
Recommendations to strengthen official environmental statistics systems.

5. Partnership and cooperation with UN and regional organizations and regional coordination through UNGGIM Americas between Official geospatial community and NSOs.

6. Statistical support to LAC countries aiming to improve the measurement, use and dissemination of the SDG indicators.



Regional capacity-building



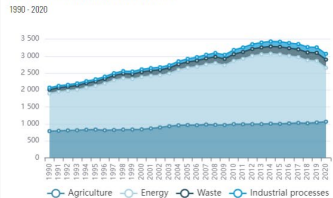
Dissemination of key regional environment indicators (some examples)

Latin America and the Caribbean: Regional Environmental Profile

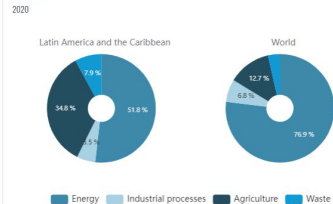
Latin America and the Caribbean: Regional Climate Change Profile

Drivers

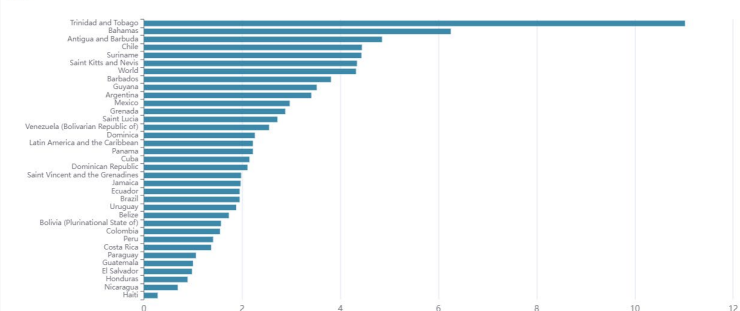
Total Greenhouse gas (GHG) emissions, by sector
(Millions of tonnes of carbon dioxide equivalent (MCO2e))
1990 - 2020



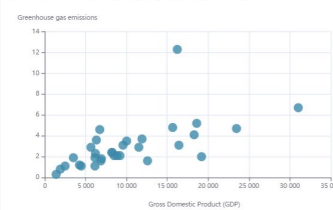
Total Greenhouse gas (GHG) emissions, by sector
(Percentage)
2020



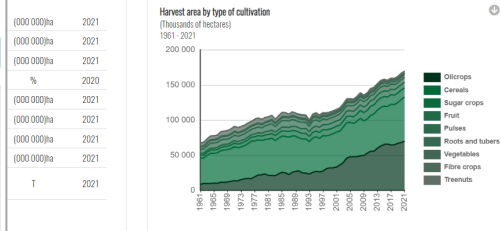
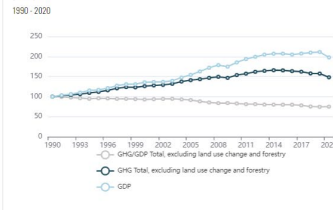
Greenhouse gas (GHG) emissions per capita
(Tonnes of carbon dioxide equivalent (CO2e) per capita)
2020



Ratio of greenhouse gas (GHG) emissions and gross domestic product (GDP), per capita
(Tonnes of carbon dioxide equivalent (CO2e) per capita) / (Dollars per inhabitant)
1990 - 2020

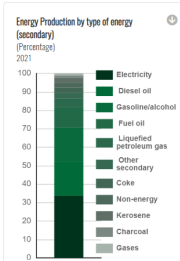
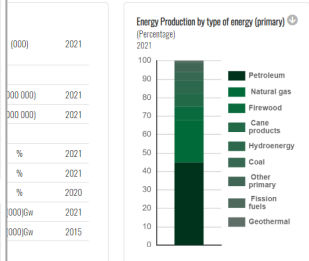


Ratio of greenhouse gas (GHG) emissions, gross domestic product (GDP) and its intensity (GHG/GDP)
(Index)
1990 - 2020



