

The challenges of statistical production for climate change

Instructions: Click on the link to access each author's presentation.

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Participants:

Rolando Ocampo Alcántar: Measuring environmental and climate change indicators in Latin America and the Caribbean

Teresa Guerra Favela: UN Women in Environmental Management for Climate Justice

César Rodríguez Ortega: Mexico's National Set of Climate Change Indicators

Faryal Ahmed: Global Set of Climate Change Statistics and Indicators

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* Work presentation not available or non-existent

Measuring environmental and climate change indicators in Latin America and the Caribbean

Session: The Challenges Of Statistical Production For Climate Change And Disasters.
May 16, 2024



UNITED NATIONS



Rolando Ocampo, Statistics Division Director.
Economic Commission for Latin America and the Caribbean (ECLAC)

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....

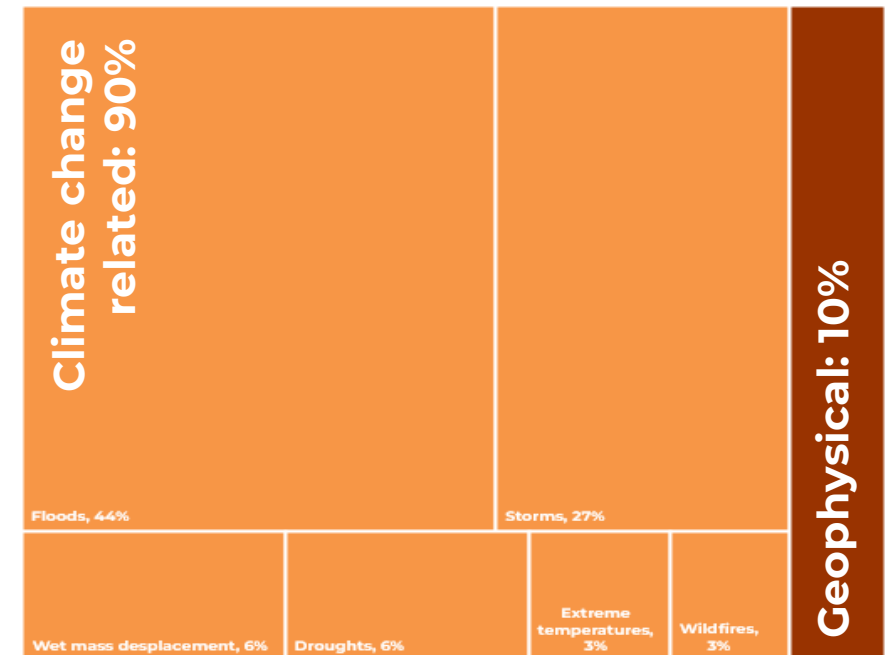
LAC GHG emissions represent only **7% of the accumulated global emissions.**



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.

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



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)

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



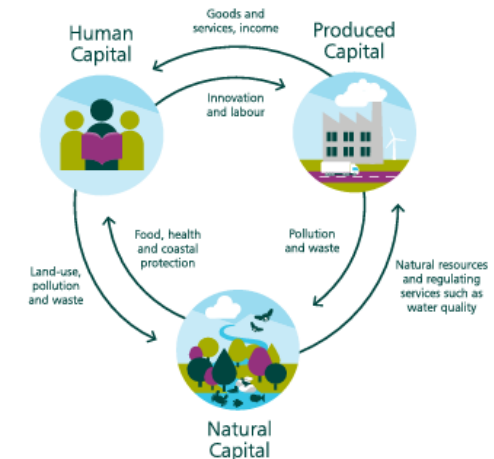
PARIS2015
UN CLIMATE CHANGE CONFERENCE
COP21·CMP11

Paris Agreement

100% of the indicators

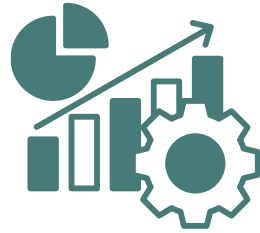
Of the three pillars of sustainable development, the newer and weakest is monitoring/measuring **environment, climate change and disaster dynamic.**

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



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, excluding 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/SENDAI 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

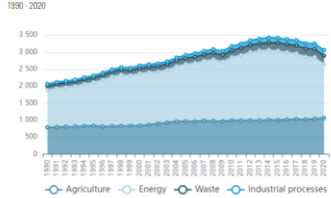
Dissemination of key regional **environment indicators** (some examples)

Latin America and the Caribbean: Regional Environmental Profile

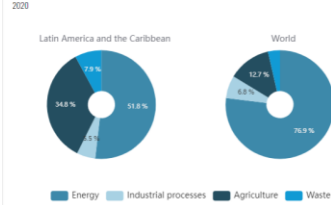
Latin America and the Caribbean: Regional Climate Change Profile

Drivers

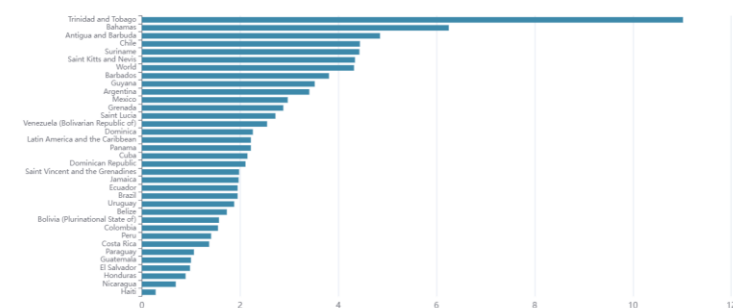
Total greenhouse gas (GHG) emissions, by sector
(Millions of tonnes of carbon dioxide equivalent (MTCO₂e))



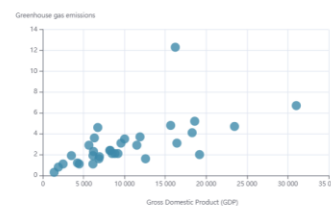
Total Greenhouse gas (GHG) emissions, by sector
(Percentage)



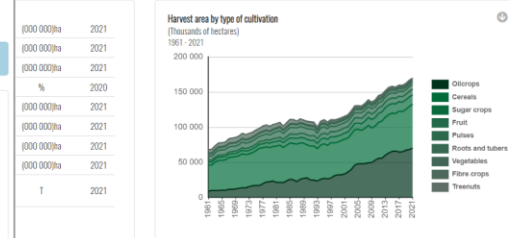
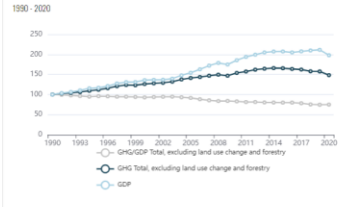
Greenhouse gas (GHG) emissions per capita
(Tonnes of carbon dioxide equivalent (CO₂e) per capita)



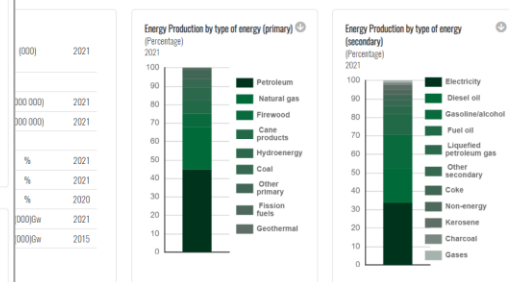
Ratio of greenhouse gas (GHG) emissions and gross domestic product (GDP), per capita
(Tonnes of carbon dioxide equivalent (CO₂e) per capita) / (Dollars per inhabitant)



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



Indicator	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

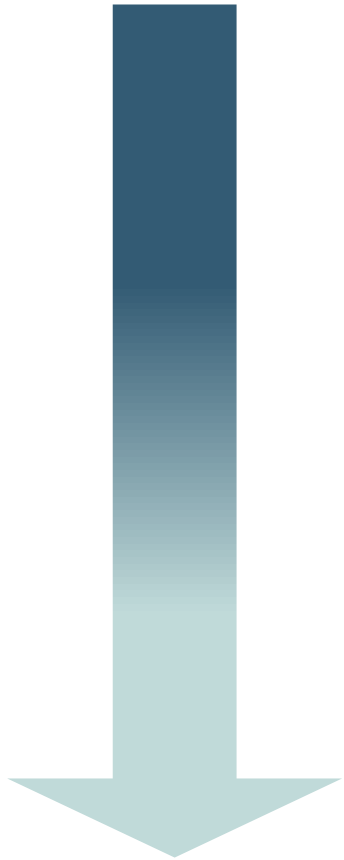


Screenshot of the CEPALSTAT GEOPORTAL interface. The main map shows Latin America and the Caribbean with various environmental indicators. The interface includes a search bar, navigation tools, and data tables for 'Areas Protegidas' and 'Surface area of Ramsar designated wetlands'. The 'Areas Protegidas' table shows the number of terrestrial, marine, and marine/terrestrial areas. The 'Surface area of Ramsar designated wetlands' table shows the surface area in hectares for different years.

Availability of CC and Disaster information



Available data



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

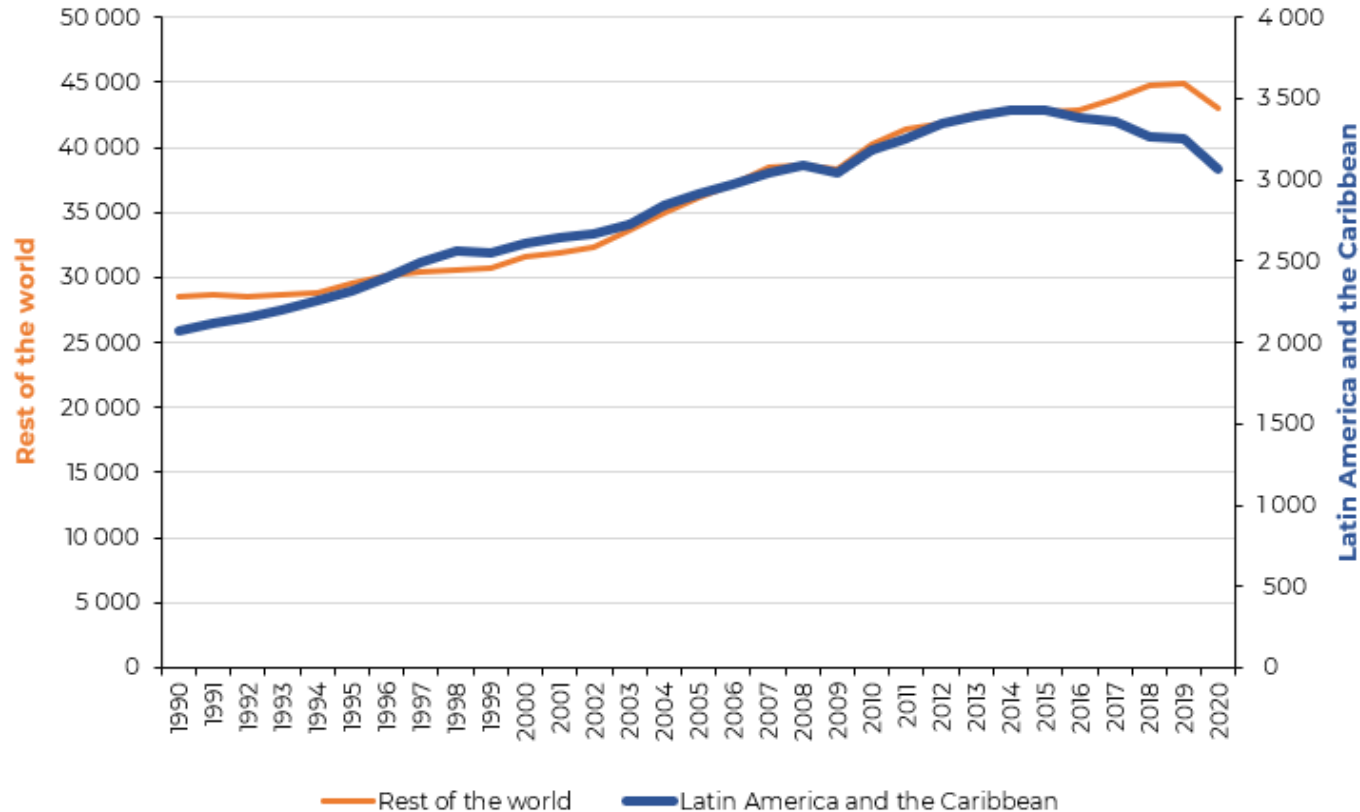
Energy renewability, energy intensity of GDP, forest cover and disaster preparedness data relatively more available.

