Main Issues of Availability and Reliability of Climate Change Related Statistics in Armenia
28-30 August 2023, Geneva, Switzerland

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Section A

The Institutional Framework of Climate Change Statistics
"Armenia: Road Map for the Development of Climate Change-related Statistics / Statistical Committee of the RA (www.armstat.am)

The priorities structured around the defined 9 main CES recommendations and actions to be taken

1. NSOs must improve statistics required for GHG inventories
   - Discussions with heads of departments of ARMSTAT on capacity building and training needs
   - Review the gaps in administrative data with the GHG inventory compilers
   - Introduce list of newly suggested administrative data

2. Increase the NSOs role in the GHG inventory production system
   - Study the requirements of international non-governmental organizations
   - Compliance with their requirements
   - Proper knowledge of international organizations' requirements and, where necessary, adaptation of them to local context

3. Increase and deepen cooperation with international statistical community on climate change-related statistics
   - Intensify cooperation with governing bodies for the full inclusion of CC indicators in statistical work programs
   - Initiation widespread use of GIS statistical analysis

4. NSOs must improve the contribution of official statistics to CC analysis by, among other things, facilitating access to existing statistics
   - Participation in of EU-funded Shared Environmental Information System project
   - Creation of an Ecoportal

5. Improve the usefulness of existing environmental, social and economic statistics for climate change analysis
   - Introduce list of newly suggested administrative data

6. NSOs should consider development of new statistics based on a review of the key data needs of CC policy makers and analysts in their country
   - Include provisions relating to CC-related statistics in the five-year strategic programs of the ARMSTAT

7. Existing classification systems, registers, definitions, statistical frameworks, products and services need to be reviewed meet the needs of CC analysis

8. Statisticians should gradually develop new partnerships, expertise and ability to adopt new methodologies for producing CC-related statistics

9. Make organizational changes in the SC, the broader national statistical system and the national system to support the production of CC-related statistics

- Active and practical participation in the certification processes of GHG information sources
- Review the demand for statistical information for analysis and reports on climate change
- Preparation of new data set for use in analysis
- Discussions with scientific community, universities, Public Council on Users of Official Statistics
- Introduction of environmental protection expenditure accounts
- Expanded environmental accounts for air, water, land, etc.
- Training workshops for ARMSTAT staff
- Assistance in preparation of CC-related skills/knowledge assessment and self-evaluation reports
Decision of the Prime Minister of RA, in July 2021, an Inter-Agency Coordinating Council (IACC) chaired by the RA Deputy Prime Minister of RA on implementation of requirements and provisions of the UN Framework Convention on Climate Change and the Paris Agreement by the Republic of Armenia was established.
Section B

Current climate change statistics (ArmStatBank)
The latter was developed in 2012 and also includes the Environment sector which is based on the principles and requirements of the Shared Environmental Information System (SEIS).

### Sustainable Development Goals (SDG)
Climate change indicators of SDG have been developed on the basis of ArmStatBank and UNECE indicators, which are available on a separate platform of Armstat website. 13 global (Annex 2) and 5 national SDG indicators are available on the SDG platform.

### System of Environmental Economic Accounting (SEEA)
The dynamic series of Water Accounts for 2015-2021 are available in the Water Accounts (SEEA) sector of ArmStatBank, while the Handbook of "Formation of the System of Water Satellite Accounts in Armenia (Armenian)" (only arm. version) is available on the website of Armstat.

The official website of the RA Statistical Committee includes several databases.
03

Section C

Strengthening the "indicator-policy" link in climate change
Global Set of Climate Change Statistics and Indicators

UNSD Climate Change indicators

In 2020, Armstat, among the relevant institutions of the remaining 85 countries, filled out a questionnaire on 134 CC indicators

- "compliance" 26.1%
- "calculated by a justified methodology" 23.1%
- "available" 24.6%
Ministry of Environment
Armstat is responsible for only 9 of the 35 calculated indicators, which are obtained as a result of households and other surveys.

8 CC indicators (water resources, atmospheric air, forest, greenhouse gases, etc.)

Territorial Administration and Infrastructure
5 CC indicators (mainly on energy sector)

Ministry of Internal Affairs
2 CC indicator (on natural disasters)

Other entities
The rest 11 indicators are provided by different agencies
Studied phenomena under the influence of CC

- Is the positive or negative trend of the phenomenon/sector related to climate change?
- To what extent has climate change affected the observed phenomenon/sector?
- Is the CC effect direct or indirect (mediated)?
- How could be separated the CC impact from the influence of other factors, etc?
“The Problems of Accessibility and Quality Assurance of the Statistical Data for Climate Change National Report” Workshop

Based on climate change statistics developed by UNECE/UNDS and the complete list of indicators (158 indicators) and taking into account the country's CC specifics, the sector experts assessed and compiled a list of 43 indicators, which are mostly requested by researchers and policy makers.
Mostly requested and available indicators