Proportion of terrestrial and marine protected areas

Category	Value	Year
Proportion of terrestrial and marine protected areas	13.3	% 2014
Surface area of Ramsar designated wetlands	70 921	(000)ha 2023
Fish capture production	1 181	(000)t 2021
Aquaculture production	2 509	(000)t 2021
Inland waters	979	(000)t 2021
Sea area	1 529	(000)t 2021



CEPALSTAT GEOPORTAL

United Nations ECLAC Statistics Division CEPALSTAT Español | English

Áreas Protegidas
Cuenta el número de hectáreas de la Conservación del Programa de las Naciones Unidas para el Medio Ambiente (UNEP-WCMC)

- Terrestres
- Terrestres y Marinas
- Marinas

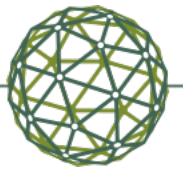
Surface area of Ramsar designated wetlands
Hectares
Years: 2023

- 26 to 5,358,911.8
- 5,358,911.8 to 10,717,797.6
- 10,717,797.6 to 16,076,683.4
- 16,076,683.4 to 21,435,569.2
- 21,435,569.2 to 26,794,465

64.0% Marine fish

Change dimensions, Change classification, View in dashboard, Latest data, Labels, Include name, Include value, Colors, Customize color scheme

Availability of CC and Disasters information



+ Available data



Climate process drivers

Statistics of energy, agriculture, other economic activities and GHG net emissions.



Climate change evidence

Historical data series for precipitation and temperature variation (terrestrial and seas).



Climate change impacts and vulnerability

Data for occurrence and impact of disasters on affected people. Economic losses due to disasters less available. Sea level rise data is less available.

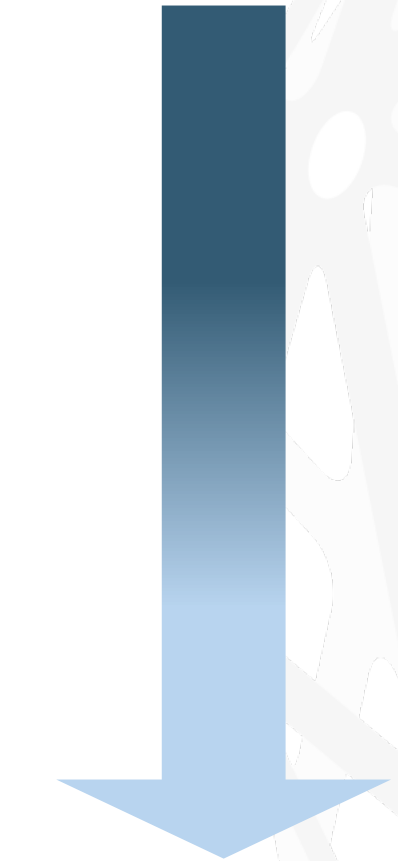
Mitigation

Energy renewability, energy intensity of GDP, forest cover and disaster preparedness data relatively more available.



Adaptation

The least developed and more difficult to capture statistically (spatially specific programs and measures).



- Available data



Caribbean SIDS relevant CC and disasters indicators for evidence-based policies

Objective

Enhance the climate change and disaster risk reduction statistical and institutional capacities of eight (8) target countries in the Caribbean to improve policy coherence in the implementation of the SDGs, the SAMOA Pathway, the Paris Agreement, and the Sendai Framework.

Results

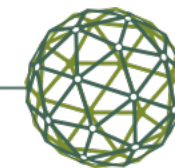
Regional level

- **Strengthened regional capacities** of Caribbean SIDS stakeholders to use the indicators for sustainable evidence-based development policies.
- Produce a **geo-referenced resilience database** of the occurrence and impact of hazardous events and disasters in Caribbean SIDS.

National level

- **Strengthened national statistical and institutional capacities** of Caribbean SIDS to sustainably produce and disseminate relevant internationally agreed climate change and disaster risk reduction indicators.