Adaptation

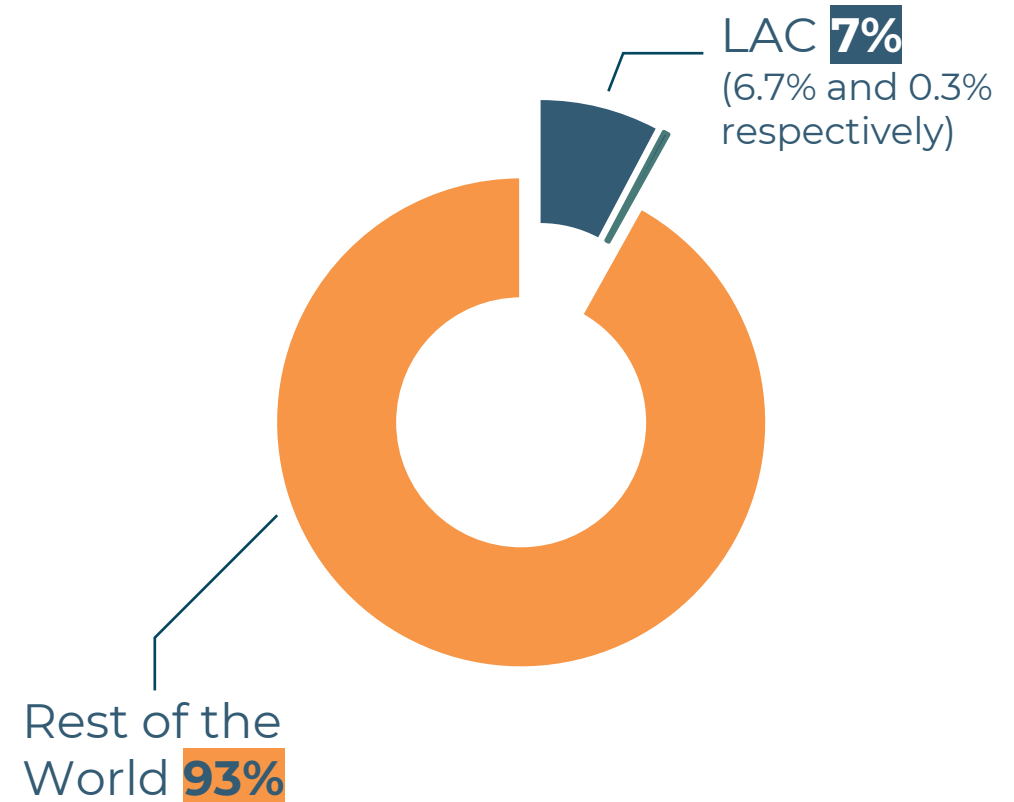
The least developed and more difficult to capture statistically (spatially specific programs and measures).

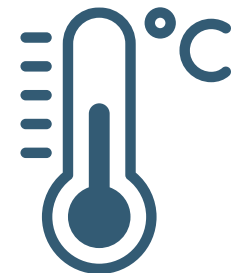
Latin America and the Caribbean and rest of the world: greenhouse gas (GHG) emissions

