Report of the Expert Forum for Producers and Users of Climate Change-related Statistics

Geneva, 2-3 September 2015

Summary

This document presents the outcome and discussions at the Expert Forum for Producers and Users of Climate Change-related Statistics, which took place from 2 to 3 September 2015 in Geneva. The meeting discussed emerging information needs that relate to climate change, and considered how data producers can best respond to them. The Expert Forum was comprised of seven sessions: (a) Setting the scene; (b) Responding to the needs of the new global climate change agreement; (c) Road map towards better climate change-related statistics; (d) Building capacity to provide climate change-related statistics; (e) Climate change indicators and SDG indicators; (f) Emerging areas – Measuring extreme events; and (g) The way forward. The conclusions of the meeting will provide input to the work of the UNECE Steering Group on climate change-related statistics and two Task Forces one of which is developing a set of key climate change-related indicators and the other defining the role of national statistical offices in measuring extreme events and disasters.

Attendance

1. In total, 84 participants attended the Expert Forum. The following countries, represented by national statistical offices (NSOs), ministries of environment, environmental agencies, meteorological services or research institutes participated: Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Canada, Chile, China, Colombia, Czech Republic, Denmark, Finland, France, Georgia, Germany, Greece, Hungary, Ireland, Italy, Kyrgyzstan, Latvia, Luxembourg, Mexico, Netherlands, Norway, Poland, Republic of Moldova, Russian Federation, Slovakia, South Africa, Sweden, Switzerland, Tajikistan, Turkey, Ukraine, United Kingdom and United States of America.

2. Representatives of the following international organizations attended the meeting: Directorate-General for Climate Action of the European Commission (DG CLIMA), Eurostat, European Environment Agency (EEA), Joint Research Centre of the European Commission, Food and Agriculture Organization (FAO), Intergovernmental Panel on Climate Change (IPCC), International Energy Agency (IEA), Organisation for Economic Co-operation and Development (OECD), United Nations Framework Convention on Climate Change (UNFCCC), United Nations Office for Disaster Risk Reduction (UNISDR), United Nations Statistics Division (UNSD), United Nations Development Programme in Tajikistan, United Nations Interim Administration Mission in Kosovo (UNMIK), United Nations Industrial Development Organization (UNIDO), World Bank, World Meteorological Organization (WMO), United

Nations Economic Commission for Asia and the Pacific (UNESCAP) and United Nations Economic Commission for Europe (UNECE).

3. Representatives of the following universities, media and private companies also attended: King Abdullah University of Science and Technology (KAUST) of Saudi Arabia, Slovak University of Technology in Bratislava, University of Geneva, Carbon Brief and Midsummer Analytics.

4. The Expert Forum was chaired by Ms. N. Holmengen of Norway who also chairs the Steering Group on climate change-related statistics. The Steering Group was set up under the Conference of European Statisticians (CES) in October 2014 to advance the work on climate change-related statistics and promote coherence between greenhouse gas (GHG) inventories and official statistics.

Session 1 – Setting the scene

Key note speech: Dr. M. Beniston (University of Geneva)

Presentations: Ms. N. Holmengen (Norway) and Mr. R. Smith (Midsummer analytics)

5. The first session was organized by chair of the Expert Forum, Ms. N. Holmengen (Norway). The session set the scene reflecting the data needs arising from global initiatives relating to climate change, and introduced the topics of the Expert Forum as well as the *CES Recommendations on Climate Change-Related Statistics*, released by UNECE in 2014. The following key issues were raised during the session:

- Data are urgently needed for monitoring of climate change, its impacts, adaptation and mitigation. New data are required to report on progress towards:
    - Sustainable Development Goals (SDGs) some of which relate to climate change,
    - Sendai Framework for Disaster Risk Reduction with seven global targets and
    - Targets to be agreed in the upcoming Paris Climate Agreement.
- It is time to move forward in implementing the *CES Recommendations on climate change-related statistics* and identify priorities nationally and internationally.
- Researchers experience difficulties in linking environmental data (which are often based on grids) with socio-economic data (often produced by administrative area). NSOs should coordinate harmonization of these data to enable important climate research projects. Furthermore, access to data needed for research should be improved, where possible allowing free access for researchers.

