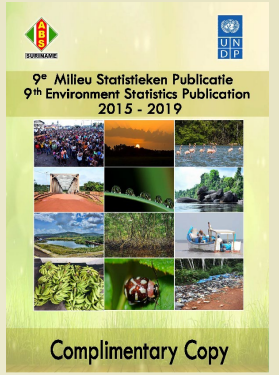

Suriname's Experience with applying the Global Set

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1: Selected Frameworks Global Set

- The Global Set contain selected indicators from the following international frameworks that GBS also uses as guidelines:
- **a)The FDES indicators:** GBS has experience with the FDES 2013 and has published 9 Environment Statistics Reports where the FDES is used as one of the main guidelines. The 10th will be published in December 2022. https://statistics-suriname.org/milieustatistieken-4/

- **b) The SDGs**: Being a member of the CARICOM technical working group on SDGs, GBS has experience with the SDGs and started collecting data since 2016. GBS was also a member of the VNR committee and the National SDG committee.
- https://statistics-suriname.org/wp-content/uploads/2022/08/VNR-2022-Suriname-Report.pdf

- **c)UNFCCC- GHG related indicators** (Suriname submitted two National Communications (2006 & 2008), and the third National Communication will be submitted in December 2022 and will contain GHG data for the period 2000-2017). https://unfccc.int/sites/default/files/resource/Surnc2rev.pdf

- d)SENDAI Framework

- e)SEEA,
- Etc.

2: IPCC areas


Drivers
Total greenhouse gas (GHG) emissions, Atmospheric concentration of greenhouse gases, Energy production, supply and consumption, Fossil fuels, Population, Transport and Land and agriculture
Impacts
Agricultural production affected by climate change, Areas affected by climate change, Freshwater resources, Hazardous events and disasters, Climate change and human health, Climate change evidence, Soil condition, Distribution and status of species, Distribution and status of ecosystems, Production and consumption of materials , Climate change impacts on transport and critical infrastructure &Climate change impacts on tourism
Vulnerability
Water security, food security and agriculture, Vulnerable species, ecosystems and their services, Buildings and infrastructure vulnerable to climate change, Vulnerable population & Area of country vulnerable to climate change
Mitigation
Renewable energy, Climate change mitigation policies, strategies and plans, Climate change mitigation technology and practice
Adaptation
Climate change adaptation policies, strategies and plans, Risk management, disaster forecasting and early warning systems, Climate change public awareness and education, Area-based adaptation to climate change, Climate change monitoring, Water management and Waste management.

3. Data collection Global Set (1)

- **The Environment Statistics reports (see page 7)**

- **Climate Change Policy Reports in Suriname (see page 6)**

- **Population data**

✓ **Censuses** (Population and Housing Census & Agricultural Census)

✓ # 17**:** Population growth, # 18:Urban population (% of total population), # 100: Proportion of population living in coastal areas & # 128:Proportion of women in managerial positions.

✓ **Surveys** (the Multiple Cluster Indicator Survey, Household Budget Survey etc.)

✓ #95:Proportion of population with access to electricity (SDG 7.1.1), #96: Proportion of population served by municipal waste collection, # 97: Proportion of population using (a) safely managed sanitation services and (b) a hand-washing facility with soap and water (SDG 6.2.1), #98: Proportion of population using safely managed drinking water services (SDG 6.1.1), #99: Proportion of population with access to heating/cooling & # 112:Proportion of population with primary reliance on clean fuels and technology (SDG 7.1.2).

3. Data collection Global Set (2)

- **Administrative Data**

- ✓ **The ministry of Land Policy and Forest Management:** # 87: Vulnerable species, # 131**:** National integrated coastal zone management & # 144:Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem.

- ✓ **The Ministry of Environment and Spatial Planning:**# 114:Low-carbon development strategies and plans, # 127: Proportion of sectors planning, budgeting and implementing climate change adaptation actions, # 132: Fisheries management measures in place and multilateral/bilateral fisheries management arrangements # 135: Climate change funds received & # 141: Number of reports on climate change statistics and indicators.

- ✓ **Ministry of Agriculture, Animal Husbandry and Fisheries:** # 24: Livestock units per agricultural area, # 72: Proportion of fish stocks within biologically sustainable levels (SDG 14.4.1) & # 148: Proportion of agricultural area under productive and sustainable agriculture(SDG 2.4.1).

- ✓ **Ministry of Public Works**: # 156:Municipal waste collected per capita.

- ✓ **Bureau of Public Health:** # 44:Incidence of cases of climate-related diseases.

3. Data collection Global Set (3)

- **Foundation for Forest Management and Production Control:** #21: Intensity of use of forest resources, #22: Deforested area as a proportion of total forest area, # 31:Forest area as a proportion of total land area (SDG 15.1.1), #67: Proportion of forest area affected by forest fires, # 71: Proportion of land that is degraded over total land area (SDG 15.3.1), #125: Increase in forest area & # 149: Progress towards sustainable forest management(SDG 15.2.1).

- **Meteorological Service:** #52: Mean surface temperature anomaly & # 58: Total rainfall anomaly.

- **Energy Company & State Oil Company :** # 10: Total primary energy production from fossil fuels, # 11:Total energy supply from fossil fuels, #13: Final energy consumption per capita, #14:Energy intensity measured in terms of primary energy and gross domestic product (SDG 7.3.1) & #15:Fossil fuel dependency.
- **Water company:** # 83: Customer price of drinking water

- **Central bank of Suriname/Insurance companies**: #19: Number of private and public vehicles

- **The National Coordination Disaster relief**: # 39: Frequency of hazardous events and disasters, # 42:Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population (SDG 11.5.1) & # 133:Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies (SDG 13.1.3)

3. Data collection Global Set (4)

- **GIS data:** Land Use and Land Cover Maps from Suriname (LULC)
- ✓ (Example Indicators: Area under land use categories (agriculture) (FDES 2.3.1.a), Forest area, Sea Level rise), Land Area, coastal area etc.)