Million of tons of CO₂
1990-2020

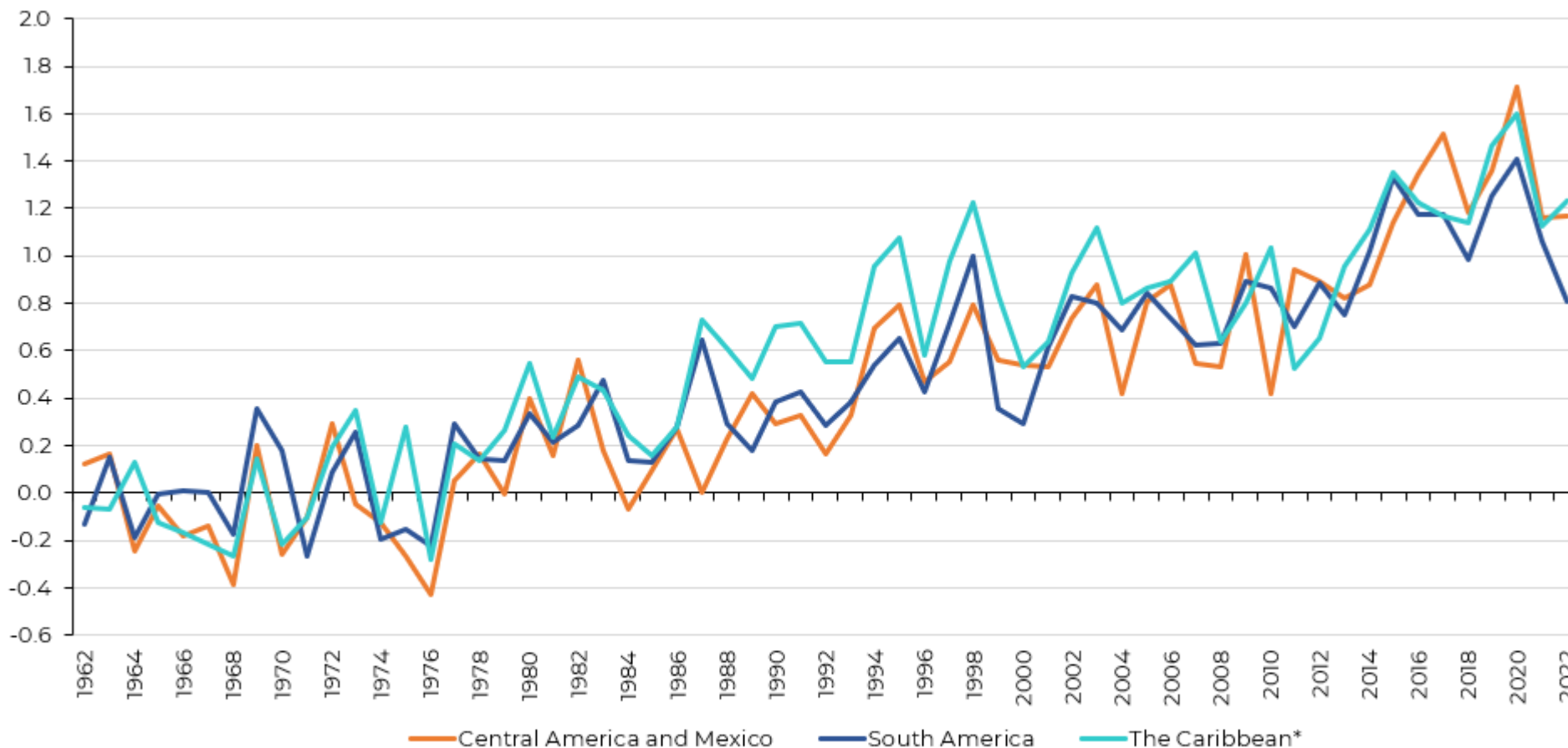


Percentage
2020





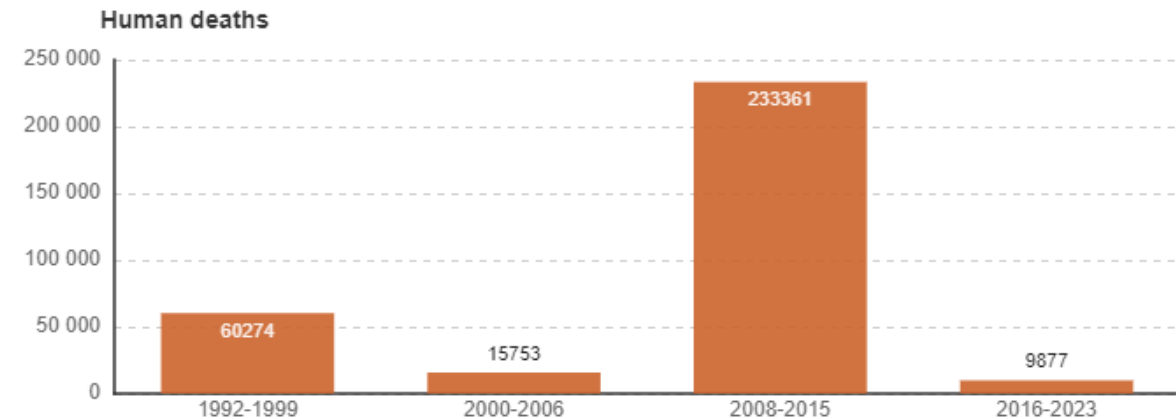
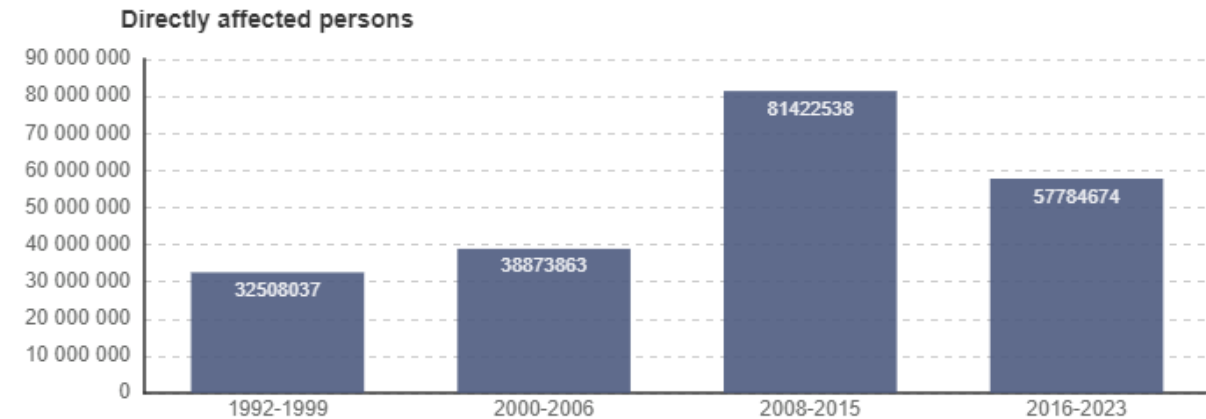
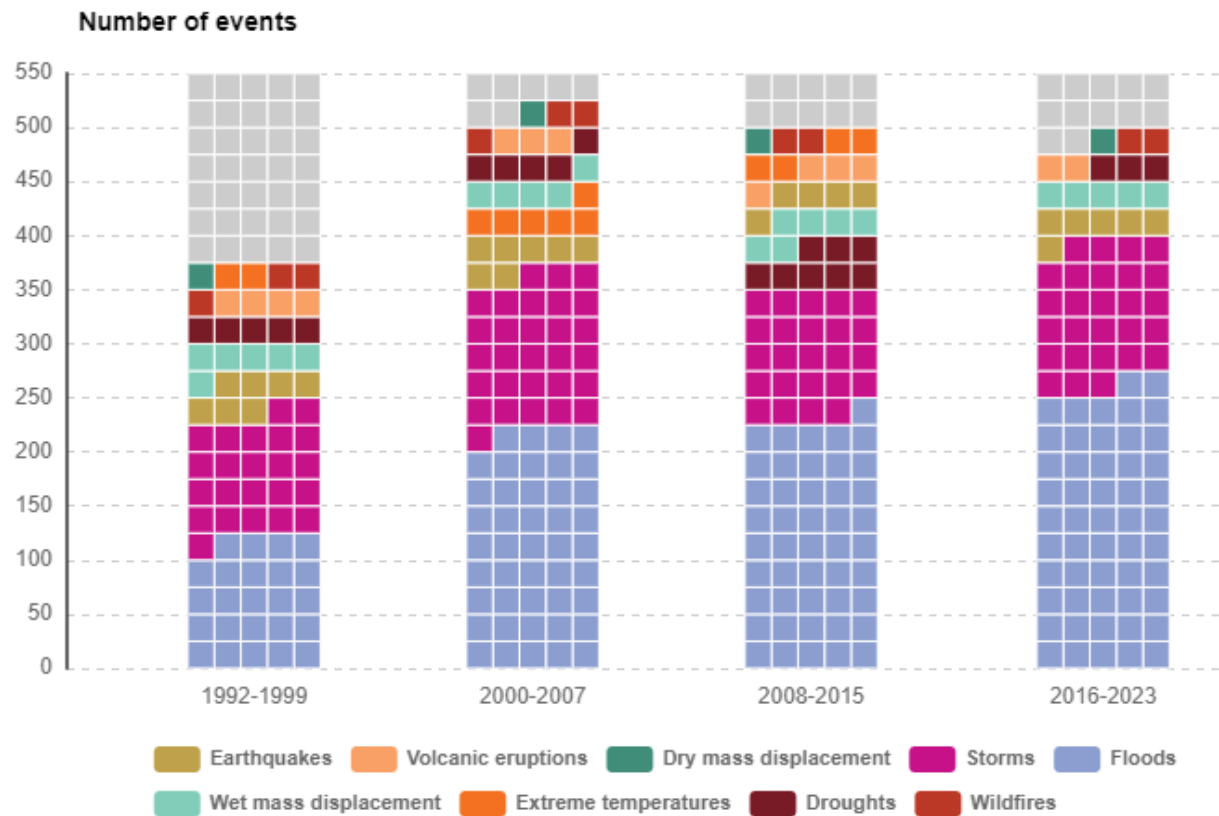
Latin America and the Caribbean: mean annual temperature change
(Degrees Celsius)
 1962–2022



* Includes Cuba and Dominican Republic

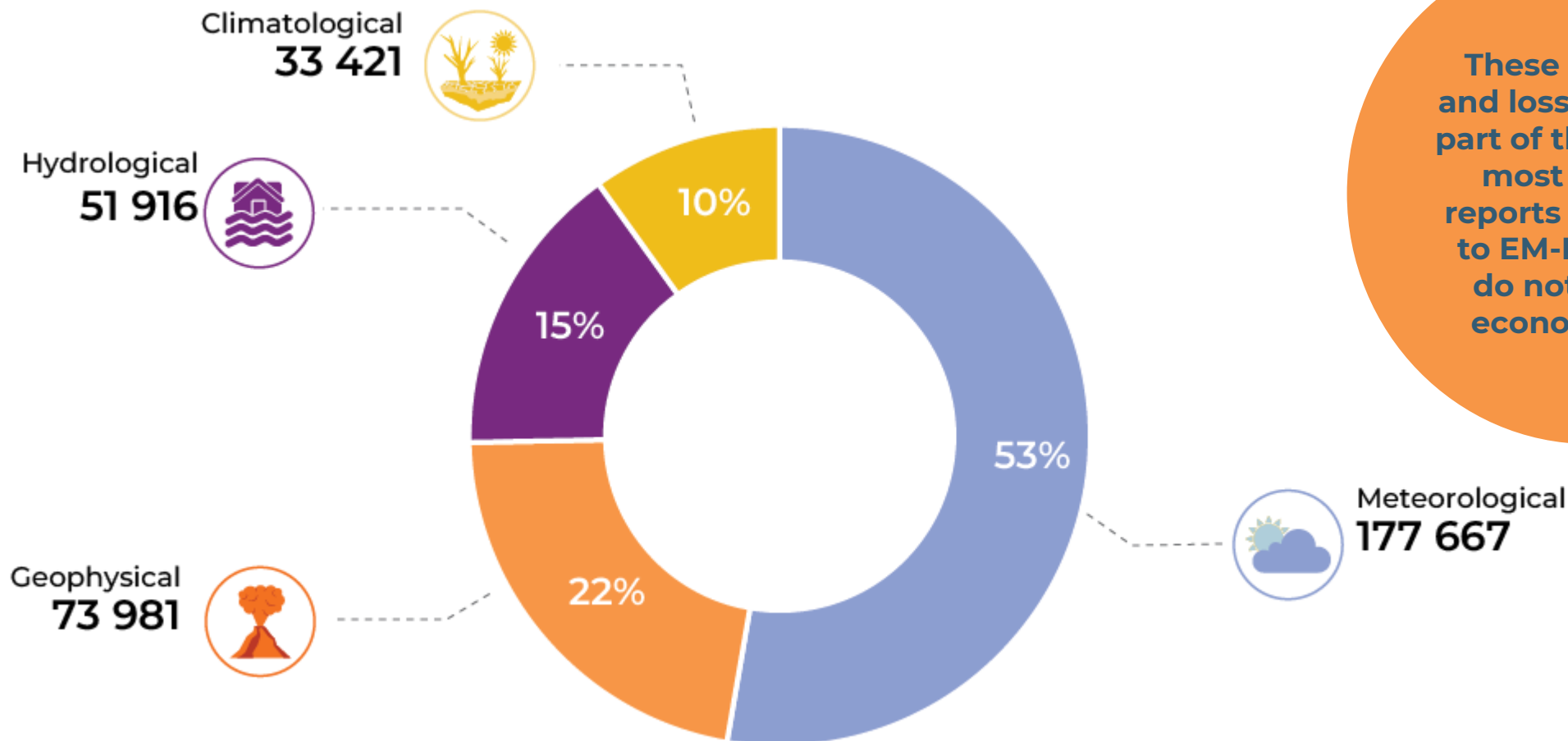


Latin America and the Caribbean: number of extreme events and disasters, and affected persons 1992–2023





Latin America and the Caribbean: accumulated economic cost of disasters for the period, by type of disaster (Millions of dollars and percentages) 1970–2023



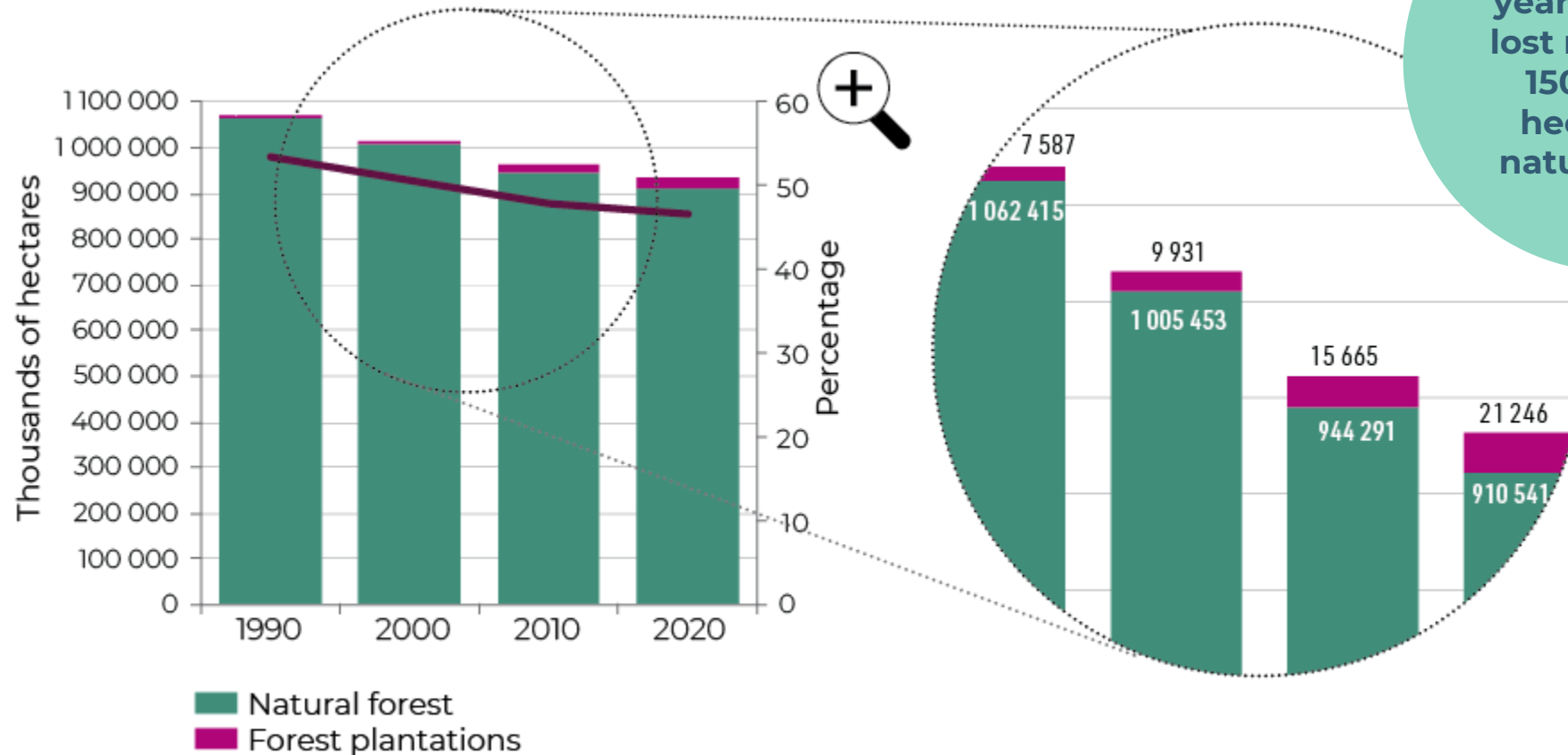
These damages and losses are only part of the story, as most disaster reports submitted to EM-DAT (63%) do not contain economic data