UN ECLAC
Caribbean
First
Strategy

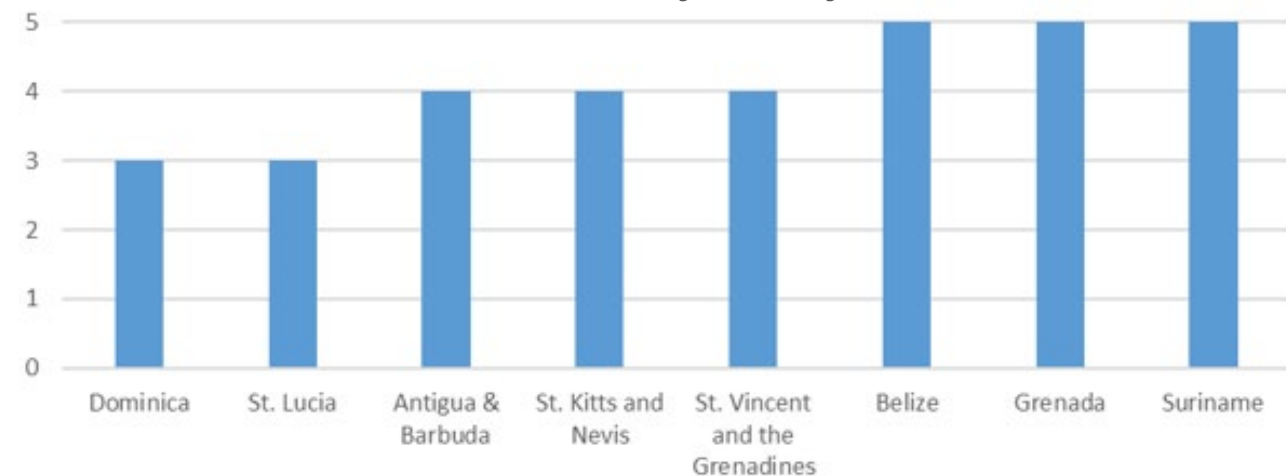


Climate Change and Disaster Statistics

Number of indicators built during the national workshops, disaggregated by area



Indicators built by country

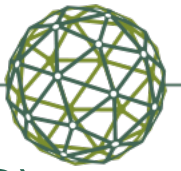


- "Municipal waste collected per capita" (Ind. 156 - adaptation) was the most repeated indicator in the selection of countries (6).
- "Increase in forest area" (Ind. 125 - mitigation), calculated by 3 countries.

33 indicators built in total

Climate change and Disaster Indicators built in the Caribbean Region	
Countries	Built indicators during national workshops
Antigua and Barbuda	Drivers – Ind. 24. Livestock unit per agricultural area
	Vulnerability – Ind. 94. Net energy import as a proportion of total energy supply
	Mitigation – Ind. 110. Renewable energy share in the total final energy consumption
Dominica	Adaptation – Ind. 144. Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type
	Drivers – Ind. 12. Share of fossil fuels in total energy supply
	Adaptation – Ind. 156. Municipal waste collected per capita
	Vulnerability – Ind. 100. Proportion of population living in coastal areas
Saint Lucia	Mitigation – Ind.125. Increase in forest area
	Drivers – Ind. 1. Total green house gas emissions per year
	Impact – Ind. 53. Temperature records
Saint Kitts and Nevis	Adaptation – Ind. 156. Municipal waste collected per capita
	Drivers – Ind. 12. Share of fossil fuels in total energy supply
	Drivers – Ind. 3. Green house gas emissions from land use, land use change and forestry
Saint Vincent and the Grenadines	Mitigation – Ind.125. Increase in forest area
	Adaptation – Ind. 156. Municipal waste collected per capita
	Drivers – Ind. 12. Share of fossil fuels in total energy supply
Suriname	Adaptation – Ind. 156. Municipal waste collected per capita
	Vulnerability – Ind. 100. Proportion of population living in coastal areas
	Mitigation – Ind.125. Increase in forest area
	Drivers – Ind. 1. Total green house gas emissions per year
Grenada	Impact – Ind. 42. Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population
	Vulnerability – Ind.98. Proportion of population using safety managed drinking water services
	Mitigation – Ind.125. Increase in forest area
	Adaptation – Ind.156. Municipal waste collected per capita
Belize	Drivers – Ind.19. Number of fossil fuels driven vehicles per capita
	Impact – Ind. Total rainfall anomaly
	Vulnerability – Ind.90. Ecosystem carbon stocks
Belize	Mitigation – Ind.125. Increase in forest area
	Adaptation – Ind. 156. Municipal waste collected per capita
	Drivers – Ind.10. Total energy production from fossil fuels
	Drivers – Ind.18. Urban population as a proportion of total population
	Impact – Ind.31. Forest area as a proportion of total land area
	Impact – Ind.53. Temperature records
Mitigation – Ind. 109. Production of renewable energy as a proportion of total energy production	

