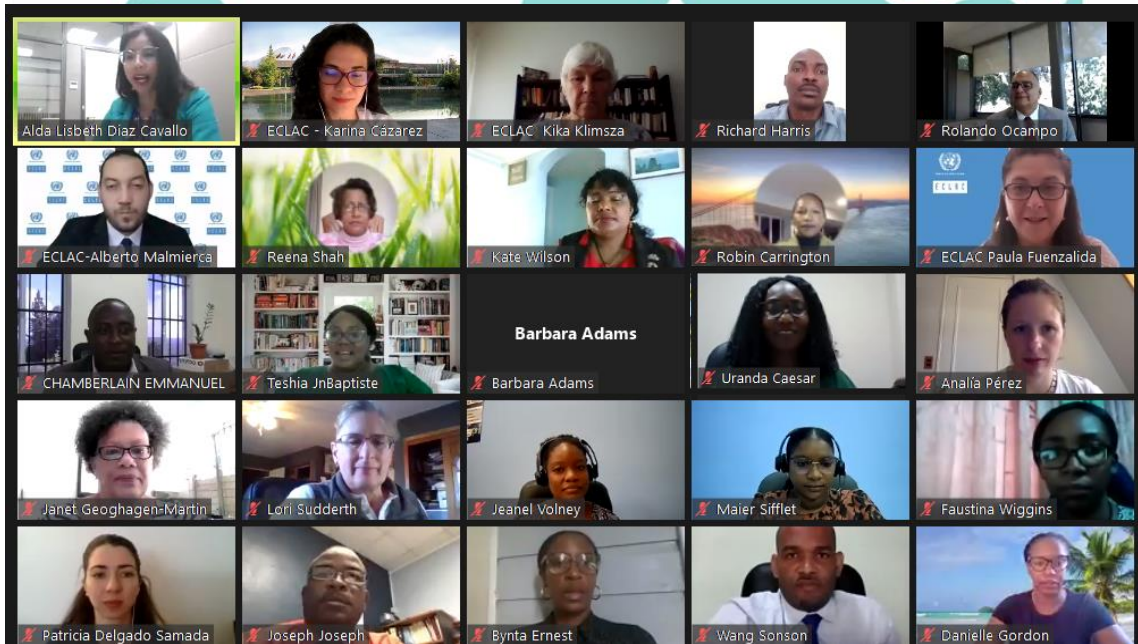


National online workshop: Generating climate change and disasters indicators for policy decision-making in Saint Lucia



November 2021



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I. The workshop in numbers



3 days of workshop
16 – 18 Nov 2021



48 registered participants
from **24** different national
institutions



3 indicators - and their Methodological
Sheets - on climate change and
disasters built during the workshop

II. Objectives of the workshop

- Train the participants to build selected environment, climate change and disasters indicators and its metadata.
- Identify data and capacity gaps to improve the Environmental Information System (EIS) and build a regional resilience platform.
- Have a better understanding of how geospatial data can enhance the use of environment, climate change and disasters indicators for effective decision making.

III. Main outcomes of the workshop

- Three indicators and their methodological sheets were developed during the workshop. These indicators correspond to the Drivers, Impact, and Adaptation areas of the schematic framework developed by the IPCC that summarizes the complexity of climate change as a sequence of events:
 - I. **Drivers** - Total greenhouse gas emissions per year
 - II. **Impacts** – Temperature record
 - III. **Adaptation** - Municipal waste collected per capita in Saint Lucia
- A **list of relevant and prioritized climate change and disasters indicators for Saint Lucia** that are also linked to the Paris Agreement and the Sendai Framework, and the Global Set on Climate Change Indicators and Statistics of the UNSD.
- A space for **Inter-institutional cooperation** was enabled as the Central Statistical Office of Saint Lucia and the Ministry of Education, Sustainable Development, Innovation, Science Technology and Vocational Training had the opportunity to interact with stakeholders from various key sectors on environment, climate change and disasters statistics from other line ministries, the meteorological and fire services, civil society organizations and the private sector.