Latin America and the Caribbean: natural forest area, forest plantation area and proportion of forest area in relation to total area

(Thousands of hectares and percentages)

1990–2020



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

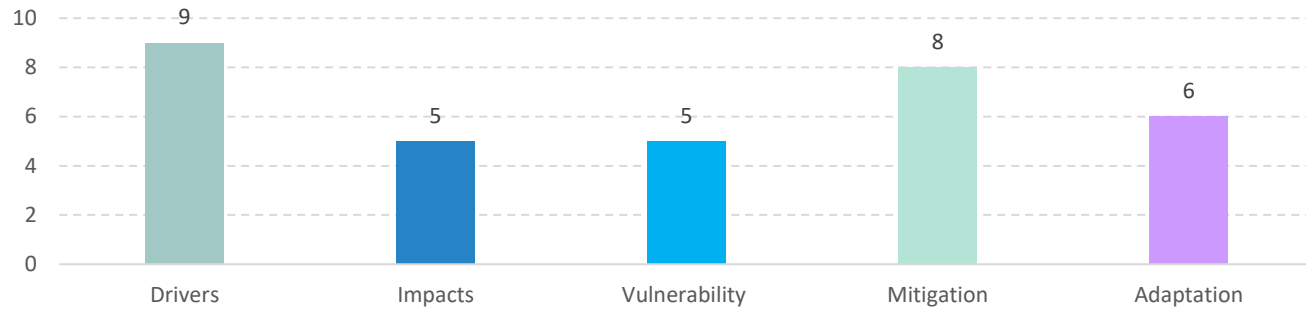
- **Strengthened national statistical and institutional capacities** of Caribbean SIDS to sustainably produce and disseminate relevant internationally agreed climate change and disaster risk reduction indicators.

UN ECLAC
Caribbean
First
Strategy

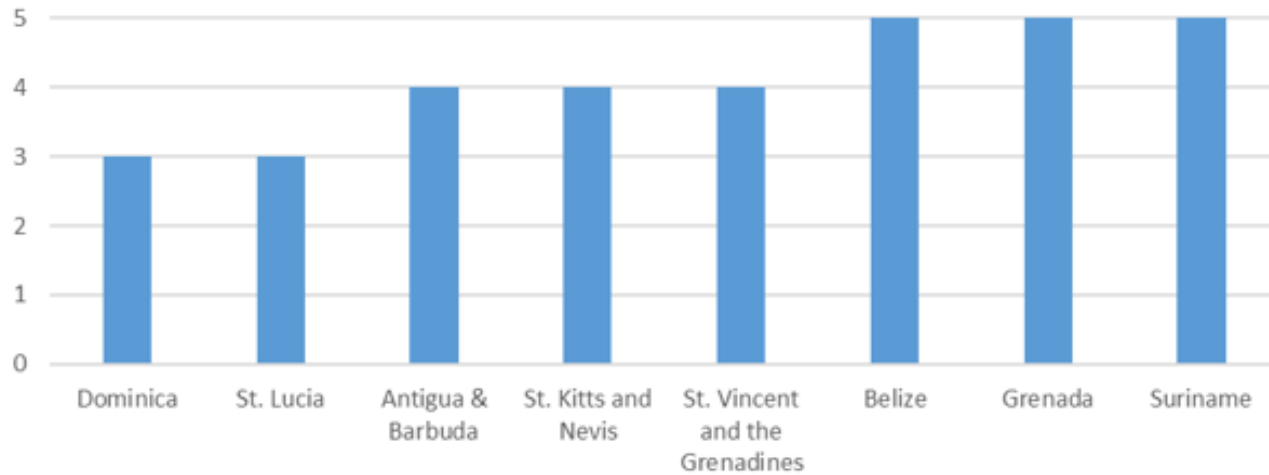
DA Project

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.

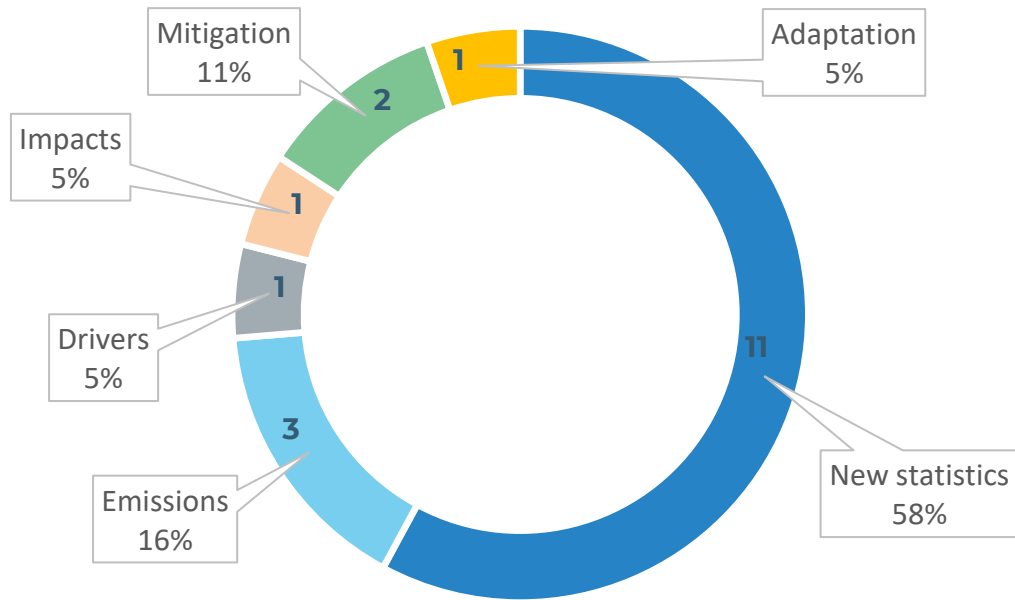
33 indicators built in total

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
	Adaptation – Ind. 144. Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type
Dominica	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
	Mitigation – Ind.125. Increase in forest area
Saint Lucia	Drivers – Ind. 1. Total green house gas emissions per year
	Impact – Ind. 53. Temperature records
	Adaptation – Ind. 156. Municipal waste collected per capita
Saint Kitts and Nevis	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
	Mitigation – Ind.125. Increase in forest area
	Adaptation – Ind. 156. Municipal waste collected per capita
Saint Vincent and the Grenadines	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
	Mitigation – Ind.125. Increase in forest area
Suriname	Drivers – Ind. 1. Total green house gas emissions per year
	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
Grenada	Drivers – Ind.19. Number of fossil fuels driven vehicles per capita
	Impact – Ind. Total rainfall anomaly
	Vulnerability – Ind.90. Ecosystem carbon stocks
	Mitigation – Ind.125. Increase in forest area
Belize	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

Survey 2023

Main developments in the field of CC

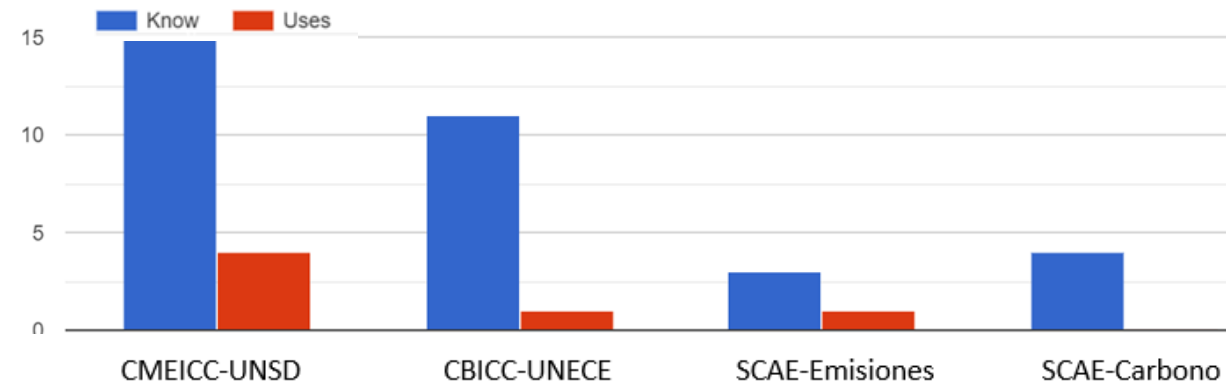
Major developments in climate change



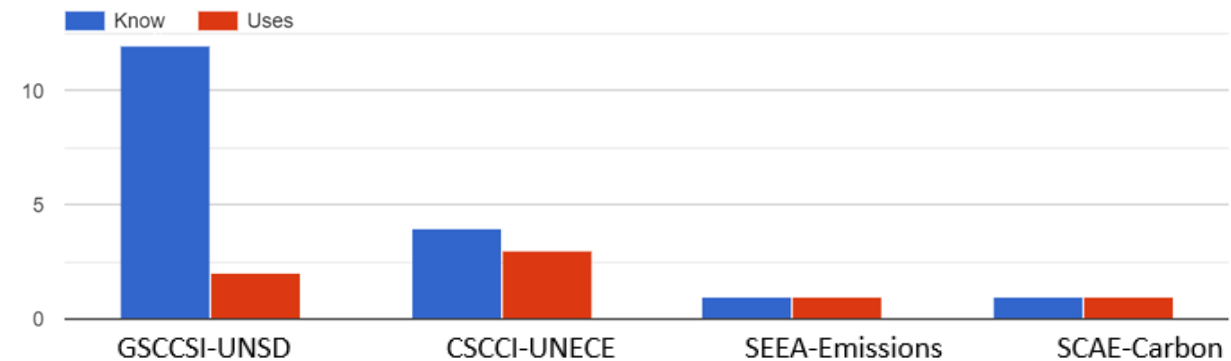
Although progress is reported in the development of new statistics, it remains a challenge particularly in the area of adaptation to climate change-

Knowledge and use of available frameworks

Latin America



The Caribbean



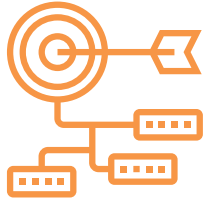
Recommendations and Main Challenges

Challenges



- Develop **MITIGATION STATISTICS** other than renewables, electromobility, etc.
- Develop indicators to **LINK NATURAL RESOURCE USE, BIODIVERSITY WITH CLIMATE CHANGE AND DEVELOPMENT.**
- Develop **ADAPTATION INDICATORS** as they are spatially specific (potential collaboration with UBA Germany).
- Develop indicators related to **BUILD BACK BETTER.**
- Implement global frameworks for providing **GEOSPATIAL SUPPORT TO DISASTER MANAGEMENT.**

Recommendations and Main Challenges



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 (considering the Global Set-UNSD).
- **Focus on the occurrence and impact of disasters, environmental health, impact on agriculture and tourism, loss of mangroves, and coral bleaching.**
- **A better use of geospatial data** on disasters is to integrate it 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.
- **Fundraising 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)

Thank you



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



UN Women in Environmental Management for Climate Justice

PANEL: THE CHALLENGES OF STATISTICAL PRODUCTION FOR CLIMATE CHANGE

Side event Thursday May 16th, 2024

11:00 – 12:30 hrs.