PRASC Knowledge Base



Project for the Regional Advancement of Statistics in the Caribbean (PRASC), comenzó en marzo del 2015 y concluyó sus actividades en septiembre 2023, generando 250 documentos **almacenados** en el **Repositorio Digital CEPAL** y **disponibles** a través de una interfaz especial llamada **PRASC Knowledge Base**.



Project for the Regional Advancement of Statistics in the Caribbean

Categories ▾

Subcategories ▾

Type of documents ▾

Statistical Methods and Processes ▾

Reset search

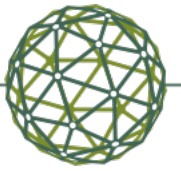
The Project for the Regional Advancement of Statistics in the Caribbean (PRASC)

The Government of Canada funded a statistical capacity-building initiative for the Caribbean region, the Project for the Regional Advancement of Statistics in the Caribbean (PRASC), that ran from March 2015 to September 2023.

This initiative aimed to strengthen the statistical system of the Caribbean in order to improve socio-economic measures and support evidence-based policy making.

Through PRASC, Statistics Canada worked with National Statistical Offices of 14 Caribbean Community (CARICOM) countries and other organizations active in the region by providing training and bilateral assistance to develop robust statistical methods and approaches for use in the region. Resource materials made available through PRASC are shared here.

PRASC Knowledge Base



- Cooperation of ECLAC:
 - Technical coordination of development and implementation (3 months)
 - Coordination of document entry (2 months)
 - Hosting of the 250 PRASC documents
- Documents retrievable by:

Categories ▾

Subcategories ▾

Type of documents ▾

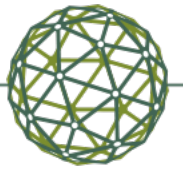
Statistical Methods and Processes ▾

- Communications and Dissemination
- Demographic and Social Statistics
- Economic Statistics
- Organizational Management

- Administrative Data
- Business Survey Methods
- Communications and Dissemination Planning
- Demography
- Geographic Information Systems (GIS)
- Information Management
- Leadership Training
- National Accounts
- Outreach and Advocacy
- Population and Housing Census (PHC)
- Social Survey Method
- Statistical Business Register (SBR)
- Website Administration and Management

- Country Examples
- Presentations and Training
- Reference Documents and Guides
- Tools and Templates

- Frame and Sample Design
- Data Collection
- Instruments (Questionnaire)
- Data Processing
- Estimation
- Data Quality
- Data Analysis
- Confidentiality
- Dissemination
- Planning and Schedules



communication | Categories ▾ Subcategories ▾ Type of documents ▾ Statistical Methods and Processes ▾ Reset search

1

Open
Search

Country Examples

Example: Belize Census **Communication** Plan (2018-08)

 [SIB_Example_Census **Communication** Plan_AUG2018.pdf](#) | 13 pages

Institutions: Statistical Institute of Belize

This is an example of a communications plan for census activities (recruitment, collection and dissemination campaigns) developed in anticipation of the 2020 Population and Housing Census (PHC) round. Note that due to COVID-19, the actual dates of activities differed, however the content provides a good example of a communications plan.