IV. Summary of the sessions

DAY 1

0. Inaugural session and introduction to the workshop

The authorities from the Statistics Division of the Economic Commission for Latin America and the Caribbean (ECLAC), the Environment Statistics Section of United Nations Statistics Division (UNSD), the CARICOM Secretariat, the Ministry of Education, Sustainable Development, Innovation, Science Technology and Vocational Training, and the Central Statistical Office of Saint Lucia opened the workshop by welcoming the participants and highlighting the following aspects:

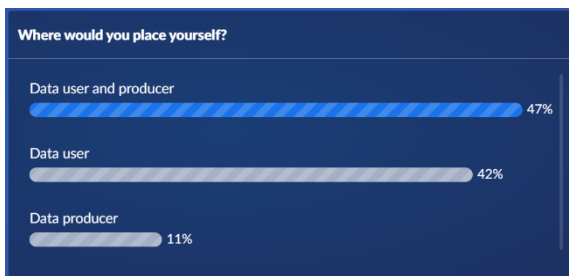
- **Environment and climate change statistics for policy making in Saint Lucia** – it is a national priority to identify the best strategies required to become climate resilient. Environment and climate change statistics are crucial to assist policy makers in making informed decisions towards implementing relevant legislations, policies, strategies, and action plans.
- **The National Environmental Information System** – the NEIS of Saint Lucia has been put in place to support reporting of the UN Framework Convention on Climate Change (UNFCCC), the UN Convention on Biological Diversity (CBD), the UN Convention to Combat Desertification.
- **The need for an integrated national statistical system** – data gaps, restricted data sets, limited data access, inefficient data collection and compilation processes need to be addressed to build an integrated national statistical system capable to provide the reliable, valid, and quality statistics to combat climate change and misinformation.
- **Saint Lucia's commitment to environment and climate change statistics** - Despite the limitations caused by the pandemic, as evidenced by this workshop, Saint Lucia strives to continue to progress in monitoring the environment and climate change. The National Adaptation Plan and the National Environmental Information System indicates that the country has taken actions to minimize the effects and consequences of climate change. At the regional and international levels, Saint Lucia has actively participated in workshops and contributed to the global work by submitting its responses on the Global Consultation of Climate change statistics and indicators led by UNSD.
- **The importance to incorporate existing regional frameworks** – these frameworks outline the concerns, issues, and actions to take in the Caribbean disasters and climate change context. This approach will contribute to generating more effective indicators to inform decision making and policies for the region and the individual countries.
- **A call for urgent yet coherent multidimensional approach** to adaptation and resilience-building at national and regional levels. A three-pathway strategy to achieve this in the region includes improving access to data and information to increase actionable climate knowledge. These foresee consolidating a regional platform for tracking climate aspects, a regional plan, and awareness-raising campaigns.



After the inaugural session, participants had the opportunity to share with the audience, through a polling platform, insights about their professional background. Figures 1 and 2 below highlight the main results obtained from the poll. Most of the participants were both data users and producers, and most of them were experts on economics and sustainable development matters.

Figure 1: Who is attending the workshop data users or producers?