The Importance of Information on Gender and the Environment

Climate change is a threat to all people, but it does not affect everyone in the same way.

For example, women have greater difficulty accessing fertile land, advisory services, training and financial resources than men, which limits their ability to practice smart agriculture and increases their vulnerability to droughts, pests, diseases and other shocks associated with climate change.

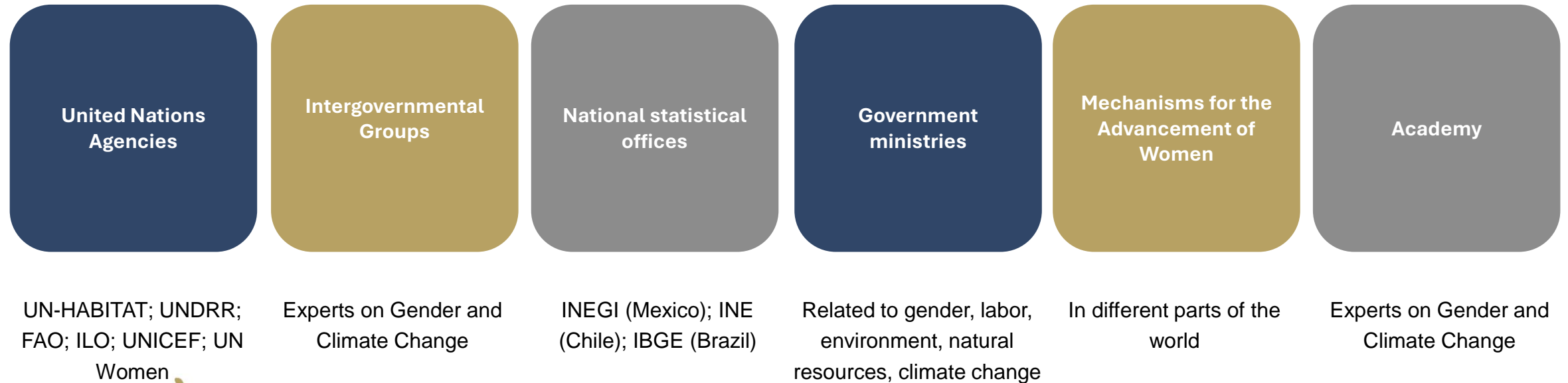
In order to assess the impact of climate change on women and men in a differentiated manner, it is necessary to carry out an analysis from a gender perspective.

This requires:

- ✓ Produce sex-disaggregated data.
- ✓ Generate indicators that reflect socially constructed vulnerabilities.

Agents

The development, collection, analysis and dissemination of information on gender and environment requires efforts and cooperation at different levels.



Regional Project: Scaling up Climate Change and Environmental Policies and Programmes and their effectiveness by integrating gender perspectives



Regional Project

GEOGRAPHIC COVERAGE



OBJECTIVES



DATA GENERATION (MEXICO)

Recognize through updated data the specific threats that climate change and environmental degradation pose to women, girls and their livelihoods; and make their contribution visible.



CAPACITY STRENGTHENING (CHILE)

Strengthen gender mainstreaming in environmental and climate policies; from design to implementation.



PARTICIPATION OF WOMEN (BRAZIL)

Ensure **women's participation in decision-making** and access to resources, so that public projects and policies are more effective and efficient.

TIME

48
months

IMPLEMENTATION

- UN Women Regional Hub Mexico, Chile and Brazil
- Grand Duchy of Luxembourg

ARTICULACIÓN

- Regional experts on gender, data, policy frameworks and communication
- LAC Gender and Environment Group (GEG)
- Women's and feminist organizations

Regional Project. Linkage to UN Women Regional Strategy and GEG

UN WOMEN REGIONAL STRATEGY

PUTTING GENDER EQUALITY ON THE ENVIRONMENTAL AND CLIMATE AGENDA.

- Strengthen relationships and collaborate at the regional level through different forums, projects, entities.
- Generate gender-disaggregated diagnostics and data to identify differentiated impacts and make evidence-based decisions.
- Develop proposals for gender mainstreaming.
- Contribute to the empowerment of women, especially indigenous, Afro-descendant, rural, women defenders and peasant women; NGO leaders, academia, etc.

REGIONAL PROJECT LUXEMBOURG

DATA GENERATION

- Generate sex-disaggregated data in key sectors for the economy (relationship with **NDCs and NAPs**).
- Develop/update Atlas on gender and climate change.

STRENGTHENING CAPACITY

- Analyze gender mainstreaming in environmental and climate policies.
- Assess and strengthen capacities for gender mainstreaming (handbook).
- Support negotiations

WOMEN'S PARTICIPATION

- Strengthen the presence and participation of women in decision-making spheres through coordination with environmental and women's organizations.

REGIONAL WORK PLAN GEG

KEY POINTS OF THE REGIONAL WORK PLAN

- P1.5. Implement initiatives for the generation and application of information disaggregated by sex and gender and the generation of gender and environmental indicators and analysis.
- P2. Develop mechanisms for capacity building and strengthening on gender and environment mainstreaming.
- P3. Inputs for gender mainstreaming (Handbook) and 3.5 coordination with **MAMs**.
- P4. Actions to increase the participation and empowerment of women in their relationship with the environment.

Next steps GEG and UN Women

GENDER AND ENVIRONMENT GROUP



IDENTIFICATION OF PRIORITY ECONOMIC SECTORS FOR THE ELABORATION OF A LIST OF GENDER INDICATORS



EXCHANGE AMONG MINISTRIES OF ENVIRONMENT WITH MAMS AND STATISTICAL CENTERS



TRANSVERSALIZATION OF THE GENDER PERSPECTIVE IN THE ENVIRONMENTAL AND CLIMATE AGENDAS

UN WOMEN



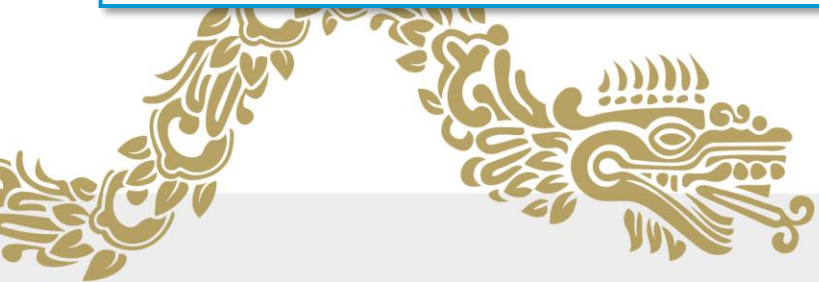
CONTINUE WITH THE IMPLEMENTATION OF THE PROJECT, KEEPING THE REGIONAL COLLABORATION



IDENTIFY STRATEGIES THAT CAN BE SCALED TO THE REGION, FROM THE KNOWLEDGE GENERATED AT THE NATIONAL LEVEL



ASSIST IN THE IMPLEMENTATION OF THOSE ITEMS OF THE GEG`S WORK PLAN LINKAGE WITH THE PROJECT AND THE REGIONAL STRATEGY.



Regional Project: Data Component



Regional Project. Data Component

Outcome 1.1. Data on gender-differentiated vulnerability to climate change and environmental degradation, as well as gender-differentiated impacts at the sub-regional scale, have been created and/or updated, allowing for a better understanding of how gender influences decision-making related to natural resource management.

Organization of roundtables :

- National statistical institutes
- Ministries of Environment and Gender
- National gender-related organizations

Hybrid Workshop with the Gender and Environment Working Group

- Discuss the List of Indicators to measure the situation of women in relation to natural resources and climate change.
- Improve the list and ensure that it is useful for the entire region.

Final list of indicators defined and published

Outcome 1.2. Green and blue economy policies, programs and projects (including green bonds) have an improved baseline and direction for gender mainstreaming in key sectors (e.g. circular economy, mobility, clean energy).

Elaboration of a Baseline Study Report on Gender and Climate Change:

- Key climate change sectors
- Key environmental issues
- Participation of women in decision-making related to natural resource management and climate change.

Generation of an Atlas of information on gender and climate change:

- Data uploaded to a public platform
- Download available



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Thank you





Mexico's National Set of Climate Change Indicators



Objective

The **National Set of Climate Change Indicators** (**Conicc**, in Spanish) seeks to offer a broad perspective, in accordance with national concerns, on the factors promoting climate change, as well as the current state of the phenomenon, its impacts on social, economic and environmental systems and progress in climate policies.