- **Customs data**
- ✓ (Examples: Vulnerability: Food import and Export, Import of Energy)

- **Websites and databases**
- ✓ GIS and Forest geoportal "Gonini"- https://www.gonini.org/
- ✓ Forest database " Kopi" https://kopi.sbb.sr/
- ✓ Climate Change knowledge Database Suriname: " Dondru" https://dondru.sr/mrv

- Websites (International, Regional and National Organisations)
- ✓ International organisation (IUCN): Number of red list species (FDES 1.2.2.c.1) https://www.iucnredlist.org/statistics
- ✓ National: General Bureau of Statistics Website: https://statistics-suriname.org/statistieken-en-publicaties/

4: Link Environment Statistics & the Global Set

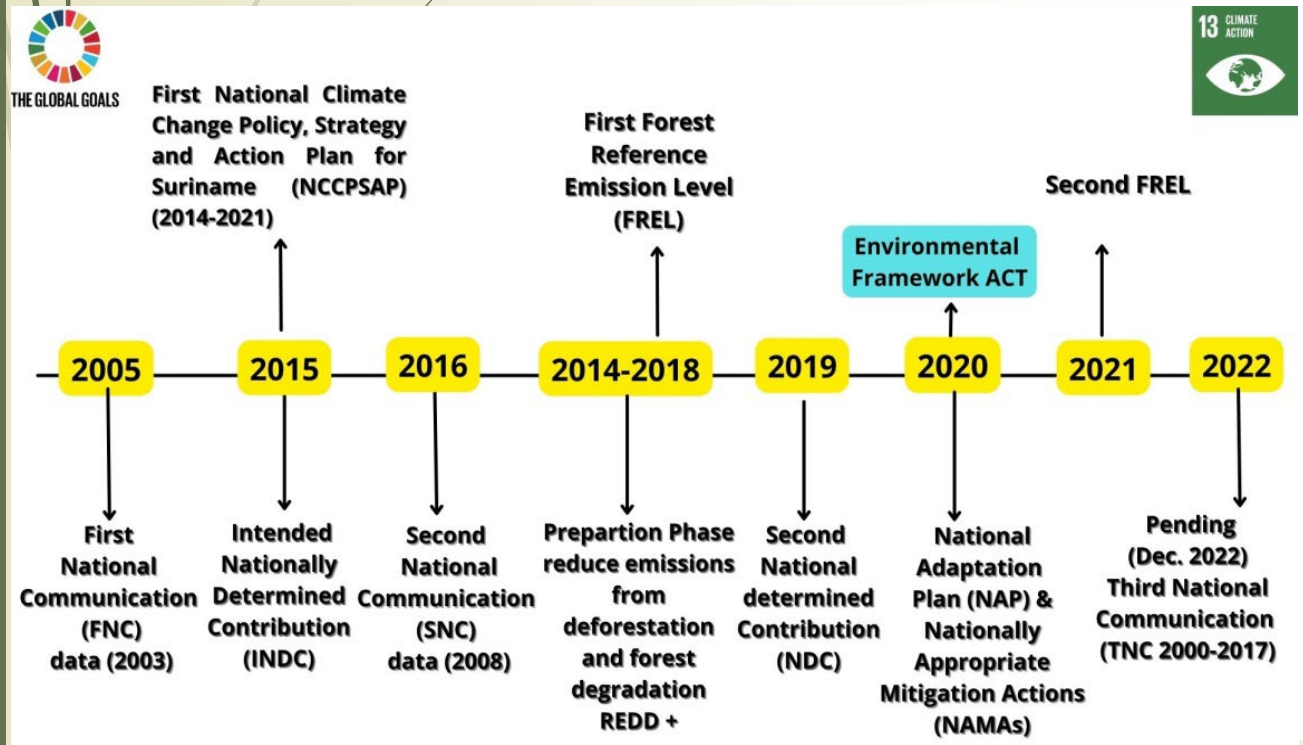
- Since 2016, GBS is a member of the Expert Group on Environment Statistics (EGES) and contributes actively to the Global set on Climate Change Statistics and Indicators since 2020. Because circa **48%** of data is already available in the Environment Statistics Publication, GBS is busy preparing their first Climate Change Report that is planned to be published early next year.

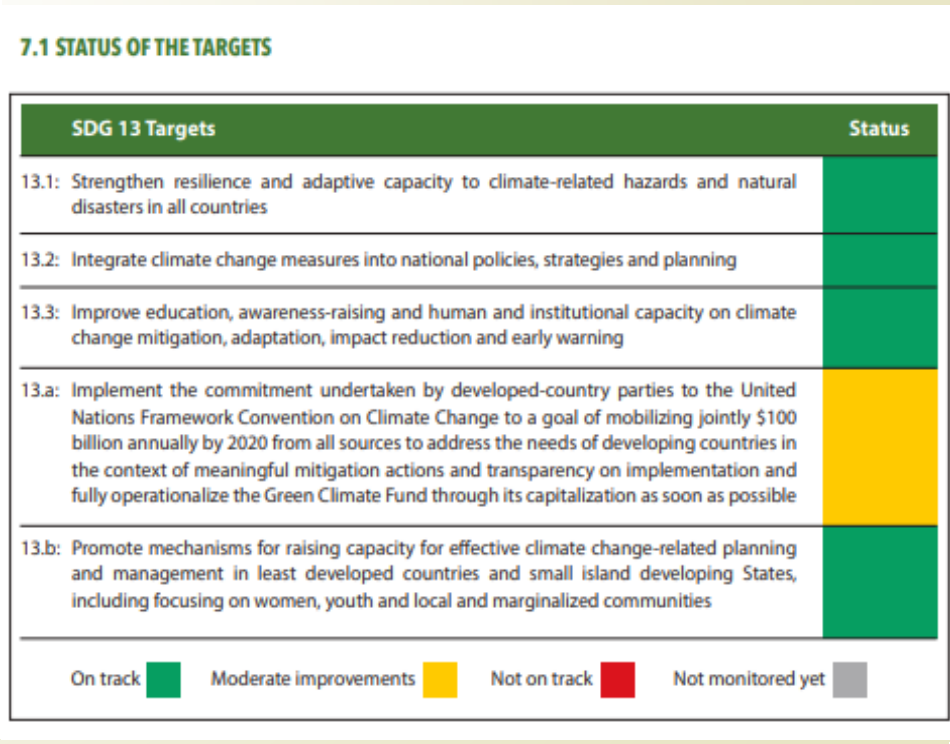
	Environment Statistics Chapters	Drivers	Impacts	Vulnerability	Mitigation	Adaptation	# Indicators
1	Demographic and Socio-Economic Background	3	0	3	0	1	**7**
2	Climate & Natural Disasters	0	8	1	0	1	**10**
3	Tourism	0	1	0	0	0	**1**
4	Transport	1	0	0	0	0	**1**
5	Environment and Health	0	2	2	0	0	**4**
6	Water	0	1	2	0	1	**4**
7	Energy & Minerals	5	0	2	4	0	**11**
8	Forestry	2	3	0	1	1	**7**
9	Coastal and Marine Resources	0	1	0	0	2	**3**
10	Land Use and Agriculture	3	2	2	0	1	**8**
11	Biodiversity	0	2	2	0	1	**5**
12	Air	5	1	1	4	2	**13**
13	Waste	0	0	1	0	1	**2**
Total indicators Environment comp.		19	21	16	9	11	**76**
Total indicators global framework of CC		26	54	28	18	32	**158**
% Preliminary Data available per June 2022		**73%**	**38.8%**	**57.1%**	**50%**	**43.8%**	**48.1%**

- **Note:** For some of the Indicators, there is data available for proxy indicators.