Figure 2: Participants professional experience



1. Climate change and disasters indicators for Saint Lucia: Needs and priorities

- Saint Lucia’s Climate Change Policy Framework.** The country ratified to UNFCCC (1993), is a member of the Kyoto Protocol & Doha Amendment (2003 & 2018) and the Paris Agreement. At the regional level, Saint Lucia has agreements on the Regional Framework for Achieving Development Resilient to Climate Change, the Implementation Plan for the CARICOM Regional Framework for Achieving Development Resilient to Climate Change (2011 – 2021), the Saint George’s Declaration 2040, and the Escazú Agreement.
- Saint Lucia’s National Frameworks on Climate Change.** Saint Lucia is guided by the National Environment Policy (revised 2014), the National Environmental Management Strategy (revised 2014), the SLU Climate Change Adaptation Policy (2015), the Nationally Determined Contribution (updated 2020), and the National Adaptation Plan (2018 – 2028), the 2030 Agenda, the Medium-Term Development Strategy (2020 – 2023), and the Sectoral Adaptation Strategy & Action Plans (2018 – 2028).
- M&E Plan of Saint Lucia’s National Adaptation Planning Process.** It is expected that aside from the annual M&E of the NAP, the NAP and Sectoral Adaptation Strategy & Action Plans will be reviewed overall at least once during the 2018 – 2028 period. The NAP has a monitoring framework, and although not all are easily quantifiable, it is possible to measure its performance.
- National data and indicators for reporting.** There is a need for reliable, accessible, consistent, and shared data for reporting on the progress of the national, regional, and global agendas and protocols on Climate Change and Multi-lateral Environmental Agreements (MEAs).
- The Global Set of Climate Change Statistics and Indicators.** The global set of climate change statistics and indicators will serve as a framework with statistics, indicators, and metadata to support countries in preparing their own sets of indicators according to their priorities and



resources. Likewise, the set contains multi-purpose indicators to report to various global agendas such as the Paris Agreement, the SDGs, and the Sendai Framework.

- **Climate change and disasters statistics and indicators in the Caribbean.** Work on environment statistics in the Caribbean community started in 1999 through a UNSD/CARICOM project. Since then, various countries such as Belize, Jamaica, Suriname, and Saint Lucia have strengthened their capacities to produce environment and climate change and disasters statistics and indicators. One of the main products of these efforts is the regional publication on environment statistics, first published in 2002. There is also a CARICOM Advisory Group on Statistics and a CARICOM Programme in Environment and Social/Gender Statistics. Currently, CARICOM is working on strengthening the compilation of Agriculture, Gender and Environment statistics in the region.

2. What is needed to produce climate change and disaster statistics and indicators?

- **The Framework for the Development of Environment Statistics (FDES).** The FDES is a tool to support strengthening capacity to develop environment statistics in countries. Using a common statistical framework, helps to enhance comparability and availability of environment statistics. The framework covers issues and aspects of the environment relevant for policy analysis and decision-making, such as climate change. Embedded into the FDES is the Basic Set of Environment Statistics, a set of statistics to support countries to prioritize the development of environment statistics. Another tool derived from the FDES is the Environment Statistics Self-Assessment Tool (ESSAT) which can assist countries in diagnosing the state of their environment statistics and national needs.
- **Data, statistics, and indicators.** Although often used as a synonym, data, statistics, and indicators are different. Transforming data into statistics requires the application of a statistical processing operation based on validation rules and quality standards. Once statistical series are available, these are used as inputs to build indicators. Production of statistics and indicators must be demand-driven, led by national policies and objectives.
- **Relevant statistical classifications and typologies.** Statistical classifications are a set of discrete, exhaustive, and mutually exclusive categories that describe the characteristics of a particular population. Classifications and typologies are necessary to ensure the comparability of statistics between countries and within a country.
- **The geospatial dimension of environment, climate change and disaster statistics and indicators.** Geospatial information allows better understanding of where and what phenomena are occurring. The ability to analyse and find spatial patterns in data to provide powerful insights for decision-making is possible through a combination of local data and geospatial tools. Different sources such as cartography, census and surveys, administrative records, remote sensing, monitoring stations, scientific research, modelling, and crowdsourcing are used to produce geospatial environment, climate change and disasters information for decision-making.



Some of these sources are open data, for example, Amazon web services¹ and Google Earth Engine².