Institutional leadership



SEMARNAT
SECRETARÍA DEL MEDIO AMBIENTE Y
RECURSOS NATURALES



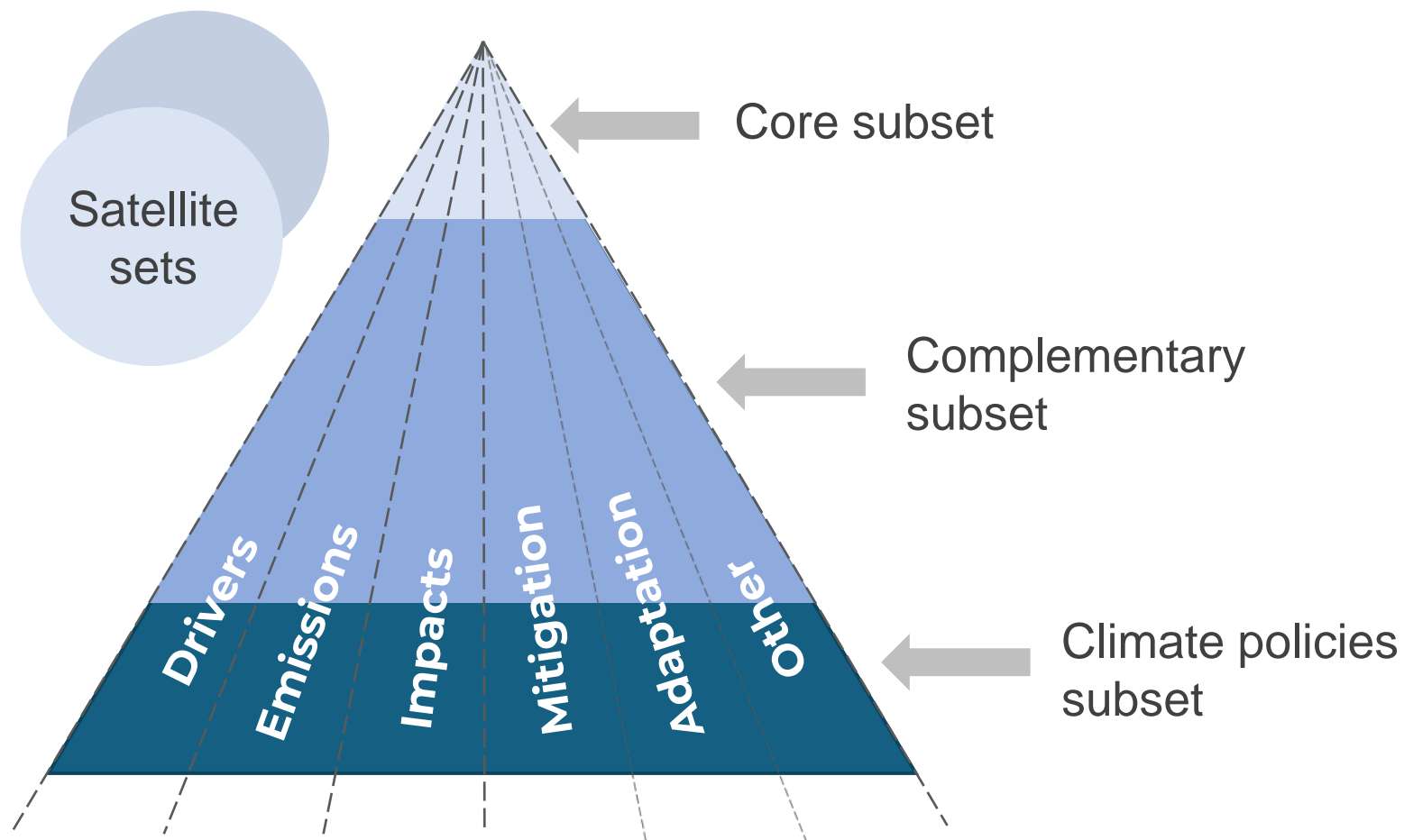
INECC
INSTITUTO NACIONAL
DE ECOLOGÍA Y
CAMBIO CLIMÁTICO



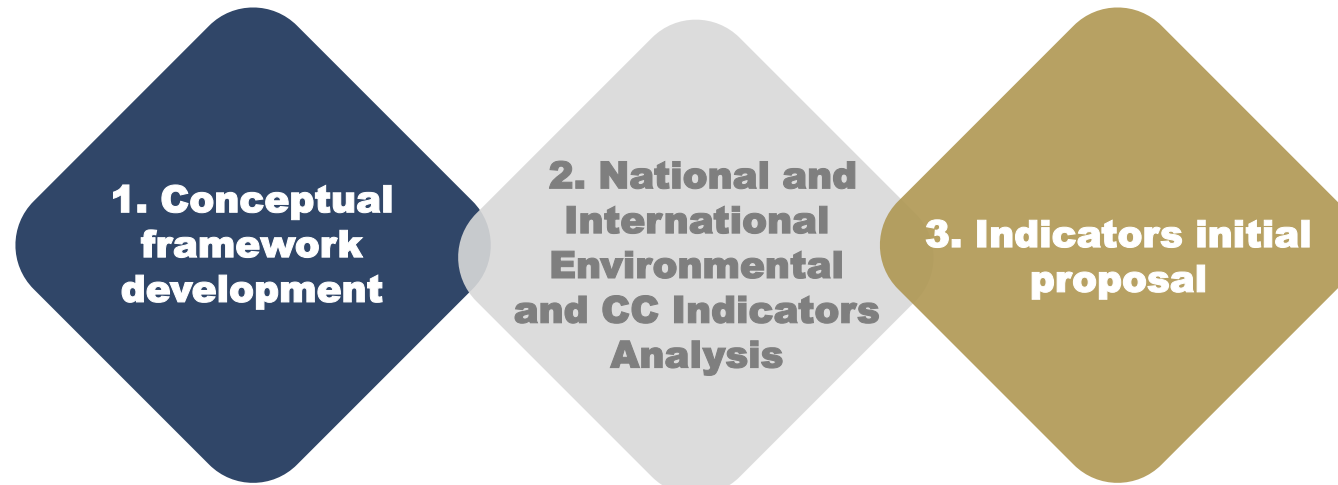
Conceptual framework

- Driving Forces-Pressures-State-Impacts-Response (DPSIR) model;
- Environmental, sectorial and policy indicators;
- Satellite Indicators Sets

Mexico's National Set of Climate Change Indicators



Methodology



NATIONAL INDICATOR SETS

- Federal Environmental Information Systems
- Catalogue of National Indicators
- Federal Programs indicators (Environment & Energy sectors, for example)

INTERNATIONAL INDICATOR SETS

- SDG
- Sendai Framework for Disaster Risk Reduction
- UNECE-CES Set of Core Climate Change-Related Indicators
- UNECE-Set of core disaster-risk-related indicators



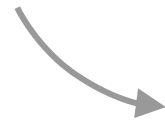
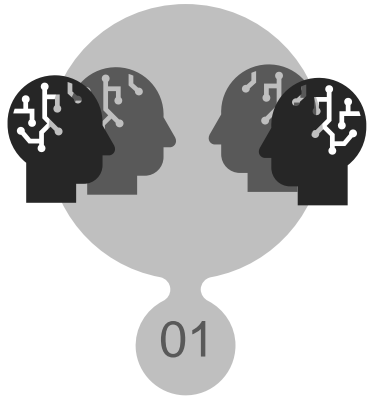
Initial proposal of Indicators

Subtopic	TIER			TOTAL
	TIER 1	TIER 2	TIER 3	
Adaptation	7	29	12	48
Emissions	5	8	3	16
Drivers	6	18	2	26
Impacts	8	49	14	71
Mitigation	5	7	5	17
Vulnerability	7	30	3	40
Adaptation / Vulnerability	1	0	0	1
Adaptation / Mitigation	0	2	3	5
Gender	3	19	0	22
TOTAL	42	162	42	246



Next steps...

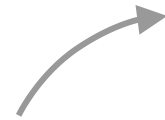
Federal Agencies
Climate Change
Experts Workshop



02



Bilateral meetings with
Federal Agencies



Final indicators list



04



Official presentation
before SNIEG
CC Committee

Publication in Climate
Change Information System
(SICC, in Spanish)





Thank you!





Global Set of Climate Change Statistics and Indicators

19TH IAOS Conference, 15-17 May 2024, Mexico city

Session: The Challenges Of Statistical Production For Climate Change (16 May 2024)

United Nations Statistics Division



Global Set of Climate Change Statistics and Indicators



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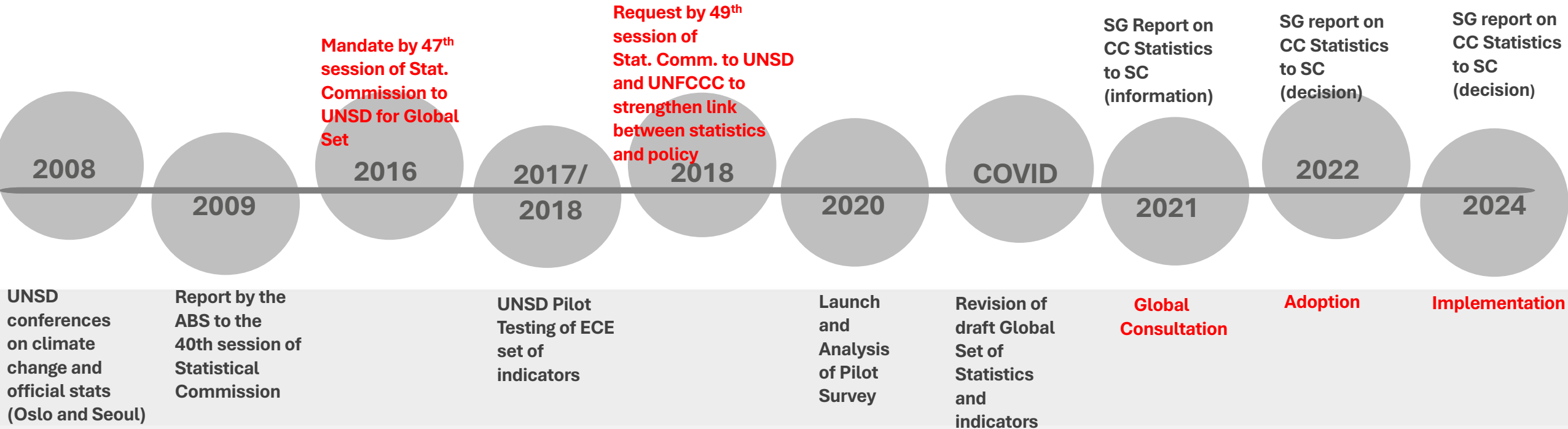


Key points

1. Global Set
2. Capacity Development
3. Implementation Guidelines
4. CISAT
5. Data sources and methodological development
6. Way forward



Background and process



Decisions of the Statistical Commission:

Decision 47/112 (2016), UNSD requested to develop a global set of climate change statistics and indicators, applicable to countries at various stages of development: <http://unstats.un.org/unsd/statcom/47th-session/documents/Report-on-the-47th-session-of-the-statistical-commission-E.pdf>

Decision: 49/113 (2018), UNSD and UNFCCC to strengthen the link between statistics and policy: <https://unstats.un.org/unsd/statcom/49th-session/documents/Report-on-the-49th-session-E.pdf>

Decision 53/116 (2022), the Global Set was adopted at the 53rd session of the Statistical Commission: <https://unstats.un.org/unsd/statcom/53rd-session/documents/2022-41-FinalReport-E.pdf>

Decision 55/118 (2024) focuses on implementation of the Global Set including investment in climate change statistics, use of administrative data, and including climate change questions in relevant censuses and surveys: https://unstats.un.org/UNSDWebsite/statcom/session_55/documents/2024-36-FinalReport-E.pdf

Global Set of Climate Change Statistics and Indicators



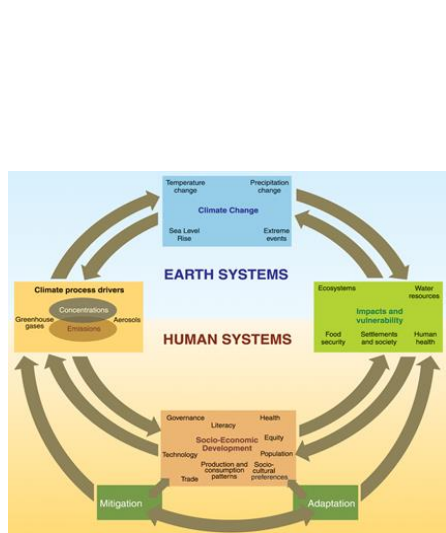
The Global Set was adopted as the framework guiding countries to develop their own national sets of climate statistics and indicators at the fifty-third session of the Statistical Commission.

- It links the reporting requirements under the Paris agreement with the needed indicators and statistics from the relevant frameworks and guidance.
- It contains 158 indicators and 190 statistics (for which metadata is available for each) structured in five areas defined by IPCC, these are drivers, impacts, vulnerability, mitigation and adaptation.
- It consists of a tiering system as in the FDES and the SDG indicators.