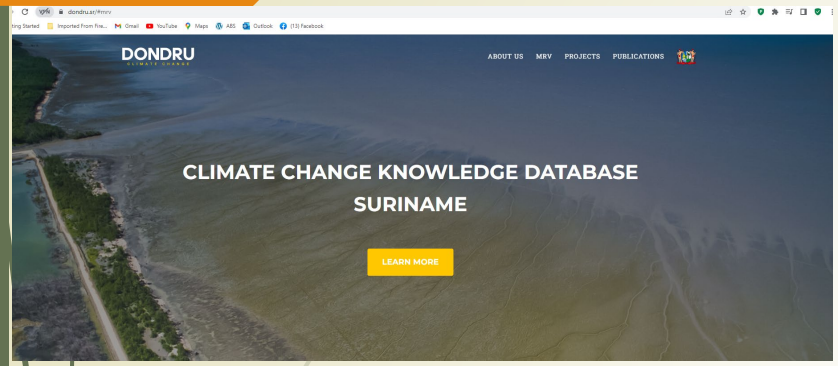
5. Suriname UNFCCC submissions

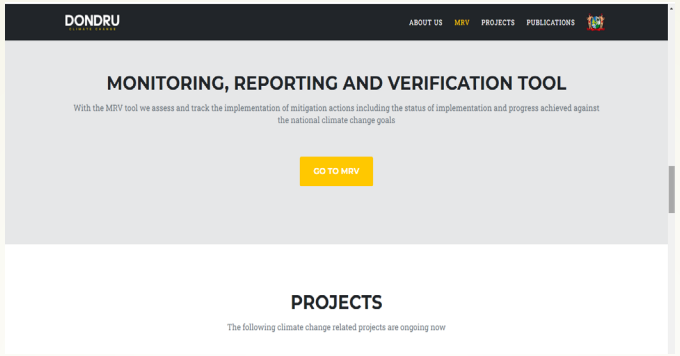
- In 2022, GBS was part of the Voluntary National Report (VNR) commission that submitted Suriname's First VNR report in June 2022 and reported on SDG 4, 8, 13 and 17.
- GBS Environment Statistics publication contributed mostly with data for SDG 13 "Climate Change". GBS is also part of the SDG commission.