- **The Escazú Agreement.** A Regional Agreement on Access to Information, Public Participation and Justice in Environmental Matters in Latin America and the Caribbean was entered into force on 22 April 2021 and is open to the 33 Latin American and Caribbean countries. The Agreement offers strategic guidance for policy formulation and environmental governance and focuses on making environmental information available for policymaking. There is a strong emphasis on capacity building and cooperation.
- **Types of data sources used in Saint Lucia: strengths and weaknesses.** Statistics and indicators are essential for evidence-based decision-making and monitoring the progress of various sustainable development agendas, adhering to international obligations, supporting public awareness, and identifying potential threats as early as possible. Available quality statistics and indicators are also crucial to secure funding from international organizations on relevant projects for climate change.

The following are the most common data sources used in Saint Lucia:

- Statistics surveys - surveys provide a high level of representation and are easy to administer. In some cases, a particular module on environment has been integrated into existing questionnaires, for example, in the population census, to capture that type of data. But they can be subject to inaccurate responses, misinterpretation and there can be a high respondent burden.

- Administrative records – access to data is rarely possible in the absence of surveys, it is cheaper to obtain, and it can be linked to data from various sources for validation. However, data might be challenging to access. Since it is collected for a different purpose, it may not fit the required criteria leading to measurement errors, missing values, or inaccurate classifications.

- Remote sensing and thematic mapping – these sources are relatively cheap, easy to collect and provide extensive coverage of information about spatial patterns and specific topics. Some weaknesses are that its management may require special training, and a large amount of data is needed for accuracy.

- Monitoring systems – water level radar sensors, solar panels, rain gauges, and data loggers are relevant monitoring systems. Data can be collected using verifiable scientific methods for early warning signs and strategic decisions. However, systems are usually located in highly sensitive areas, and procurement of relevant software is necessary.

¹ <https://aws.amazon.com/es/earth/>

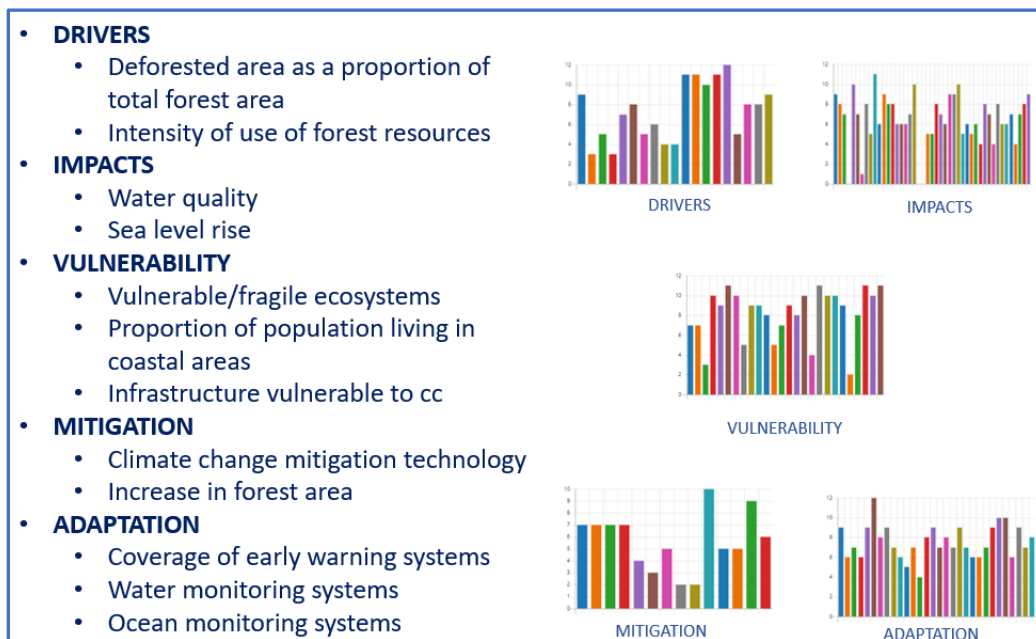
² <https://earthengine.google.com/>

DAY 2

3. Results from homework activities

Through a homework activity, participants identified relevant and prioritized climate change and disasters indicators for Saint Lucia. They reviewed the list of 134 indicators of the Global Set of Climate Change indicators and selected those they considered relevant for the country and the institutions they were representing. Figure 3 summarizes the exercise results by identifying the two most relevant indicators per area of the schematic framework developed by the IPCC. Some of the prioritized indicators were built during the workshop, and the results of the exercise strengthened further results from a more comprehensive consultation process already carried out by the Central Statistical Office of Saint Lucia.

