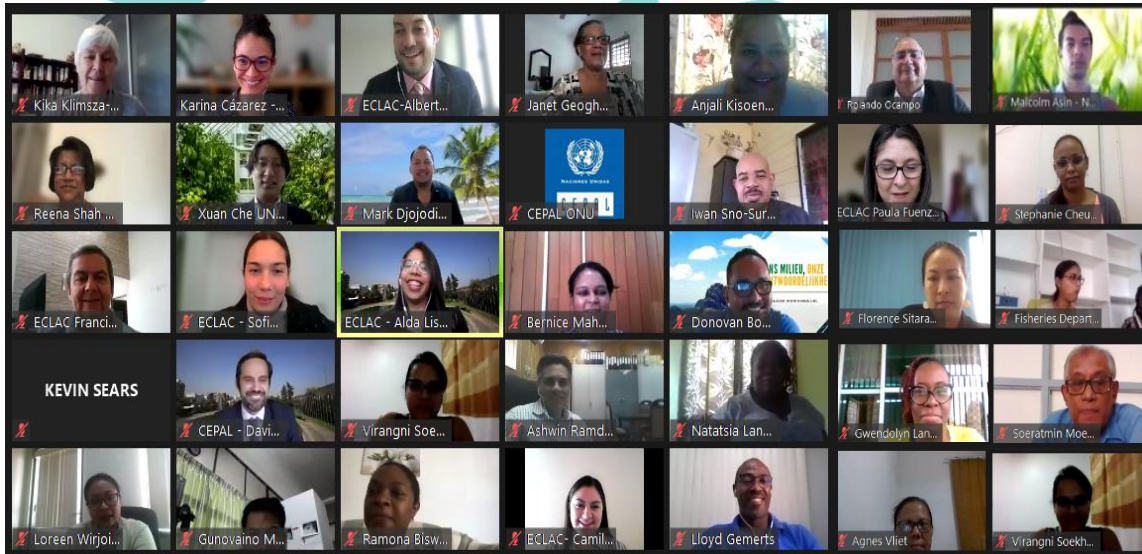


DA12 project national online workshop summary report: Generating climate change and disasters indicators for policy decision-making in Suriname



July 2021



Content

I.	The workshop in numbers.....	2
II.	Objectives of the workshop	2
III.	Main outcomes of the workshop	2
IV.	Summary of the sessions.....	3
	DAY 1	3
	0. Inaugural session and introduction to the workshop	3
	1. Climate change and disasters indicators for Suriname: Needs and priorities	4
	2. What is needed to produce climate change and disaster statistics and indicators?	5
	DAY 2	6
	3. Results from homework activities.....	6
	4. How to produce climate change and disaster indicators?	6
	5. Building selected indicators with national data (Part I)	8
	DAY 3	8
	6. Results of quiz on Methodological Sheet.....	8
	7. Methodological Sheets for climate change and disasters indicators.....	9
	8. Building selected indicators with national data (Part II)	9
	Closing remarks	9
V.	Useful links	11

I. The workshop in numbers



3 days of workshop
13 – 15 July 2021



51 registered participants
from **14** different national
institutions



5 indicators on climate
change and disasters built
during the workshop

II. Objectives of the workshop

- Train the participants to build selected environment, climate change and disaster indicators and its metadata.
- Identify data and capacity gaps to build an information platform on resilience for the country (statistics and geospatial data).
- Have a better understanding of how geospatial data can enhance the use of environment, climate change and disaster indicators for effective decision making.

III. Main outcomes of the workshop

- Five indicators and their methodological sheets were developed during the workshop. There is one indicator per area 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
 - II. **Impacts** - Population reported being affected by a disaster due to extreme weather per 100,000 population
 - III. **Vulnerability** - Proportion of households in Paramaribo and Wanica using improved water sources, 2015-2019
 - IV. **Mitigation** - Increased forest area
 - V. **Adaptation** - Municipal waste collected per capita in Suriname
- A **list of relevant and prioritized climate change and disasters indicators for Suriname** that are also linked to the Paris Agreement and the Global Framework on Climate Change Indicators and Statistics of the UNSD.
- **Inter-institutional cooperation** was strengthened as GBS, NIMOS and the related stakeholders on some key aspects such as energy, disasters, water quality and health started a conversation that led to follow-ups after the workshop.
- A **work plan** to further strengthened selected climate change and disasters indicators in Suriname.