Methodological foundation

Given that there was no underlying framework linking the reporting requirements stemming from the Paris Agreement and the necessary statistics or indicators to support climate policy action, UNSD worked closely with UNFCCC to develop such a framework explicitly for climate change.

The Global Set, developed in close collaboration with UNFCCC, is structured according to the IPCC framework and FDES, with a tiering system as in the FDES and the SDG indicators.

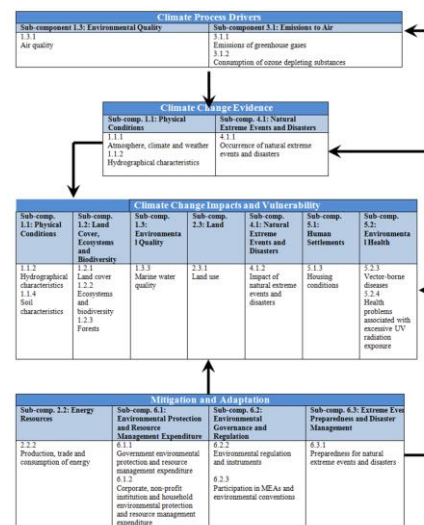


IPCC, 2007, Fourth Assessment Report



Framework for the Development of Environment Statistics (FDES 2013)

Relevant chapters of the Manual of the BES
https://unstats.un.org/unsd/envstats/fdes/manual_bses.cshml



FDES cross-cutting application (Chapter 5) links climate change and environment statistics based on the IPCC Framework



Goal 13



Main structure

158 indicators, which serve to support developing and monitoring of national climate policies and international reporting requirements, in particular those under the Paris Agreement.

190 statistics, which serve three main purposes:

- (i) to provide less complex options for countries with less developed statistical systems;
- (ii) to provide statistics needed to compile the indicators (for Tier 1 and 2); and
- (iii) to provide inputs to further define and develop the Tier 3 indicators.

Five areas: drivers, impacts, vulnerability, mitigation and adaptation.

34 topics, represent the quantifiable aspects of the areas taking into account the types and sources of the statistics needed to describe them;

Paris Agreement article: Correspondence between the indicator/statistic and the articles in the Paris Agreement specifying the reporting requirements;

PAWP-Katowice: Correspondence between the indicator/statistic and the decisions from the Paris Agreement Work Programme (PAWP), adopted in Katowice, specifying the reporting requirements;

Statistical references (next slide).

Statistical references (1)

The main statistical references including the internationally accepted frameworks, standards and guidelines, are presented in abbreviated form in the last column (entitled Method):

- **IPCC:** the Intergovernmental Panel on Climate Change 2006 guidelines;
- **FDES:** the Framework for the Development of Environment Statistics and its Manual on the Basic Set of Environment Statistics (BSES);
- **SDG:** Sustainable Development Goal indicators metadata;
- **Sendai:** Sendai Framework for Disaster Risk Reduction 2015-2030;
- **UN-ECE:** the Conference of European Statisticians set of core climate change-related indicators metadata;
- **IRES:** the International Recommendations for Energy Statistics;

Statistical references (2)

- **SEEA-CF**: the System of Environmental-Economic Accounting Central Framework;
- **SEEA-EA**: the System of Environmental-Economic Accounting-Ecosystem Accounting.

Various climate related policies can be informed by various types of SEEA accounts:

Informing **mitigation and adaptation strategies**

Providing a comprehensive overview of how much **carbon is stored per ecosystem type** and how this develops over time

Assessing how **climate change impacts** economic activities and households

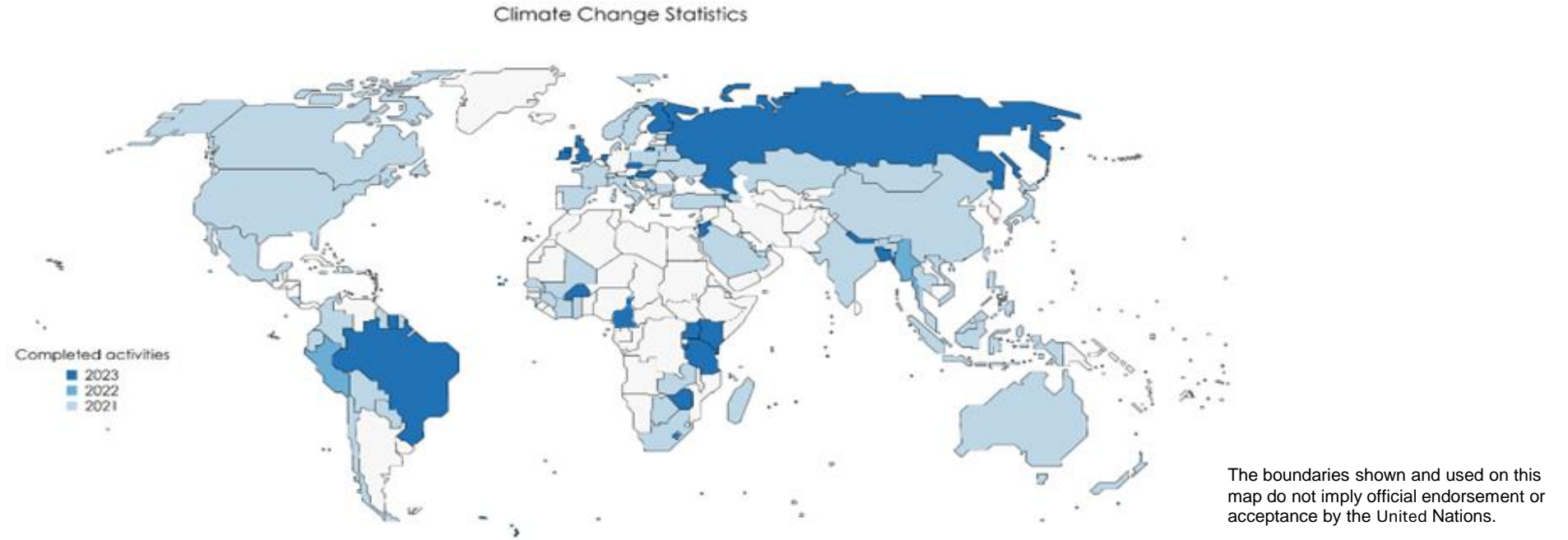
Capacity development activities



Examples of UNSD involvement in Capacity development activities

- National mission and workshop on Environment and Climate Change Statistics in Peru, Lima (Dec 2022)
- CISAT pilot-testing in Caribbean SIDS (RPTC funded activity): Antigua and Barbuda, Belize, Grenada, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname
- ECLAC DA12 project ‘Climate Change and Disaster Statistics in the Caribbean’ - completed
- DA14 Workstream 2.1 – Climate Change and Disaster-related Statistics (led by UNEP and ESCAP) – several activities commencing soon
- Fostering Caribbean SIDS-SIDS Peer-Learning And Cooperation (workshop in Belize in April/May 2024)
- COMESA project on Environment and Climate Change Statistics for the African Development Fund Countries (workshop in Nairobi, Nov 2022)
- UNEP & DRR missions in Lesotho and Cameroon with a ‘National Workshop on Climate Change and Disaster-related Statistics’ (2023)

Growing engagement of countries



- Global Consultation (May- Sept 2021) – 86 countries (68 on part 1 and 75 part 2) and 26 organizations
- About five countries communicated updates or new assessments in 2022, including via UNSD funded consultancies and other initiatives
- Another 23 countries provided updates in 2023 via a short survey to the EGES members and other communications

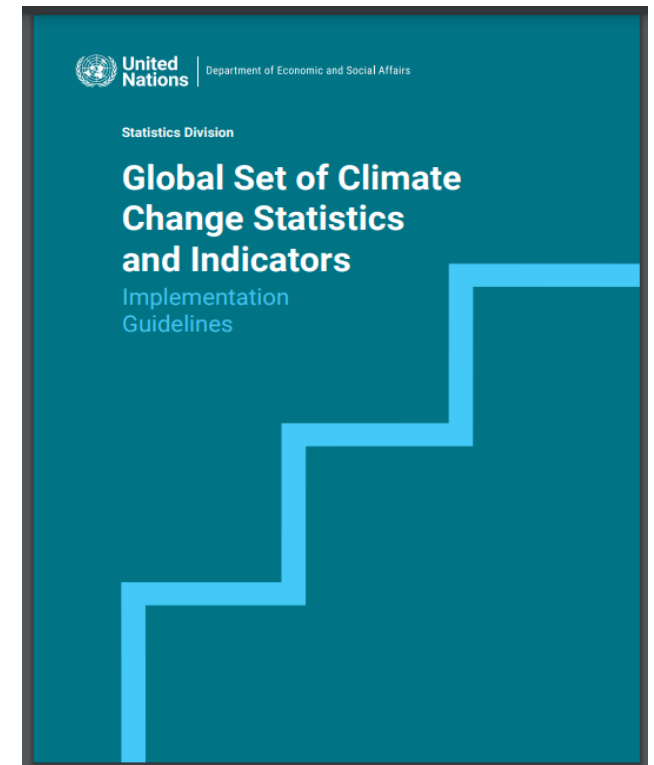
Global Set of Climate Change Statistics and Indicators: Implementation Guidelines



Implementation Guidelines

The Guidelines aim to help countries improve the monitoring of climate change, its impacts and response actions by better informing the UNFCCC-NFPs about the benefits of official statistics and by guiding the NSOs to increase their engagement in the area of climate change. The overall objectives of the Guidelines are to:

- help countries to set up the national consultation processes which can embrace this multidisciplinary statistical work in a way complementary to the ongoing and future reporting to UNFCCC;
- deepen countries' self-assessment activities using the Global Set; and
- provide the basis for countries to initiate the development of a national programme for sustained production of climate change statistics within the national statistical system (NSS).



Climate Change Statistics and Indicators Self-Assessment Tool (CISAT)



The Climate Change Statistics and Indicator Self-Assessment Tool (CISAT)

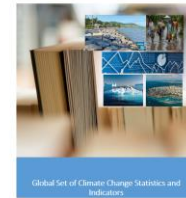
- **Introduction:** short introduction and guidance for completing the self-assessment;
- **Part I: Institutional Dimension of Climate Change Statistics and Indicators:** aims at collecting general information on the institutional dimensions of climate change statistics;
- **Part II: Statistics and Indicators Assessment:** each individual indicator and statistic can be assessed in terms of relevance, methodological soundness and data availability.
- **Metadata sheets** in a Word file are linked to each indicator in the Excel file (Part II) via hyperlinks.