Figure 3: Homework results: Selection of the most relevant climate change and disasters indicators for Saint Lucia from the Global Set of Climate Change indicators



4. How to produce climate change and disaster indicators?

- Statistical processing.** Transforming data into statistics and indicators requires a comprehensive process that involves data collection, validation, structuring, description, a compilation of statistical series, selection and processing of statistics, aggregation, and a combination of different statistics to build an indicator. Environmental, climate change and disasters data can be obtained from various sources such as censuses, surveys, administrative records, remote sensing, monitoring systems, scientific research and estimation and modelling. Data validation encompasses several steps and different techniques and criteria according to the data source and theme. Another critical step is elaborating metadata to provide the data users with information about the statistics (e.g., definitions, units, survey methods, etc.).



- **ECLAC’s methodology to produce environment, climate change and disasters indicators.** ECLAC’s methodology is based on an inter-institutional collaborative approach. The method to build indicators consists of three stages. First, the preparation stage involves training and review of institutional context and conceptual frameworks. The second stage covers the design and building of an indicator set. And lastly, the third stage corresponds to the institutionalization and updating process of the built indicators.

Insights from the Q&A and discussion session:

- **The need for a multidisciplinary team when developing environment, climate change and disasters indicators** - Statistics are a critical component for the development of indicators. Familiarity with the statistics required to build a specific indicator is crucial to understand and validate the primary data. Hence, having thematic experts in the team in charge of developing the indicators to provide a consistent technical vision.

5. Building selected indicators with national data (Part I)

In this practical session, participants were divided into three groups where they worked together and used national data to build the following climate change and disasters indicators based on three of the five areas of the IPCC framework:

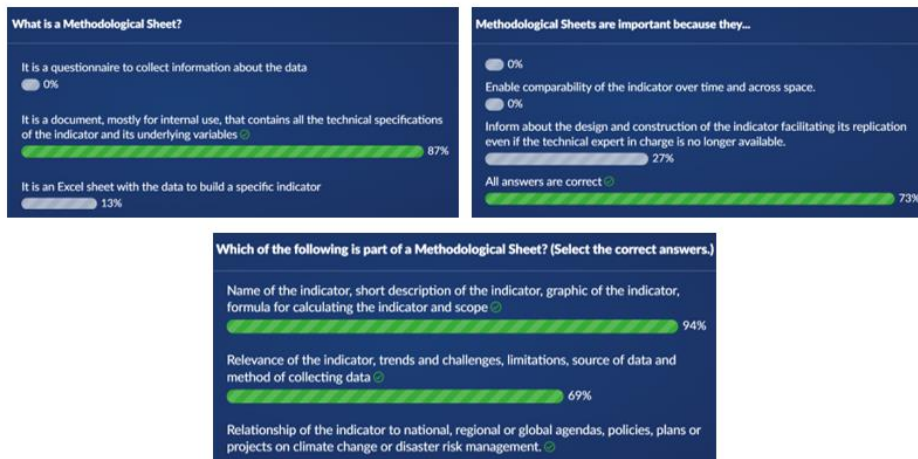
- I. **Drivers** - Total greenhouse gas emissions per year
- II. **Impacts** – Temperature record
- III. **Adaptation** - Municipal waste collected per capita in Saint Lucia

DAY 3

6. Results of quiz on Methodological Sheet

On the third day, participants started the workshop by answering an interactive quiz related to the methodological sheet. This activity allowed participants to define a methodological sheet, understand its relevance, and identify the aspects contained in a methodological sheet. Figure 4 shows (in the green bars) that most of the participants who took part in the activity answered all questions correctly.