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 and the General Bureau of Statistics of Suriname (GBS) opened the workshop by welcoming the participants and highlighting the following aspects:

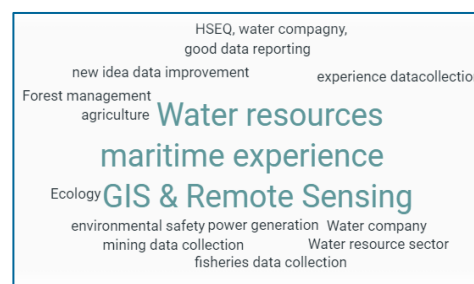
- **Suriname’s commitment to environment and climate change statistics** - Despite the limitations caused by the pandemic, Suriname strives to continue to achieve progress in monitoring the environment and climate change. Suriname’s work, firm commitment, and advances in environment statistics set an example for developing the environment and climate change statistics and indicators at the regional and global levels.
- **Enabling inter-institutional collaboration** - Strong inter-institutional collaboration at the national level is critical for effective production and use of climate change and disaster statistics and indicators to face the challenges imposed by global warming. The workshop brings data users and producers from different institutions to work together in response to this need.
- **Building quality climate change and disasters indicators** – One of the GBS’s achievements is a continuous publication of environment statistics compendia. Having relevant, accurate, accessible, and comparable statistics and indicators requires resources and constant work. The workshop will allow participants to work with national data, a critical aspect for strengthening statistical capacity in line with the ECOSOC resolution 2006/06.

After the inaugural session, participants had the opportunity to share with the audience, through a polling platform, their expectations from the workshop as well as the skills and expertise they were bringing to the workshop. Figures 1 and 2 below highlight the main results obtained from the poll. Participants expected to improve knowledge sharing and strengthen capacity building. And in terms of skills and expertise, GIS & Remote Sensing, water, and maritime expertise were among the most popular.

Figure 1: What do you expect from this workshop?



Figure 2: What skills and expertise do you bring to the workshop?



1. Climate change and disasters indicators for Suriname: Needs and priorities

- **Effects of climate change are affecting citizens' well-being in Suriname.** Agricultural areas and crops are being destroyed mainly due to extreme weather events, causing food prices to rise. Satellite image evidence shows that some areas of Paramaribo have lost about 15% of land in the past 15 years due to sea-level rise. The combination of sea-level rise with extreme weather events will significantly impact many sectors in Suriname.
- **Quality indicators for smart decision-making.** Effective policies to protect citizens and national assets from the effects of climate change require planning and strategic design with structured timelines tailored to the national needs. To this end, solid and sustained data is necessary for policy planning, formulation, implementation, and monitoring and evaluation. For example, having an overview of the historical data and trends in ambient temperature and rainfall will help to formulate measures to prevent catastrophes.
- **The environment information network of Suriname.** The National Institute for Environment and Development in Suriname (NIMOS) has created the Suriname Milieu Informatie Network (SMIN) in response to the Environmental Act, which gives NIMOS the mandate to have a platform, along with GBS, to establish a structured approach data gathering. This platform aims to bring together all relevant environmental data for the country and make it available to policymakers.
- **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, and Suriname 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.
- **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, including Suriname. Suriname is encouraged to explore the possibility of joining and leverage the advantages of the Agreement. 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. Suriname can access further benefits as there is a special consideration for Small Island Developing States (SIDS), and the country could benefit directly from financing, resources, and south-south cooperation.

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.
- **Types of data sources used in Suriname: strengths and weaknesses.** Environmental, climate change, and disasters data sources in Suriname are mainly censuses and household surveys produced by GBS and data from line ministers and national agencies. The Statistics Act facilitates data availability as it gives the mandate to GBS to collect environment statistics. GBS publishes environment statistics regularly through their Environment Statistics publication³. There is good collaboration between GBS and environment stakeholders, which facilitates data sharing and validation processes. However, since censuses and most surveys are updated every 5 to 10 years, available data is often outdated. There is also a lack of financial resources to conduct surveys

¹ <https://aws.amazon.com/es/earth/>

² <https://earthengine.google.com/>

³ <https://statistics-suriname.org/wp-content/uploads/2021/03/Final-9th-environment-pub-2020.pdf>