Categories: Communications and Dissemination

Subcategories: Communications and Dissemination Planning

Statistical Methods and Processes: Planning and Schedules

Keywords: Awareness campaign | Data release | Social media | Respondent relations

Related information:

[Open](#) / [Download](#)

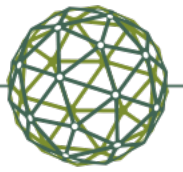
[Example: Belize Census **Communication** Plan - summary](#)

[Example: Belize Publicity and Dissemination Implementation](#)

[Example: Belize Census Campaign Component Calendar](#)

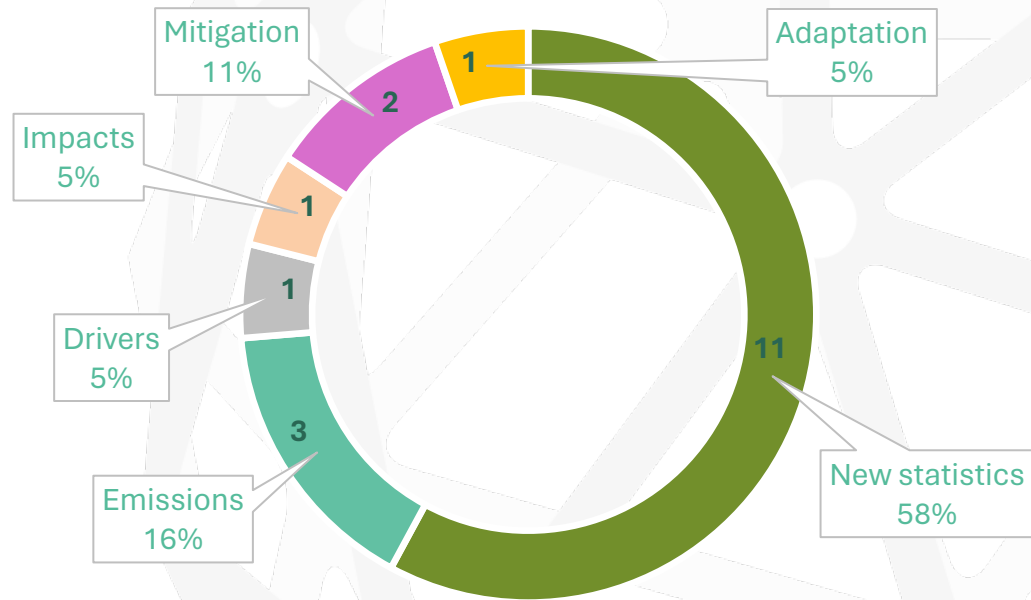
Downloadable Documents

Open search enabled to retrieve records with their documents that can be downloaded.