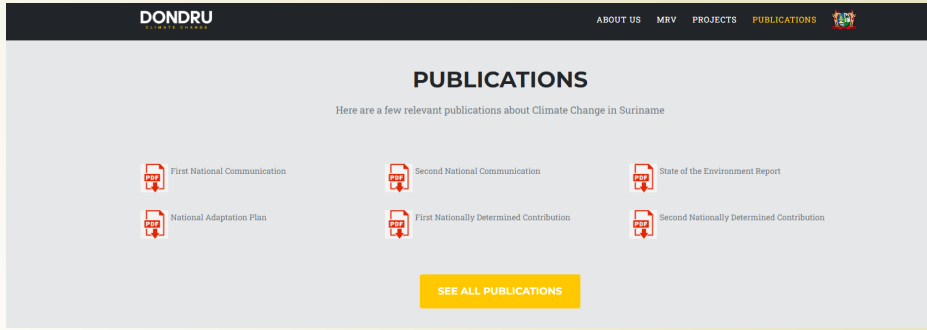


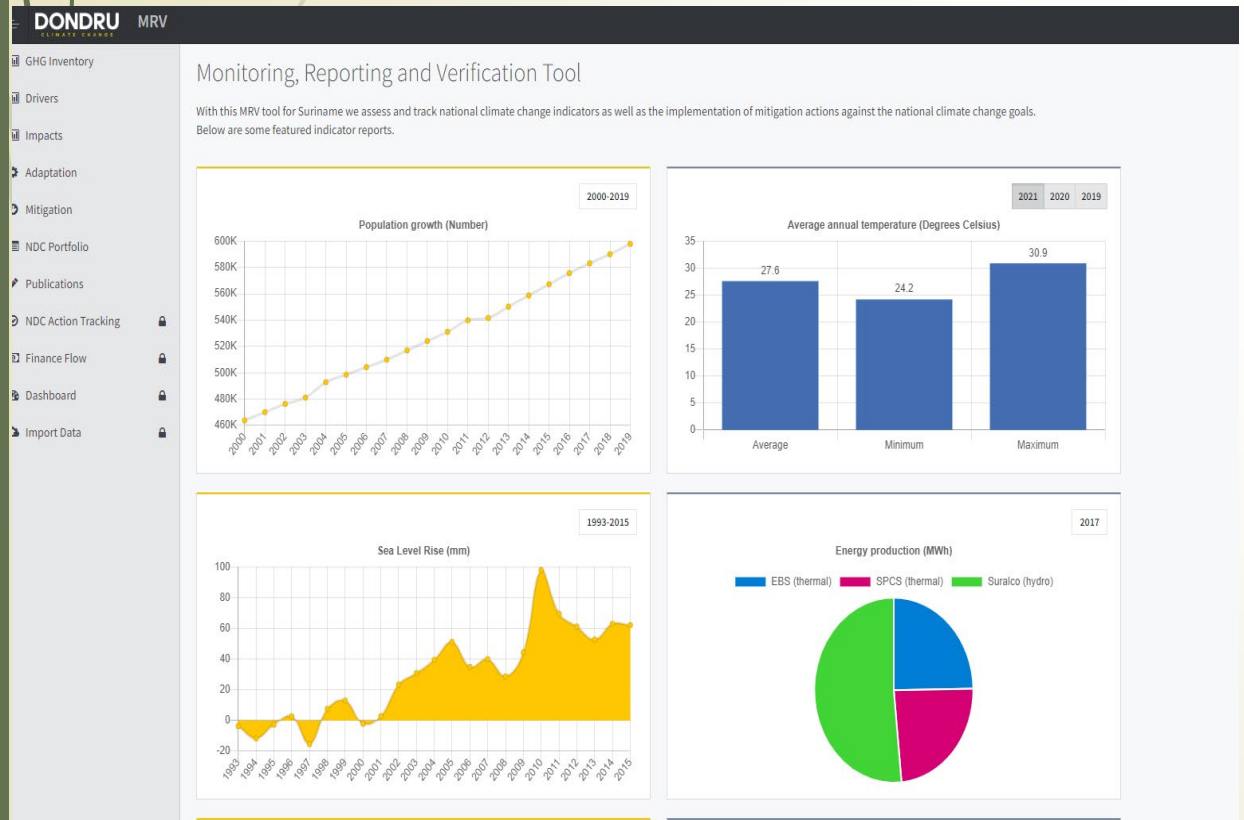


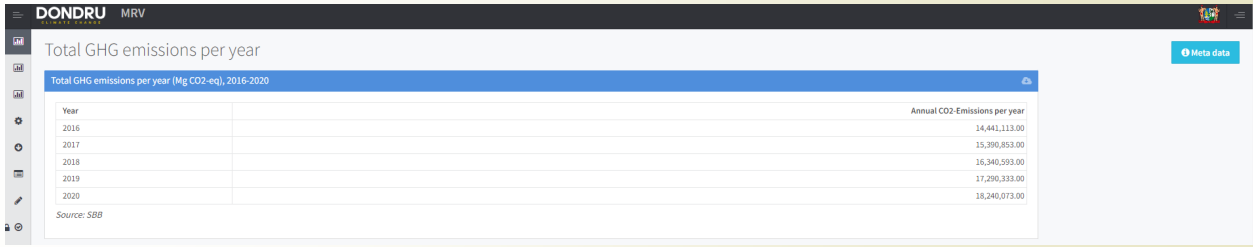
6.Climate Change knowledge Database

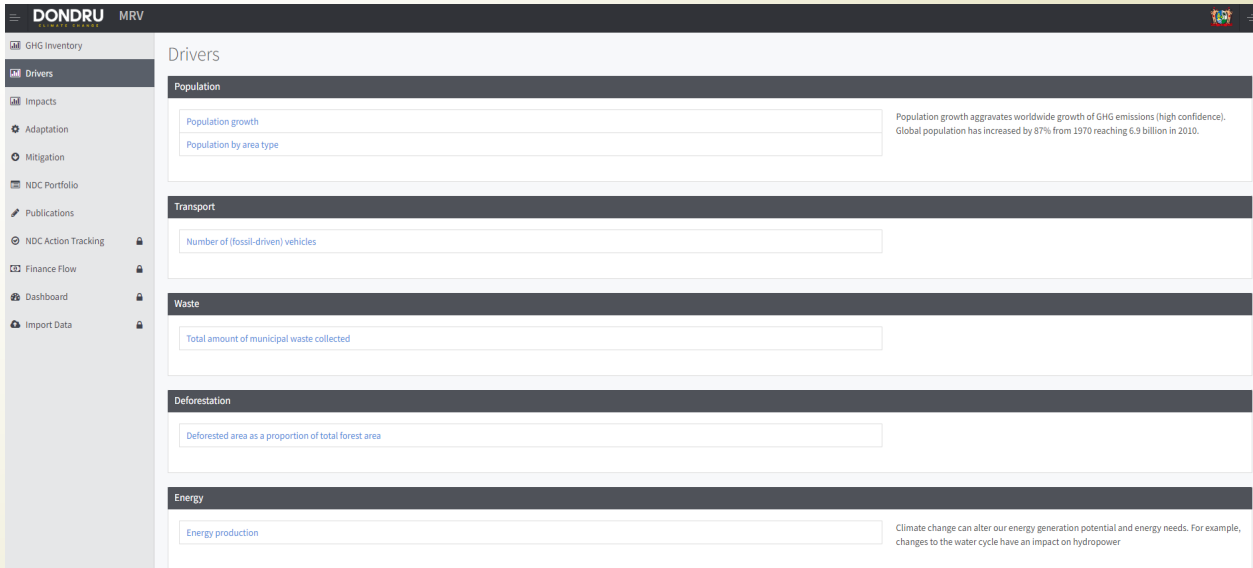






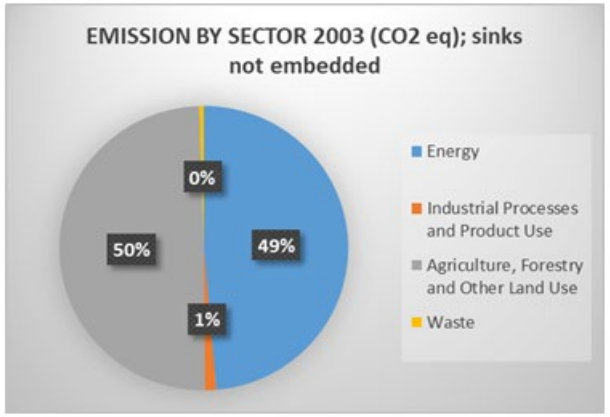




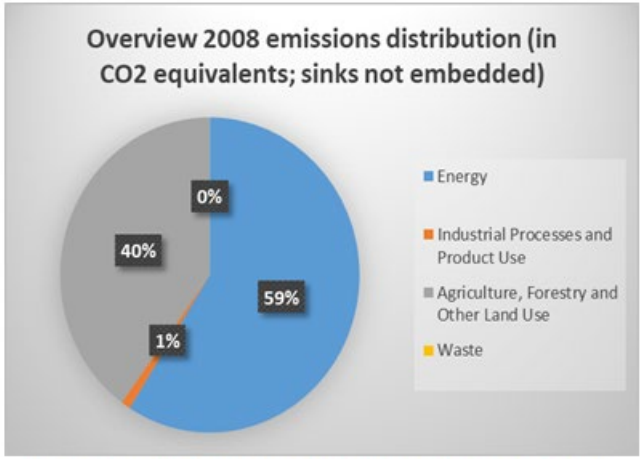


7: Examples: Drivers

Indicator #1: Total greenhouse gas emissions per year (SDG 13.2.2)



Graph 2.1a: 2005 submitted NC1 (GHG-inventory for 2003)



Graph 2.1b: 2016 submitted NC2 (GHG inventory for 2005-2008)

Indicator #5: Greenhouse gas emissions per capita

Total emissions CO_2 eq (Gg) per Capita Emission in Suriname, 2008-2025

Emissions CO_2 eq (Gg) per Capita	2008	Scen2010	Scen 2015	Scen. 2020	Scen 2025	Mitigation Scenario 2025
Total emission CO_2 eq (Gg)	5,584	6,625	9,146	14,179	10,825	6,778
Population (x 1000)	517	542	611	667	724	724
Emissions per capita	10.80	12.22	14.97	21.26	14.95	9.36

Source: Suriname's Second National Communication

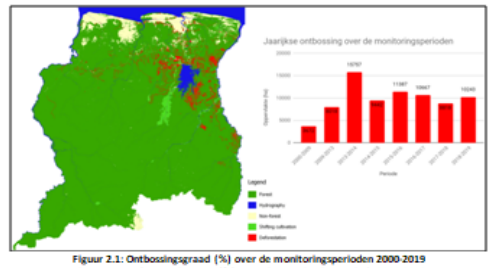
Indicator # 13: Final energy consumption per capita