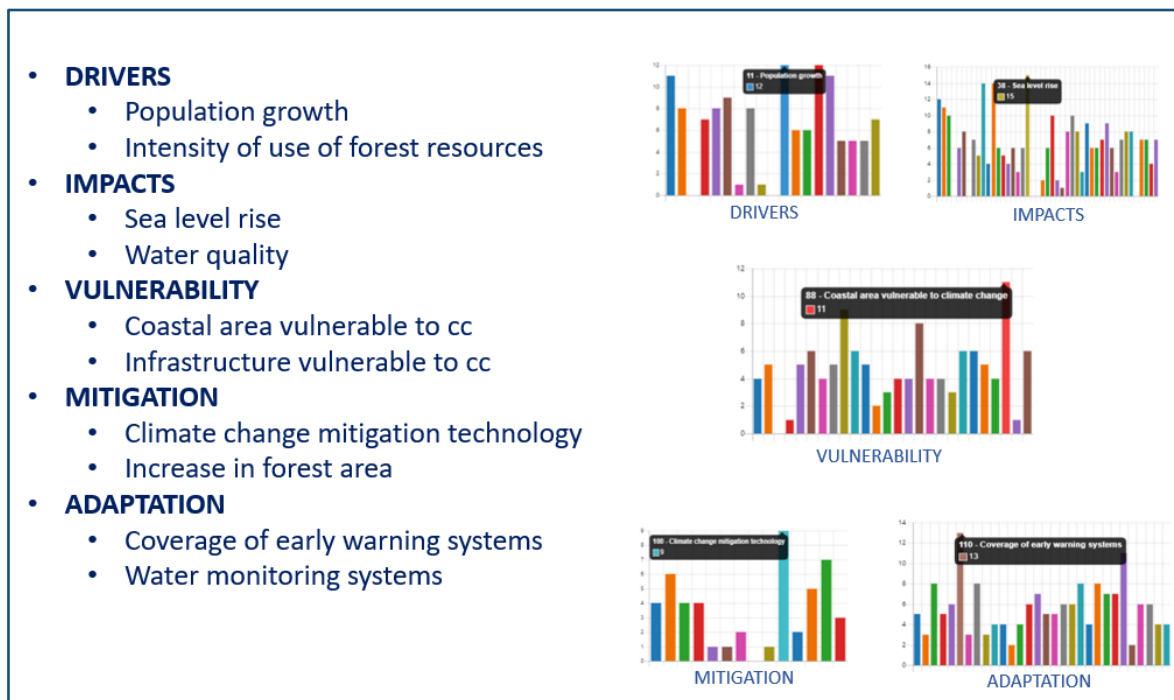
more frequently. Common challenges associated with administrative data are lack of metadata, lack of knowledge and understanding of the indicators and statistics, high staff turnover, and lack of disaggregation by sex, location, age, etc. COVID-19 has added another layer of complexity to existing challenges on data collection processes. However, GBS expects to overcome some of those challenges and collect more data on climate change for the next environment statistics publication in 2022.

DAY 2

3. Results from homework activities

Through a homework activity, participants identified relevant and prioritized climate change and disasters indicators for Suriname. 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 GBS.

Figure 3: Homework results: Selection of the most relevant climate change and disasters indicators for Suriname 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:

- **Understanding how data is used might lead to better data sharing practices** - one of the biggest challenges is that data providers do not always share their data in a format that is useful for GBS to build specific indicators. There is a need to raise awareness of the importance of data that various national stakeholders provide to GBS. Data providers are often unaware of how the data is used. A better understanding of the indicators built with the information they provide and their importance to the country and the international level might help improve data sharing practices. It was recommended that the various data providers and GBS hold regular information sessions regarding the data used to better understand the value of the data.
- **Why indicators classified as drivers have fewer data gaps** - More data is available for those indicators classified as drivers (i.e., greenhouse gas emissions, energy consumption, production of electricity and use of fossil fuels) because these are data collected over many years regularly by NSOs and agencies that provide this type of data.
- **Improving data processing using modern technological resources is key to data availability** - for some stakeholders, there is an issue with the data processing methods. There is a lack of funds to acquire information technology devices to establish a digital data system. It is difficult for stakeholders to provide more data because most of it is paper based. Data collection surpasses the data shared with GBS, but unfortunately, it has not been possible to leverage it due to a lack of digital infrastructure. NIMOS will explore the possibility to collaborate to improve such requirements.
- **A strong link between health and climate change data** – health aspects on climate change indicators are sometimes underestimated. Health is a cross-cutting issue when it comes to climate change. Hence, providing health data to GBS will help to strengthen climate change indicators. There is a strong need to develop a Health Information System, based on the data

that are already collected by many different institutions. Health data need to be validated and standardized and harmonized using international classification.