1. Drivers – 8 indicators
- Total greenhouse gas emissions per year
- Greenhouse gas emissions from land use, land use change and forestry
- Total greenhouse gas emissions from the national economy
- Total primary energy production from fossil fuels
- Final energy consumption per capita
- Population growth
- Number of (fossil-driven) vehicles per capita
- Intensity of use of forest resources

2. Impacts – 7 indicators
- Direct agricultural loss attributed to disasters
- Crop loss due to climate extremes
- Impact of climate change on livestock productivity
- Renewable freshwater resources per capita
- Water quality
- Climate-induced air pollution
- Change of land area affected by soil erosion

3. Vulnerability – 8 indicators
- Prevalence of undernourishment
- Customer price of drinking water
- Population relying on subsistence and pastoral farming
- Infrastructure vulnerable to climate change
- Proportion of population served by municipal waste collection
- Proportion of population using (a) safely managed sanitation services and (b) a hand-washing facility with soap and water
- Proportion of population using safely managed drinking water services
- Proportion of the population living below the international poverty line by sex, age, employment status and geographic location (urban/rural)

4. Mitigation – 9 indicators
- Production of renewable energy as a proportion of total energy production
- Renewable energy share in the total final energy consumption
- Non-fossil fuel energy consumption as a proportion of final energy consumption
- Share of climate change mitigation expenditure in relation to gross domestic product
- Climate change mitigation technology
- Greenhouse gas intensity of the economy (including transport)
- Rate of decrease of greenhouse gas emissions per unit of gross domestic product
- Increase in forest area
- Progress towards achieving the nationally determined contribution

5. Adaptation – 11 indicators
- Proportion of sectors planning, budgeting and implementing climate change adaptation actions
- Coverage of early warning systems
- Proportion of population with access to climate information
- Number of reports on climate change statistics and indicators
- Share of green urban areas in the total area of cities
- Progress towards sustainable forest management
- Meteorological monitoring network
- Air quality monitoring systems
- Water monitoring systems
- Municipal waste collected per capita
- Proportion of domestic and industrial wastewater flows safely treated

Total 43
Section D

Developments in National Climate Change Statistics
Disaggregation of energy consumption by NACE
The reporting form is still under discussion with the relevant specialists of the "Electric Networks of Armenia" CJSC Company.

Disaggregation of emergency events by types
The semi-annual statistical reporting form "On the reported emergency events" is under review, as a result of which the number of reported emergency events and the number of victims by types of emergency will be available for each marz/regions and Yerevan city. The number of victims will also be separately presented by gender.

Complete information on the consumption of manure and firewood
From the GHG inventory perspective this information still remains as a challenge. Armstat obtains it from the Household’s Integrated Living Conditions Survey. Another source of information on firewood is the administrative register (forest management) of the Ministry of Environment, but these two data vary widely and are not comparable.

2023 Statistical Program
"Greenhouse Gas Emissions" and "Land Cover Classification"

Green urban areas
Armstat jointly with the Yerevan Municipality has developed a reporting format on green urban areas, which will also enable to calculate or adjust indicators aimed at sustainable development goals (SDGs 11, 13 and 15).

Pesticides and fertilizers
Since it is not possible to report on the quantities of used pesticides and fertilizers, only the quantity of imported pesticides and fertilizers are used as statistical indicator.
Recommendations

- Ensure the data access provisions in the Statistics Law and collaboration practices with other stakeholders are kept up to date in the changing data landscape
- Further strengthen ARMSTAT’s role as a data steward for Environment Statistics
- Ensure that the human and financial resources are fully in place
- Create a sustainable specific capacity plan for the Nature Protection Statistics Division
- Further clarify the role of the ARMSTAT State Council on Statistics in reviewing and approving methodological changes in Environment Statistics
- Ensure that the mandated quality dimensions are enforced in practice
- Continue the integration of concepts and definitions in line with European standards for Environment Statistics
- Ensure that Environmental Protection Expenditures are defined and comply with the EU CEPA 2021
- Ensure integration of specific classifications that are used in Environment Statistics
- Continue the application of UN FDES, UN SEEA and SDG frameworks
- Set up a National Environmental Indicator Catalogue.
- Continue existing work to access and introduce new, alternative, and complementary administrative data sources
- Assess the importance of developing a data platform of e-governance services that will serve as a channel for various data sources, including data sources to produce Environment Statistics.
- Develop a formal working group for regular contacts and interaction between the Nature Protection Statistics Division and key users and stakeholders
- Assess the opportunity and develop a strategy for allocating existing staff resources to Environment Statistics production
- Identify and investigate potential sources of errors and biases that may have an impact on the Environmental Indicators and Statistics
- Introduce metadata attributes to all Environmental Indicator and Statistics releases
Thank You!

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