Table: Final energy consumption per capita (kWh), 2011-2021

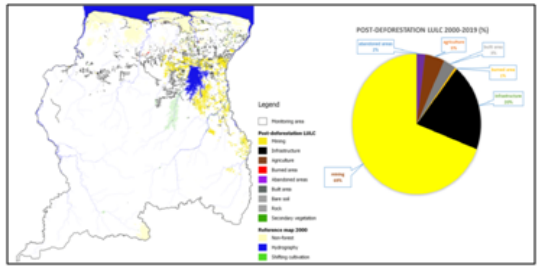
year	Households and Commercial	Mid-year population	Final energy consumption per capita
2011	834,471,637		
2012	900,453,615	541,638	1662.5
2013	968,790,243	550,222	1760.7
2014	1,012,589,027	558,773	1812.2
2015	1,028,045,932	567,291	1812.2
2016	1,038,858,587	575,700	1804.5
2017	1,017,971,346	583,200	1745.5
2018	1,041,649,603	590,100	1765.2
2019	1,092,168,596	598,000	1826.4
2020	883,595,664	602,500	1466.5
2021	849,622,755		

Source: Suriname Energy Company

Indicator # 22: Deforested area as a proportion of total forest area



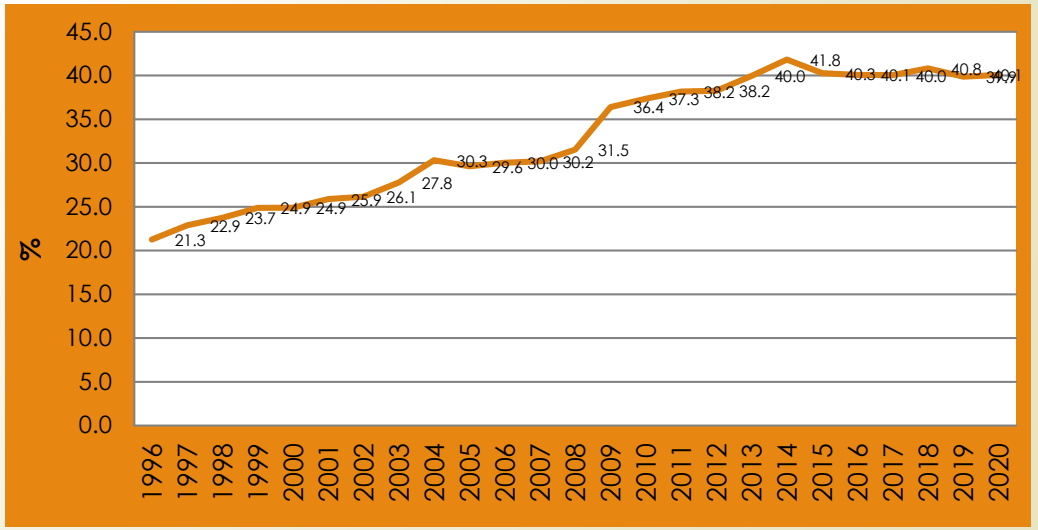
Figuur 2.1: Ontbossingsgraad (%) over de monitoringsperioden 2000-2019
Figure 2.1: Deforestation rate (%) over the monitoring periods 2000-2019



Figuur 8.3: Post-ontbossing LULC kaart Suriname van 2000-2019
Figure 8.3: Post-deforestation LULC Map Suriname from 2000-2019
(Bron: Stichting voor Bosbeheer en Bostoezicht /Source: Foundation for Forest Management and Production Control)

Indicator # 19: Number of (fossil-driven) vehicles per capita

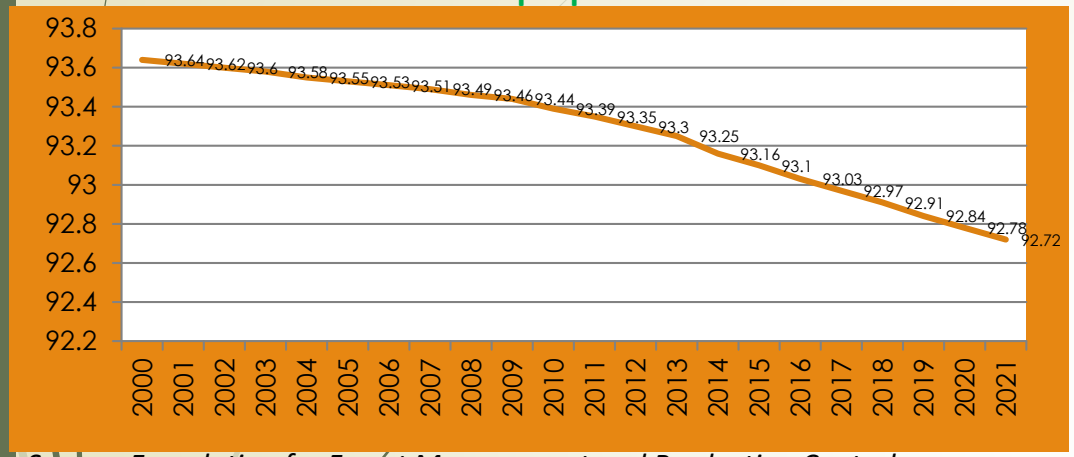
Graph: Number of (fossil-driven) vehicles per capita, 1996-2020



Source: Central Bank of Suriname

7. Examples: Impacts

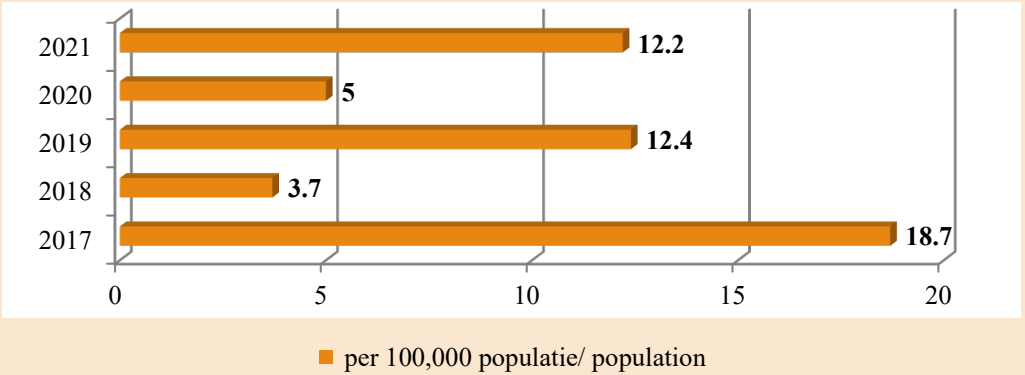
Indicator # 31 : Forest area as a proportion of total land area