Main developments in the field of CC

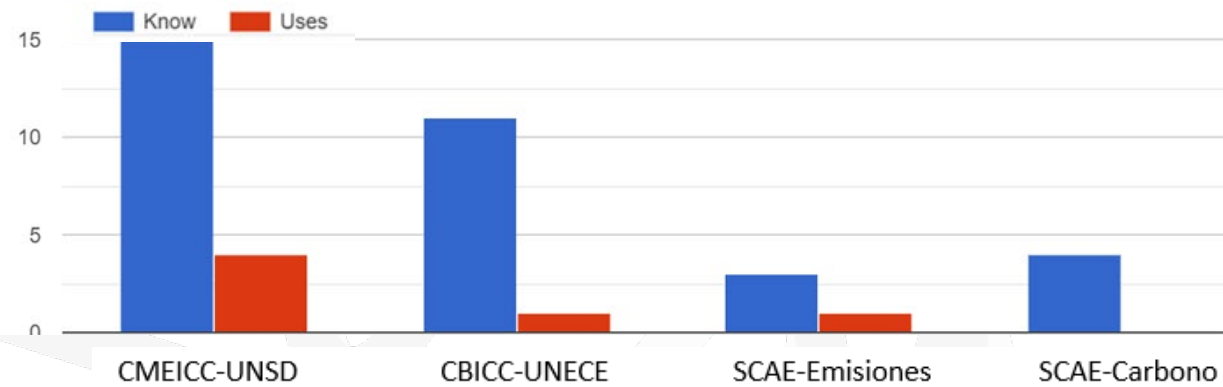
Major developments in climate change



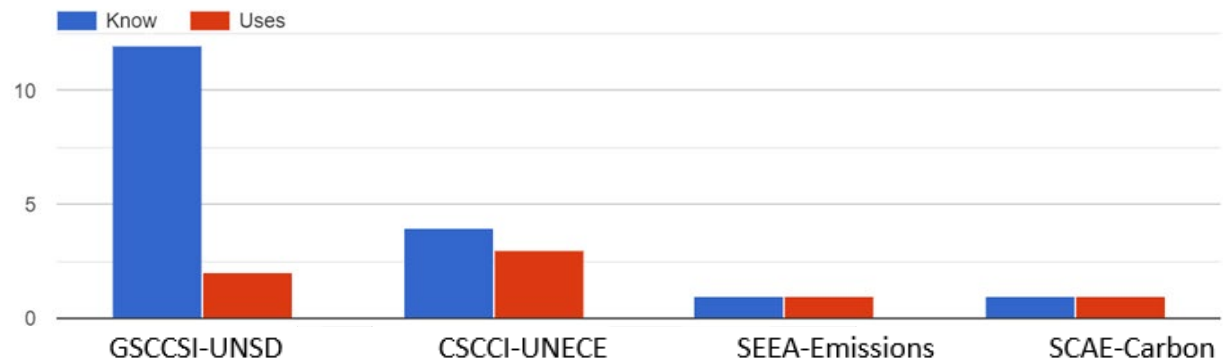
Although progress is reported in developing new statistics, it remains a challenge, particularly in adaptation.

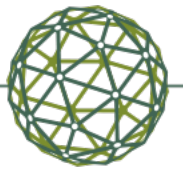
Knowledge and use of available frameworks

Latin America



The Caribbean





Main activities

2024-2025 Working Group on **Environment Statistics**

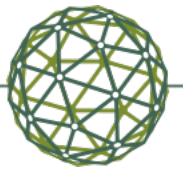
- 14 countries
- ECLAC
- UNEP
- UN Woman

Objective

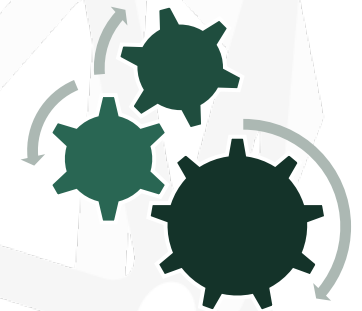
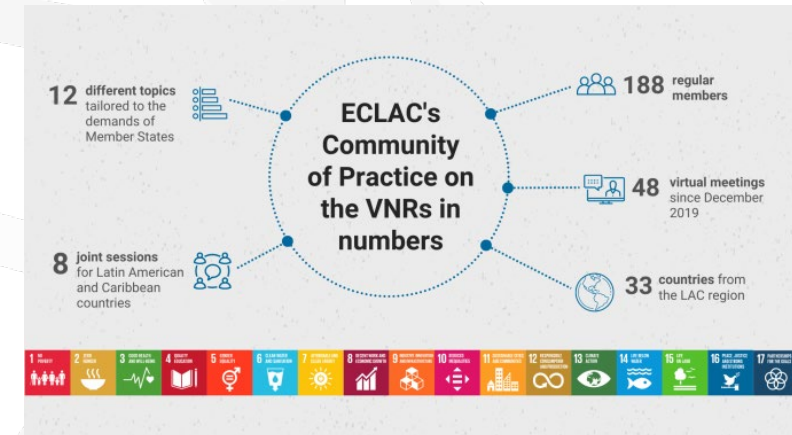
Strengthen the official systems of environment statistics in the LAC countries