Figure 4: Methodological sheet quiz results



7. Methodological Sheets for climate change and disasters indicators

- **Going through the content of a Methodological Sheet** – participants were guided through all twenty-one fields that form the methodological sheet template proposed by ECLAC. These fields cover content such as the name, description and characteristics of the indicator, its scope, limitations, relevance, graphical representation, periodicity, and other relevant information to the indicator's data.

Insights from the Q&A and discussion session:

- **When to create a proxy indicator** – In cases where the exact variables of an indicator as specified in global, regional or national frameworks are not available, proxy indicators are helpful. These indicators will show similar information, but since they are not built using the exact same variables, it is called proxy because it approximates the demanded indicator as specified in the metadata.
- **How a regional indicator can be calculated using national data** – Depending on the topic of the indicators and their variables, when aggregating indicators from various countries, these indicators can be averaged, summed up or shown independently.



8. Building selected indicators with national data (Part II)

This last session was a practical exercise where participants were divided into three working groups to develop the methodological sheets of the indicators, they had built the previous day. The three methodological sheets were then presented in plenary by a representative of the team.

Closing remarks

Representatives from ECLAC's Statistics Division, Central Statistical Office of Saint Lucia, and the Sustainable Development Department of the Ministry of Education, Sustainable Development, Innovation, Science Technology and Vocational Training and some of the participants closed the workshop by expressing their gratitude to all the participants for their work during the three-day workshop and emphasise the following aspects:

- **Having more space for inter-institutional collaboration is crucial for robust indicators** – data generated within institutions is often used within the institutions themselves and shared with international organizations for the development of specific indicators, but spaces for technical discussions with other related and key agencies at the national level are needed to strengthen further inter-institutional collaboration demanded by environment, climate change and disasters indicators.
- **Multi-disciplinary representation** – building environment, climate change and disasters indicators and their methodological sheets requires experts of different disciplines working together. This is particularly important during the first stages of the process where scope and limitations of the indicator are defined.
- **The importance of evidence-based data and information** – Saint Lucia is not exempted from the effects of climate change. Sea levels are rising, there is an increase in hurricanes and storms, higher temperatures, and significant damage to the coral reefs. Having better indicators is vital to design, monitor and evaluate the policies and actions to mitigate these effects and build resiliency. Organizations, ministries, and departments linked to environment and climate change as well as the Statistics Office play a critical role as producers and compilers of the necessary data for those indicators.



V. Useful links

- **Workshop materials** (agenda and presentations): <https://www.cepal.org/en/events/saint-lucia-national-workshop-generating-climate-change-and-disasters-indicators-policy>
- **Manual 61:** Methodological Guide for developing Environmental and Sustainable Development Indicators in Latin American and Caribbean countries: https://www.cepal.org/sites/default/files/publication/files/37890/SLCL3021_en.pdf
- **Framework for the Development of Environment Statistics (FDES):** <https://unstats.un.org/unsd/envstats/fdes.cshtml>
- **Basic Set of Environment Statistics:** <https://unstats.un.org/unsd/envstats/fdes/basicset.cshtml>
- **Environment Statistics Self-Assessment Tool (ESSAT):** <https://unstats.un.org/unsd/envstats/fdes/essat.cshtml>
- **Global Set of Climate Change Statistics and Indicators:** https://unstats.un.org/unsd/envstats/ClimateChange_StatAndInd_global.cshtml
- **Saint Lucia's National Adaptation Plan :** <https://www4.unfccc.int/sites/NAPC/Documents/Parties/SLU-NAP-May-2018.pdf>
- **Saint Lucia's Sectoral Adaptation Strategy & Action Plans (2018 – 2028):** <https://napglobalnetwork.org/in-country-support-program/saint-lucia/>