Source: Foundation for Forest Management and Production Control

Indicator # 42: Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population

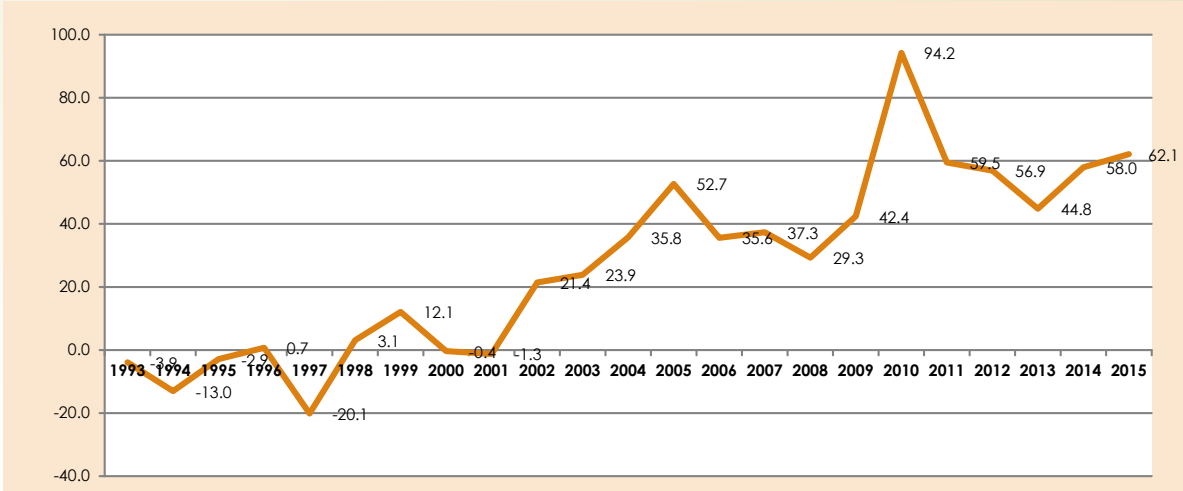
Graph : Population Affected by a Disaster due to Extreme Weather per 100,000 population, 2017-2021



Source:National Coordination Center for Disaster Relief (NCCR)

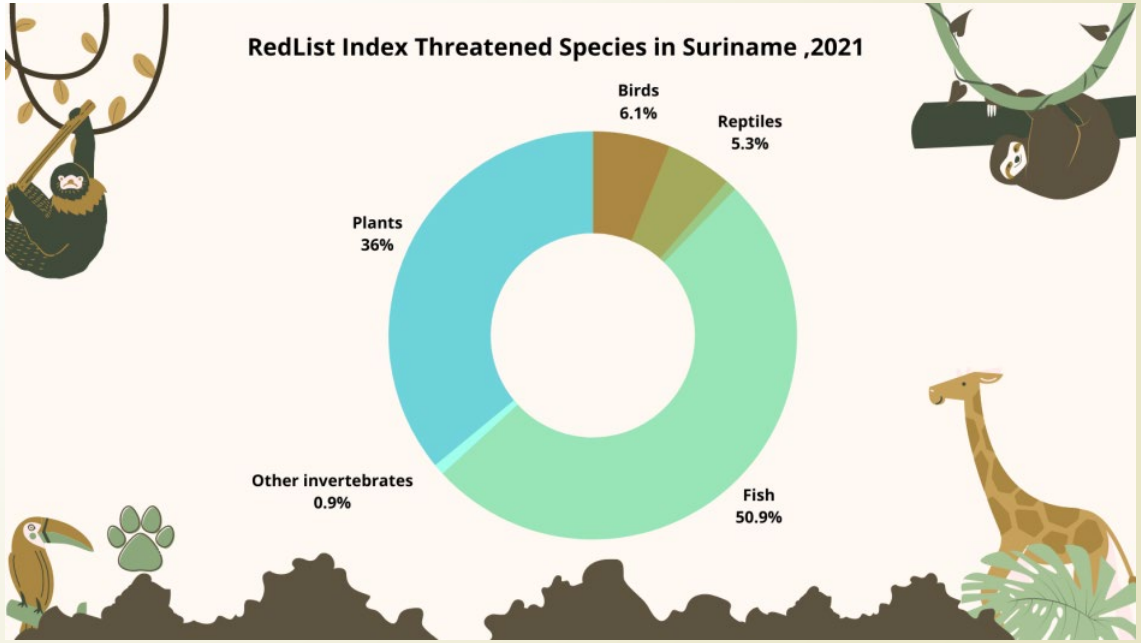
Indicator # 47 : Sea level rise

Graph: Average Historical Sea Level Anomaly for coastal Suriname, January 1993-2015



Indicator # 63 : Red List index

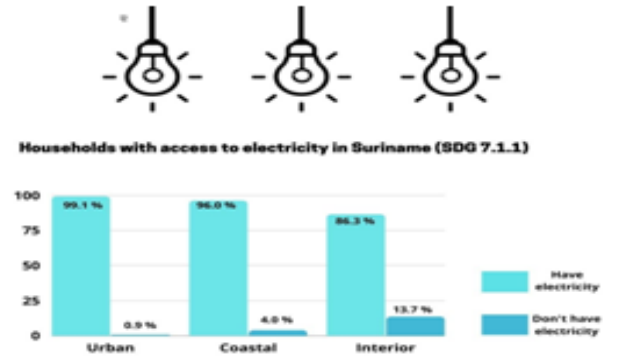
Graph: Redlist Index Species in Suriname, 2021



7: Examples: Vulnerability

Indicator # 95 : Proportion of population with access to electricity

Source: MICS 2018



Grafiek 4.1: Huishoudens met toegang to electriciteit in Suriname, 2018
Graph 4.1: Households with access to electricity in Suriname, 2018

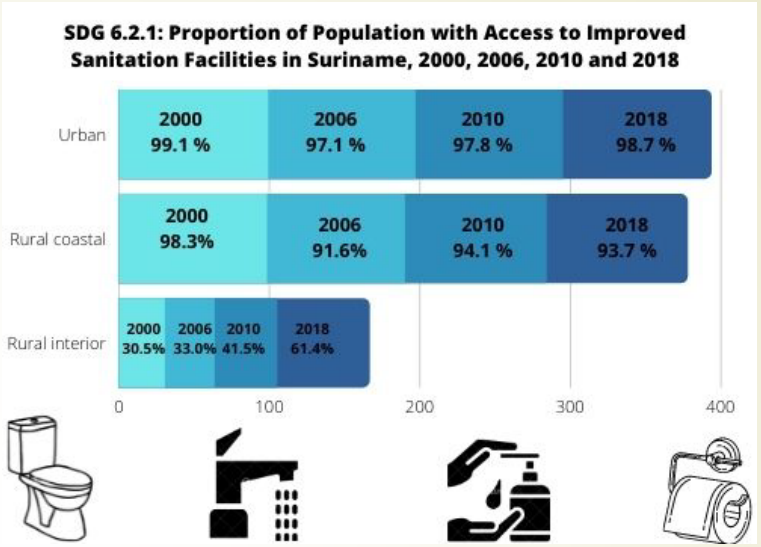
Indicator # 96 : Proportion of population served by municipal waste collection