- **The power of data to influence policy decision-making** – in Suriname, politicians and the parliament have been using the environment statistics publication to inform their statements. Focusing on having more data available and improved publications can lead to have informed and evidence-based decision-making on all different sectors relevant to the environment, climate change and disasters.

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

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

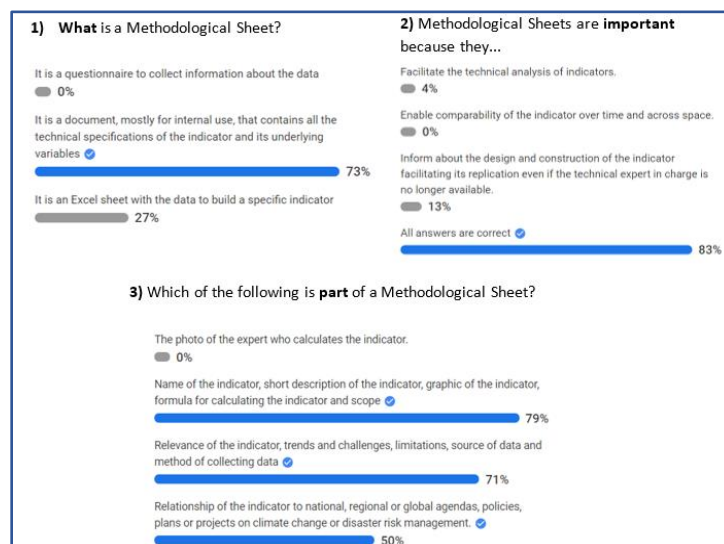
- I. **Drivers** - Total greenhouse gas emissions
- II. **Impacts** - Population reported being affected by a disaster due to extreme weather per 100,000 population
- III. **Vulnerability** - Proportion of households in Paramaribo and Wanica using improved water sources, 2015-2019
- IV. **Mitigation** - Increased forest area
- V. **Adaptation** - Municipal waste collected per capita in Suriname

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 blue 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:

- **Integrity of the data** – integrity is given by the quality control through which the data is processed to become statistics. For example, when data comes from a survey conducted by the National Statistical Office, it is assumed that data has been validated by the NSO, using strict and high-quality standards resulting in quality statistics. Many statistical offices use quality frameworks or implement the General Statistics Business Process Model to ensure quality and good coverage of the data. There is a need of more exchanges between data producers and data users to explain methodologies and quality control proceedings.

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

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

Closing remarks

Representatives from ECLAC's Statistics Division, UNSD Environment Statistics Section, and GBS closed the workshop by expressing their gratitude to all the participants for their work during the three-day workshop and to the organizing team from ECLAC that, in collaboration with GBS, put together the agenda and activities of the workshop. Further, they emphasized the following aspects:

- **Importance of national stakeholders' contributions** – providing environment data to GBS is crucial for national policy and fulfilling regional and international reporting obligations.
- **Workshop outputs useful for the next Environment Statistics publication** – the workshop signalled a closer collaboration, nationally, regionally, and internationally for producing an improved next Environment Statistics publication for Suriname by including high quality climate change and disasters indicators.
- **Suriname's efforts set up an example in the region** - the regional and international community welcomes Suriname's efforts. It is constantly advancing its statistical products by enhancing the quality of the Environment Statistics publication and its plans to produce a Climate Change Statistics publication.
- **Next steps:** ECLAC and GBS will continue working together to strengthening climate change and disasters statistics and provide recommendations to enhance data production and use of selected indicators as well as data gaps in relevant areas. As a follow up of the workshop ECLAC



team will share feedback with the participants on the Methodological Sheets prepared during the workshop and explored the possibility of building other selected indicators.

V. Useful links

- **Workshop materials** (agenda, presentations and summary report):
<https://comunidades.cepal.org/estadisticas-ambientales/es/grupos/evento/generating-climate-change-and-disasters-indicators-policy-decision-making-suriname>
- **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