National Bureau of Statistics Tanzania

Tanzania's Experience in Climate Change Statistics

United Nations Statistical Commission
50th session (2019), **07th March, 8.15-9.30 am**

Outcomes of COP24 in Katowice – the possible implications for climate change statistics
Organizer: UNSD

Contents

National Bureau of Statistics Tanzania

1. Background Information

- Climate change is one of the most important issues on **the global political and economic agenda**, yet there is **no reliable data** to measure and monitor its impact on the society.

- The adverse impacts of climate change are affecting all countries, **especially developing countries**, including:-
  - Persistent drought, floods and extreme weather events,
  - Rising sea levels,
  - Coastal erosion and ocean acidification,
  - Further threatening food security,
  - Water, energy and health

1. Background Information

- In Tanzania the effects of climate change are already being felt
  - **Currently, more than 70% of all natural disasters** in Tanzania are climate change related and are linked to recurrent **droughts and floods**
  - Vulnerability in **agricultural sector** which **employ more than 60%** of the Labour Force:-
    - Changing weather patterns,
    - Rainfall intensity and
    - Drought.

1. Background Information

- The **adverse impacts** of climate change on agriculture include:-
  - Shifting agricultural production,
  - Reduced productivity and
  - Damaging crops and livestocks.

2. National Efforts – Combat Climate Change

- There are several initiative in the country to combat Climate Change including:-
  - Revision of the National Environmental Policy, 1997 to accommodate new emerging issues such as **climate change**
  - Ratification and implementation of various **Multilateral Environmental Agreements (MEAs)**
  - Establishment of National Climate Change Strategy, 2012, to address both **adaptation and mitigation** in line with the country's vision for sustainable development

2. National Efforts – Combat Climate Change

- There are several initiative in the country to combat Climate Change including:-……..
  - **Alignment of the SDGs climate related indicators** with national development programs, FYDP II
  - Establishment of **NTWG on Environments Statistics** coordinated by NBS
  - Participation in testing the UNSD questionnaire on Climate change; **applicability, data availability** and the possible **alternative and additional** indicators which are used by the country.

3. Implication for Climate Change Statistics

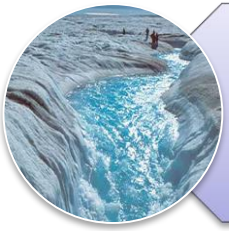
Climate Change! How do we know?

Global temperature rise

Glacial retreat

Warming oceans

Extreme events



Shrinking ice sheets

Sea level rise

3. Implication for Climate Change Statistics

- There is a need for **scientific statistical methods** to facilitate evidence based decisions on climate change system including:
  - Identification of Climate Change **drivers**,
  - Formulate **mitigation and adaptation** measures,
  - Assess the **impact** of climate change and
  - **Minimize vulnerability** to the impacts of climate change Vulnerability aspects
- Climate Change Statistics are fundamental to improve the **evidence-base of climate policy makings** and to enable a **well-designed response** to the changes in climate that we are increasingly experiencing.

3. Implication for Climate Change Statistics

- **Statistical tools** are required to assess, with uncertainty, what is currently known and where the Climate Change System may be headed.

- **Advancement in technology** and the complex nature of Climate Change System leads to a complex satellite images and information, observation data and Sophisticated climate models which produce output on finer and finer spatial scales

  - **Statisticians and new statistical techniques** are required to use these data sources to **improve understanding** of the current climate system and to facilitate forecasting.

3. Implication for Climate Change Statistics

- **Statistical analysis helps to quantify the effects** of uncertainty, both in terms of observation and measurement and in terms of understanding of the processes, that govern climate variability
  - The society, governments and businesses are vulnerable to climate change.
  - Climate change can affect **food production, water availability, wildlife and human health**. Weather conditions, such as storms, can **damage infrastructure** like roads, bridges, and buildings.
  - **Sea level rise** can cause water to gradually cover low-lying countries, in particular those below sea level.