Climate Change Statistics and Indicators Self-Assessment Tool (CISAT)



Climate Change Statistics and Indicators Self-Assessment Tool (CISAT)

Part I: Institutional Dimensions of Climate Change Statistics and Indicators



Climate Change Statistics and Indicators Self-Assessment Tool (CISAT)

Part II: Statistics and Indicators Assessment



Climate Change Statistics and Indicators Self-Assessment Tool (CISAT)

(CISAT)

Metadata



Prepared by the United Nations Statistics Division
Version 1.0

Revised from the BACKGROUND DOCUMENT TO THE REPORT OF THE SECRETARY-GENERAL ON CLIMATE CHANGE STATISTICS (E/CN.S/2011/7)
English version for the November 2011 meeting
Available: <http://unstats.un.org/unsd/envstats/Climate%20Change/cisat.cshtml>
(www.unstats.un.org)

Introduction

This Climate Change Statistics and Indicators Self-Assessment Tool (CISAT) gives United Nations member states an opportunity to undertake a thorough and detailed assessment of the statistics and indicators in the Global Set of Climate Change Statistics and Indicators (Global Set). The United Nations Statistical Commission, at its 17th third session in 2012, adopted the Global Set of Climate Change Statistics and Indicators as the framework for climate change statistics and indicators to be used by countries when preparing their own sets. Similar to the Basic Set of Environment Statistics in the Framework for the Development of Environment Statistics (BSES), the Global Set is comprehensive, but not exhaustive and designed to support countries according to their individual needs, concerns, priorities and resources.

The Global Set serves as the statistical framework for monitoring and reporting climate action with suitable indicators to serve as a guidance for countries to prepare their own sets. It covers the five policy areas of the IPCC, i.e., impacts, vulnerability, adaptation, mitigation and climate system (the 34 topics). In each area, the most important indicators to describe the topics are listed, thus providing guidance to countries developing their climate change statistics in a comprehensive and balanced manner. Also included are statistics for which distinct methodology was identified. In this way, the Global Set contains 128 indicators and 126 statistics. The purpose of this structure is to ensure balanced coverage of indicators and statistics, and to provide direction to policies (e.g., on direct, integrated, and indirect emissions) to address the structure design to help countries to select and prioritize the statistics and indicators most relevant to their national context.

The list of indicators and statistics included in the Global Set, as well as the Metadata are best accessed through the CISAT tool.

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A. Identification of institutions.....	2
B. National policies/strategies.....	3
C. Mandate and organization of climate change statistics.....	4
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GLOBAL SET (PART I) - GENERAL INFO	INDICATOR	STATISTICAL PARAMETERS	RELEVANCE	METHODOLOGY	DATA AVAILABILITY	REMARKS	SELF-ASSESSMENT	
							RELEVANCE	METHODOLOGY
1	Total greenhouse gas emissions per year	19	19	19	19			
2	Total emissions of individual greenhouse gases	19	19	19	19			
3	Greenhouse gas emissions from land use, land use change and forestry	17	17	17	17			
4	Total greenhouse gas emissions from the national economy	19	19	19	19			
5	Greenhouse gas emissions per capita	23	23	23	23			
6	Greenhouse gas emissions in gross fixed capital formation of direct investment	23	23	23	23			
7	Greenhouse gas emissions in value added of foreign-controlled multinationals enterprises	23	23	23	23			
8	Carbon footprint	27	27	27	27			
9	Global concentration of greenhouse gases	29	29	29	29			
10	Total primary energy production from fossil fuels	35	35	35	35			
11	Total energy supply from fossil fuels	35	35	35	35			
12	Share of fossil fuels in total energy supply	35	35	35	35			
13	Fossil energy consumption per capita	37	37	37	37			
14	Energy intensity measured in terms of primary energy and gross domestic product	39	39	39	39			
15	Fossil fuel dependency	41	41	41	41			
16	Amount of fossil fuel subsidies (production and consumption) per unit of gross domestic product	43	43	43	43			
17	Population growth	45	45	45	45			
18	Urban population as a proportion of total population	47	47	47	47			
19	Number of fossil-fuel-based vehicles per capita	49	49	49	49			
20	Vehicle miles travelled per capita	51	51	51	51			
21	Intensity of use of forest resources	53	53	53	53			
22	Deforested area as a proportion of total forest area	55	55	55	55			
23	Ratio of area of agricultural fields relative to the agriculture to total area of arable soils	57	57	57	57			
24	Livestock units per agricultural area	59	59	59	59			
25	Use of nitrogen fertilizers per hectare of total agricultural area (cropland and pastures)	61	61	61	61			
26	Greenhouse gas emissions	63	63	63	63			
27	Direct agricultural loss attributed to disasters	65	65	65	65			
28	Crop loss due to climate extremes	67	67	67	67			
29	Impact of climate change on livestock productivity	69	69	69	69			
30	Growing degree days	71	71	71	71			
31	Forest area as a proportion of total land area	73	73	73	73			

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Introduction

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Data sources and methodological development



Defining climate change questions for surveys and censuses

A sub-group of experts of the Expert Group on Environment and Climate Change Statistics (EG-ECCS) is working to develop a core set of climate change questions which can be included in censuses and surveys to inform a number of indicators and statistics in the Global Set as well as the 2030 Sustainable Development Agenda and Beyond.

Members of the sub-group

Country/Organization	Title/Designation
Cabo Verde, INE	Official Environmental Statistics Technician
Italy, ISTAT	Head of Division of Environmental Statistics
Italy, ISTAT	Senior Researcher (Climate and Gender)
Mexico, INEGI	Director
Nepal, NSO	Director, Environment Statistics Section
Suriname, GBS	Statistician at the Scientific Research and Development
Tanzania, NBS	Director of Population Census and Social Statistics & Chairperson of the EGES
Uganda, UBoS	Senior Statistician (Environment)
ECLAC	Chief Environment and Climate Change Statistics Unit, Statistics Division
SPC	Statistics Advisor (SDGs)
UNFCCC	Manager, Transparency Division
UN Women	Regional Advisor on Gender Statistics (Climate and Gender)
Burundi	Independent Expert on Environment Statistics
Jamaica	Independent Consultancy
Mauritius	Consultant

Deliverables and outputs include:

- Compilation of existing questions from censuses and surveys
- Compilation of new questions
- Building a core set

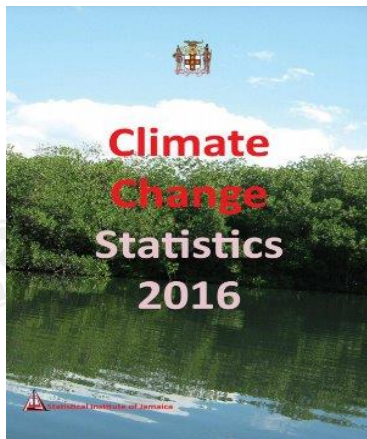
Integrating gender and climate change statistics

- Mandate from the Statistical Commission requesting that a gender perspective be adopted and integrated into all the agenda items of the Commission
- The Expert Group has been addressing the subject since 2022. At the 10th meeting in 2023 group work session allowed for peer review of latest advancements on the nexus between climate change and gender statistics
- Gender Statistics is also on the agenda of the Commission and the respective report of the Secretary General (https://unstats.un.org/UNSDWebsite/statcom/session_55/documents/2024-14-GenderStats-E.pdf) mentions the collaboration between the Inter-Agency and Expert Group on Gender Statistics (IAEG-GS) and EG-ECCS.
- The EG-ECCS and UNSD plan to continue collaboration with IAEG-GS and UN Women-Asia Pacific taking into account the important methodological developments in the areas of climate and gender led by these agencies.

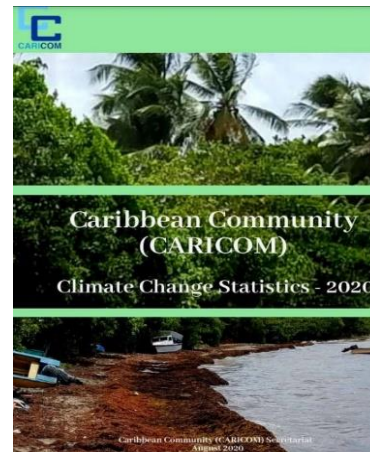
Some successes in the Region

- Jamaica – STATIN was the first NSO in the world to produce a climate change statistics report in 2016
- CARICOM – first regional climate change statistics report in 2020
- Suriname – NSO published its first climate change statistics report in 2023 using the Global Set
- Suriname planning to include climate change questions in its Population and Housing Census in 2024

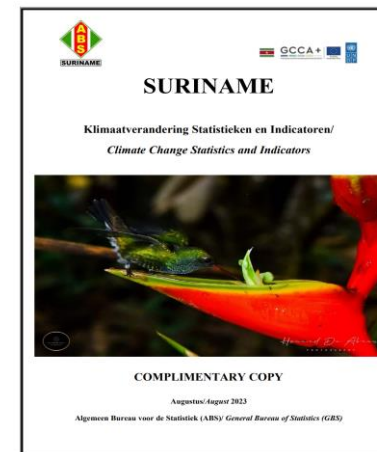
Jamaica



CARICOM

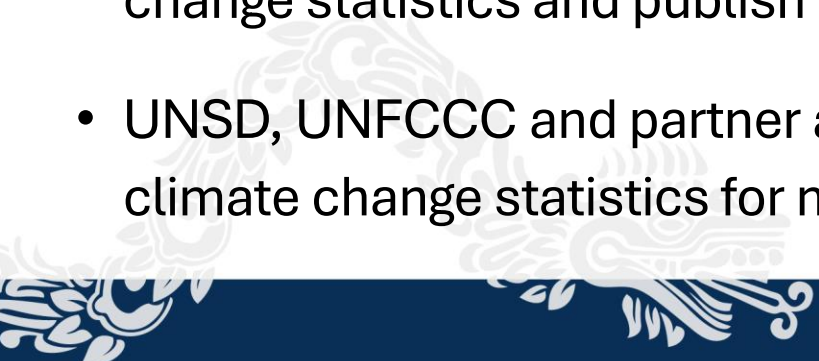


Suriname



The way forward

- UNSD is committed to assist countries in developing environment and climate change statistics programmes.
- With the adoption of the Global Set and the development of the Guidelines and the CISAT, UNSD envisages that countries will be equipped to establish and strengthen their national programmes.
- UNSD, in collaboration with UNFCCC and the Expert Group on Environment and Climate Change Statistics, will continue to refine the methodologies unpinning the indicators and further develop the climate and gender nexus and climate related questions for censuses and surveys.
- Countries are encouraged to implement the Global Set, develop national programmes on climate change statistics and publish climate change reports.
- UNSD, UNFCCC and partner agencies stand ready to support countries in the process of improving climate change statistics for monitoring related policies at national, regional and global levels.





Thank you



For more information please contact the Environment Statistics Section
at the United Nations Statistics Division:

E-mail: envstats@un.org

Website: <https://unstats.un.org/unsd/envstats/>



Additional resources

- **FDES:** <https://unstats.un.org/unsd/envstats/fdes.cshtml>
- **ESSAT:** <https://unstats.un.org/unsd/envstats/fdes/essat.cshtml>
- **Data collection:** <https://unstats.un.org/unsd/envstats/datacollect>
- **EG-ECCS:**
https://unstats.un.org/unsd/envstats/fdes/fdes_eges.cshtml
- **Reports and compendia on:**
 - environment statistics:
<https://unstats.un.org/unsd/envstats/fdescompendia.cshtml> and
 - climate change statistics:
https://unstats.un.org/unsd/envstats/climatechange_reports.cshtml
- **UNFCCC Operationalization of the Enhanced Transparency Framework:** <https://unfccc.int/enhanced-transparency-framework>