Table: Households by way of Garbage dumping, 2004 and 2012

Ways of dumping Garbage	2004		2012	
	number	%	Number	%
Picked -up once per week	5,395	4.4	9,047	6.4
Picked -up twice per week	45,339	36.7	92,450	65.9
Picked up more than twice per week	3,477	2.8	3,176	2.3
Brought to Dumping Place	9,537	7.7	6,611	4.7
Put in a container	-	-	586	0.4
Dumped Somewhere else	8,042	6.5	3,411	2.4
Different Combinations, Other	13,286	10.8	2,122	1.5
Burned	30,405	24.6	14,386	10.2
Buried	2,444	2.0	1,902	1.4
Dumped in the River	2,161	1.8	767	0.5
Unknown	3,377	2.7	5,909	4.2
Totaal/Total	123,463	100	140,367	100.0

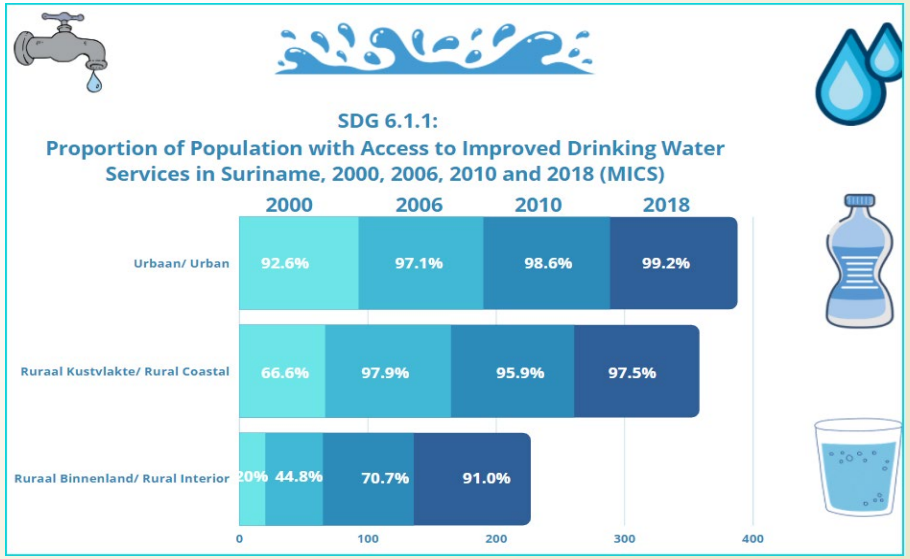
Source: Census 2004 & 2012

Indicator # 97 : Proportion of population using (a) safely managed sanitation services and (b) a hand-washing facility with soap and water



Source: MICS 2018

Indicator # 98 : Proportion of population using safely managed drinking water services

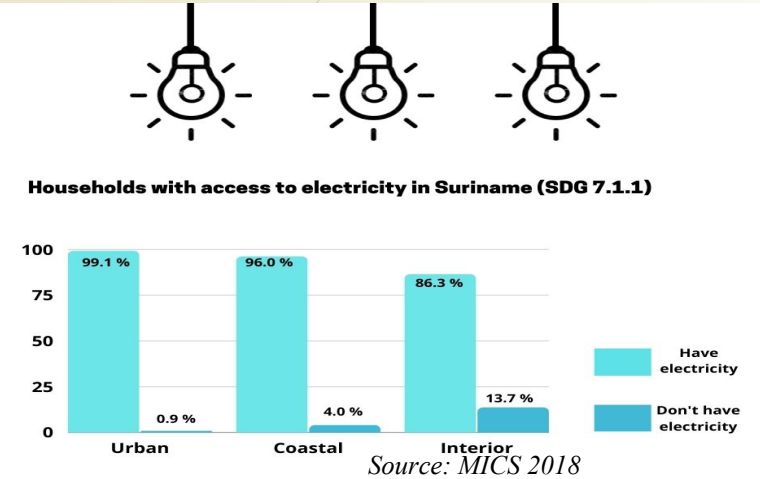


Source: MICS 2018

7. Examples: Mitigation & Adaptation

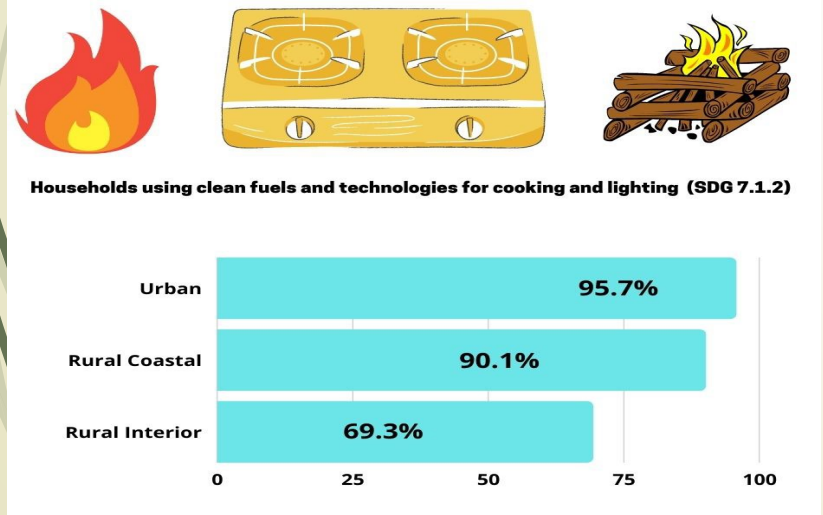
Indicator # 112: Proportion of population with primary reliance on clean fuels and technology

Graph: Households with access to electricity in Suriname, 2018



Source: MICS 2018

Graph: Households who use clean fuels and technologies for cooking and lighting in Suriname, 2018