4. Data Availability

- With a technical support from UNSD, NBS managed to produce the first comprehensive **National Environment Statistics Report, 2017 (NESR, 2017)** which is according to the FDES, 2013

- The **NESR, 2017 has some Climate Changes Statistics** which contributes to the evidence based planning for climate change programs in the country

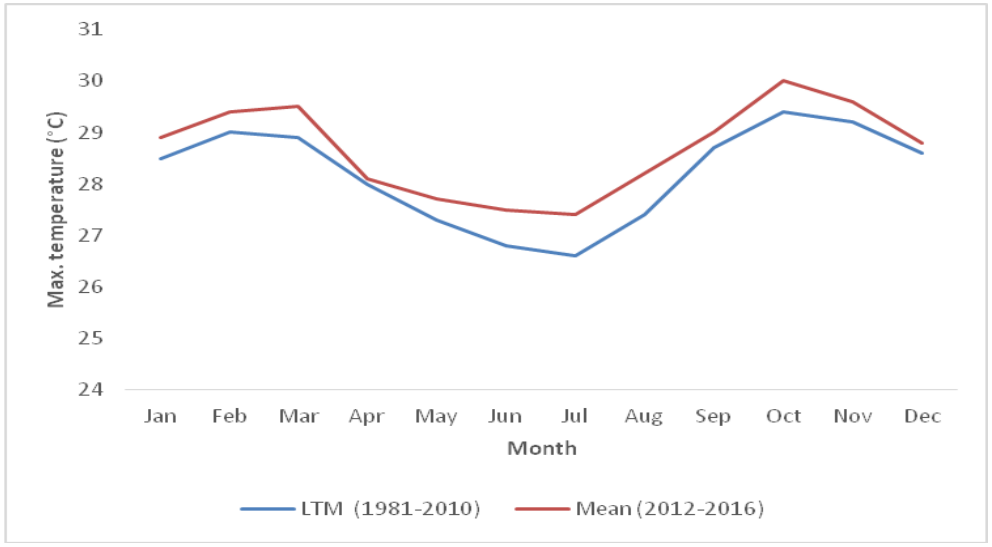
- NBS is currently working with GIZ to compile a **comprehensive report on Climate Change Statistics**

4. Data Availability

Temperature

- The overall **mean maximum temperature** for Tanzania for the period of 2012 to 2016 **was 28.5°C**

Monthly Mean Maximum Temperature from 2012 to 2016 and Long-term Mean 1981-2010



Message:

There is an **increasing trend of monthly mean maximum temperature** with an average of **30.0°C** for the period of 2012 to 2016 compared to **29.4°C** for long-term (1981-2010) both observed in October.

4. Data Availability

Rainfall

- Most part of Tanzania is characterized by two main rain seasons,
  - long rains (Masika) from March to May
  - short rains (Vuli) from October to December.

- Annual rainfall amount varies from **550 mm** in the central parts of the country to **2500 mm** in some parts of surrounding Lake Victoria

- For the period of 2012 to 2016, Tanzania received annual rainfall of **893.9 mm** recorded from different meteorological stations.