1. **Update information** on the status and governance of environmental, climate change, and disaster statistics.
2. **Identify countries' experiences on good statistical practices** for strengthening environmental, climate change, and disaster statistics development.
3. **Recognize opportunities for collaboration to strengthen NSO's capacities** in generating, disseminating, and systematizing environmental statistics.

Type of support and tools for the preparation of the VNRs

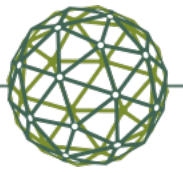


1. General Support in the VNRs process since 2019 through sharing of good practices and lessons learned: ECLAC's Community of Practice on VNRs.
2. Statistical support to Caribbean countries in their VNR preparation (ECLAC POS DA Project).
3. Statistical support to LAC countries aiming at improving the measurement, use and dissemination of the SDG indicators, improving the statistical operations, and enhancing statistical coordination - strengthening the National Statistical Systems (LAC UN System).
4. Tools and resources: SDG Gateway



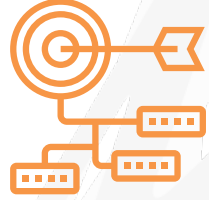
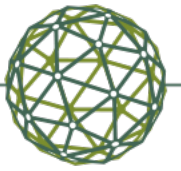
Latin America and the Caribbean

57 VNRs presented to the HLPF



32 countries presented their VNR to the HLPF in New York between 2016 and 2023, including 18 countries that submitted their VNR more than once

Great commitment of LAC countries with the fulfillment of the 2030 Agenda for Sustainable Development



Towards a regional framework on climate change and disaster indicators

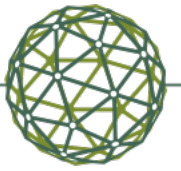
ECLAC

- **Produce regional CC indicators**, focusing on impact and adaptation (regional and subregional).
- **Build a list of regionally relevant indicators** for climate change reporting (keeping in mind the Global Set-UNSD).
- **Focus on occurrence and impact of disasters, environmental health, impact on agriculture and tourism, loss of mangroves and coral bleaching.**
- **Better use of the geospatial data** on disasters is to integrate them into the official statistics on population, households, establishments, agriculture, land cover and land use Information to enable anticipating disasters, improving preparedness and providing quick relief support to people.
- **Fund raising for a first 3 to 4-year regional program.**

Member-States

- ECLAC and Regional Experts are supporting national production of climate change statistics and encourage Member States to:
 - **Assess data availability** on climate change to build on the existing
 - **Develop CC indicators** starting with the most relevant issues for the region (i.e., disasters and adaptation)

Recommendations and Main Challenges



Challenges



- Develop **MITIGATION STATISTICS** other than renewables, electromobility, etc.
- Develop indicators to **LINK NATURAL RESOURCE USE and BIODIVERSITY with CLIMATE CHANGE and DEVELOPMENT.**
- Develop **ADAPTATION INDICATORS** as they are spatially specific.
- Develop indicators related to **BUILD BACK BETTER.**
- Implement global frameworks for providing **GEOSPATIAL SUPPORT TO DISASTER MANAGEMENT.**
- Improve **TRANSPARENCY** by producing and communicating relevant climate data and information. We need to have **RELIABLE CLIMATE DATA and INFORMATION.**

Monitoring Climate Change-related topics in Latin America and the Caribbean

Rolando Ocampo

Statistics Division, Economic Commission for Latin America and the Caribbean (ECLAC)



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