Indicator # 131: National integrated coastal zone management

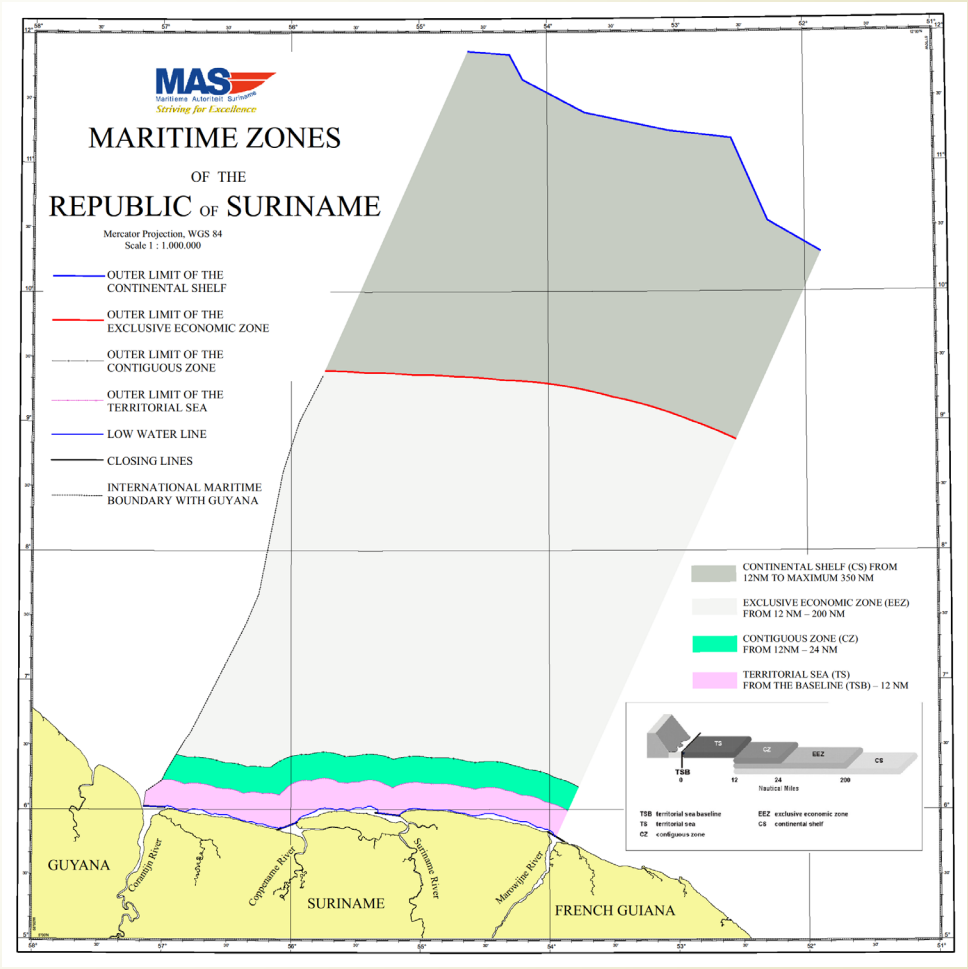


Figure: Maritime Zones of the Republic of Suriname

Source: https://www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILES/MAPS/SUR_MZN131_2017_00232.pd

8. Collaboration NSO and stakeholders

- There needs to be a good collaboration between the NSO and the Ministry of Environment and other relevant Environment stakeholders.
- There needs to be collaboration between the NSO and International organizations like UNDP(Green Climate Fund (GCF), Global Environment Facility (GEF) etc.)
- The NSO needs to know what conventions are ratified and what other climate change related conventions the government signed and therefore need to collect all possible Climate Change reports that were submitted by the government.
- Participate in Environment statistics and Climate Change workshops and meetings (either virtual and/or physical). In Suriname, the Ministry of Spatial Planning and Environment invites the NSO to all their workshops regarding the third national communication. This helps to better understand the policy part of climate change and the importance of data for a country to make better analysis.

9.Challenges / Weaknesses

- Since March 2020, the COVID-19 Pandemic hit affecting general operations of the GBS.
- The GBS relies on administrative data, which can result in lower data quality or even no data for some years due to staff turn over.
- The statistical capacity at the government needs to be enhanced/increased through more training especially in the metadata to better understand the FDES 2013, Climate Change and SDG indicators and to be able to calculate the indicators themselves.
- Data collection is time consuming. Stakeholders need to be reminded constantly via email/phone or even through personnel visits. This got even worse with the COVID-19 pandemic.
- Some of the national data is not processed in the required format, or is not disaggregated or is out of date (lack of data by Gender & District).
- Due to Lack of Financial and human resources specialized surveys can not be conducted.

10. Opportunities /Strengths

- GBS has a good collaboration with the government, private sector and international organizations (UNDP).

- **The Environment Statistics workshop and launch**

✓ Since 2014, Every two years an environment statistics workshop is organized by GBS in collaboration with UNDP, (before 2014 it was funded by Conservation International Suriname CIS)), where the Zero draft Environment compendium is validated and feedback is proved during working group sessions. The participants also get familiar with the various international Environmental frameworks such as the FDES, SDGs, CARICOM core set. Furthermore, the launch and the complimentary copies of the compendiums are also funded by the UNDP.

✓ August 19th 2022, GBS introduced the Global set of Climate Change Statistics and Indicators at the 10th Draft Environment statistics publication workshop.

- Since June 2022, Suriname has a Climate Change knowledge Database Suriname where data from the Environment Statistics compendium was used.

- Since 2017, GBS is a member of the CARICOM Technical Working Group on Environment Statistics and the CARICOM Technical Working Group on SDGs and contributed to the CARICOM CORE SET of SDGS.

- Technical assistance and training received through participation in various national, regional (CARICOM & ECLAC) and international (UNSD/UNFCCC/FAO etc.) Climate Change and Disasters workshops/meetings

11.Lessons learned

- Quality and availability of data is the most critical issue.
- Human, Technical and Financial resources are scarce.
- Climate Change should be a priority issue for the Government otherwise reporting will remain as ad hoc actions.
- There is a need for more technical capacity (training in the metadata & data collection process) for the Climate Change Indicators from the Global Set and for the Climate Change related SDG and UNFCCC submissions.

12. Recommendations

- Use the Climate change ESSAT to guide you in identifying the potential stakeholders in your country and data sources.
- Start publishing a small set of indicators (2-3 indicators per IPCC area) in an Environment Statistics or Climate Change compendium using the FDES, SDGs and the Global Set of Climate Change Statistics and Indicators.
- Ask for technical assistance (data collection & metadata training) from international organizations (UNSD, ECLAC, CARICOM etc.), to better understand the Global set on Climate Change Statistics and Indicators.
- Collaborate with the Ministry of Environment and other core ministries in your country.
- Collect all Climate Change related reports that your government submitted. Check if your country submitted a national communication. These reports contain a lot of data, that are also indicators from the Global Set.

11. Way forward

- In December 2022 Launch the 10th Environment Statistics compendium and Suriname's First Climate Change Statistics compendium.

- Keep participating in national, regional and international trainings, as well as contributing to work at the global level run by UNSD with support from the Expert Group on Environment Statistics (EGES), such as the Global Consultation on Climate Change Statistics in 2021, as well as contributing to the implementation of the Global Set of Climate Change Statistics and Indicators.

- In Suriname's Population and Housing Census (planned for 2023) some Climate Change related questions will be added. Furthermore the next Agricultural Census (planned for 2023) will contain data to monitor the SDGs and also Climate Change especially for the AFOLU sector.

- Minimize the gap between Environment Policy and Statistics and focus on strengthening the existing collaboration between the GBS and the Ministry of Spatial Planning and Environment and other environment stakeholders.

BEDANKT

Gran Tangi

Thank You

Gracias

Merci Beaucoup

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