4. Data Availability

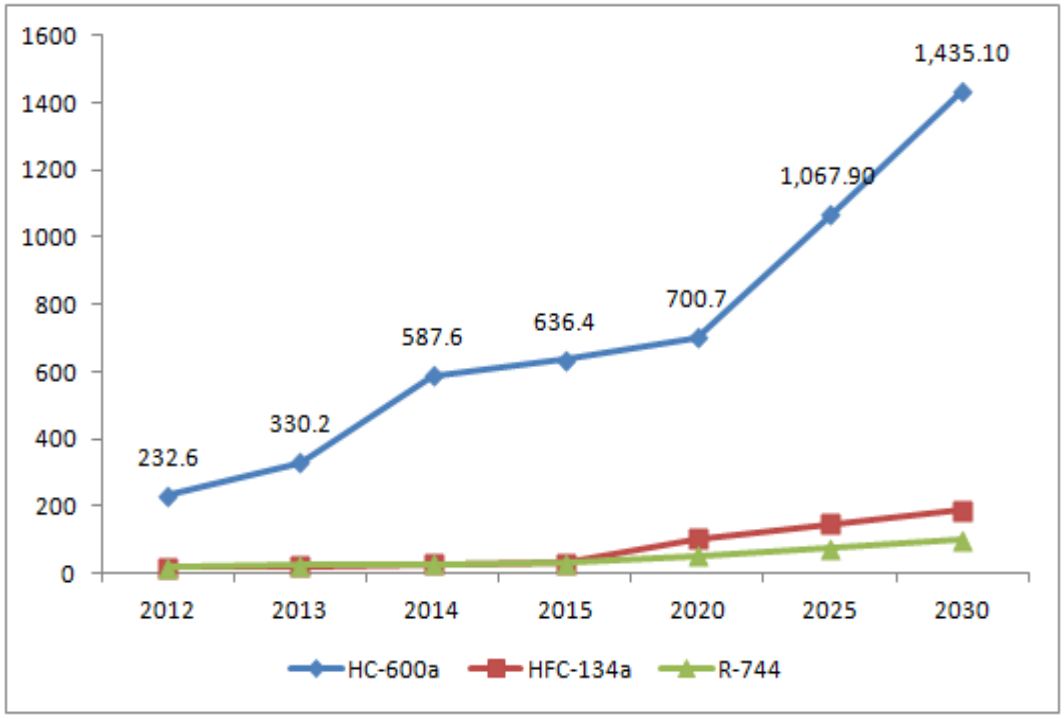
Emission to Air - Consumption of ODS Alternatives

- Tanzania is a **low volume consuming country** of the ODS
- The market for ODS alternatives in Tanzania is dominated by imports which amounted **to 723.08 MT in 2015** compared to **290.78 MT in 2012**
- The main sectors that use ODS alternatives in Tanzania are:
  - Aerosols **(70.5 %)** and
  - Refrigeration Servicing and Air Conditioning servicing (RAC) **(29.5 %)**

4. Data Availability

Emission to Air - Consumption of ODS Alternatives

Trend of Historical and Predicted Consumption for Selected ODS Alternatives; 2012 – 2030 (MT)



Message:-

Hydrocarbon (HC 600a) is the most common ODS alternatives used in Tanzania, which increased **from 232.6 MT in 2012 to 636.4 MT in 2015;** it is estimated to **triple by 2030**

4. Data Availability

NBS Collaboration with GIZ

- GIZ is providing support to facilitate compilation of **comprehensive Climate Change Statistics**
  - **IPCC Framework** recommended in the FDES, 2013 will be used for data gaps assessment, data collection and writing of the report
  - NBS is also planning to consider the **updated framework on climate risks** of the IPCC Fifth Assessment Report (AR5) from 2014 in this project

4. Data Availability

NBS Collaboration with GIZ

- GIZ is providing support to facilitate compilation of **comprehensive Climate Change Statistics……**
  - **Hire Consultant** to enhance knowledge of NBS statisticians on Climate Change concepts and compilation techniques
  - **Establishment of Climate Change Statistics Committee** with members from within and outside the government

5. Conclusions

- NBS, as part of the UNSD Expert Group on Environment Statistics, appreciates the work of this Group in **contributing to the Global Set of Climate Change Statistics and Indicators,** that UNSD was requested by the 47th session of the Statistical Commission to develop.

- NBS is also looking forward to **translate some of the outcomes of the COP24 in Katowice into expected reporting requirements** in terms of climate change statistics that can be developed at the national level.

National Bureau of Statistics Tanzania

It doesn't cost more to deal with climate change, it costs more to ignore it!

Thank you for your kind attention!