Session 2 - Responding to the needs of the new global climate agreement

Papers: NSOs' entry points to the greenhouse gas (GHG) inventory system

Presentations: Mr. S. Kononov (UNFCCC), Dr. R. Pipatti (Finland) and Ms. S. Korajcevic (Bosnia and Herzegovina)

6. The second session was organized by Mr. S. Kononov (UNFCCC) to discuss how official statisticians could contribute to the information needs of the international climate change regime, including new needs arising from the Paris Climate Summit. In December 2015, 196 countries will meet in Paris to agree on the new global climate agreement. The agreement aims at ambitious action before and after 2020 when the new agreement will come into force.

Countries shared the following examples of their experience[1]:

- GHG inventories are compiled within the NSO in Finland and Turkey. Finland noted that this allows the use of data from existing surveys that may also be adjusted to take into account inventory data requirements. It enables the use of relevant data collected by the NSO also for inventory compilation. This crosschecking of data helps understand discrepancies and enhance consistency of information.
- Bosnia and Herzegovina highlighted the importance of creating legislation that could enable NSO's involvement in the GHG inventory process. Formalizing the framework for cooperation among institutions might help address problems of data exchange. NSOs need to provide strong messages to justify their role in providing data for reporting to UNFCCC.
- Armenia has created an interagency commission to promote collaboration in environmental statistics and is developing a single environmental information system for the country. As a result, new data on extreme events and new indicators, e.g. on green economy, are being developed.
- Ukraine emphasized that strengthening the NSO role might be impossible without relevant legislation and high-level support to involving official statisticians in climate change-related statistics. Clearer division of work would be important for avoiding duplication of data collection.
- In Norway the Environment Agency reports the GHG inventory to UNFCCC, whilst the NSO produces emission estimates. The emission statistics and inventory results are, thus, identical with differences in data disaggregation only. The Environment Agency provides part of the resources required for this work at the NSO.
- In Kyrgyzstan the NSO provides preliminary data for the GHG inventory compilation. A working group with representatives of involved agencies is now reviewing the methodology of inventory calculation. The NSO is involved even with limited resources available for this work. NSO's staff would need to learn more about measuring climate change as this is a new area of work for official statistics.

The following issues were discussed:

- NSOs' key actions in support of GHG inventory work are to: (1) review information systems, definitions and frameworks of inventory compilation; (2) provide activity data from the national statistical system (NSS); (3) link inventory data with other statistics or reclassify them to create new products, such as air emissions accounts; (4) collaborate with inventory review teams; and (5) react to feedback on quality improvements or needs for new data.

[1] For additional examples, see: Note on NSO entry points to the greenhouse gas inventory system: www.unece.org/fileadmin/DAM/stats/documents/ece/ces/ge.33/2015/mtg2/NSO_entry_points_final.pdf

- NSOs can also contribute by improving environment statistics and the coordination of work in this area. Inventory compilers would also benefit when NSOs establish the System of Environmental-Economic Accounts (SEEA) in good quality.
- NSOs should be the primary data source for GHG inventories. Inventory review teams should monitor that existing data are used in inventory compilation to the extent possible. Similarly, inventory requirements and guidelines should recommend the use of existing statistical data.
- While NSOs are experienced in compiling consistent time series, inventory agencies may expect much longer time series than feasible to produce at the NSOs, e. g. back to 1990.
- Engaging NSOs in inventory compilation may be challenging as funds are provided to other agencies who may not accept NSO involvement. Similarly, to fully engage in the process, NSOs need a strong demand or mandate for their role with high-level support, legislation or formal agreements. Making provision of data for GHG inventories part of official statistical activities could make NSOs more engaged.

The key outcomes of the session:

- There is a need to increase collaboration between the NSOs, agencies responsible for GHG inventories and other data producers that prepare data for reporting under UNFCCC. In some countries, such collaboration is already well established but in many cases it needs improvement and/or strengthening, in particular in view of more complex data needs.
- Of particular value is engagement of NSOs in the preparation and quality control of activity data needed for the preparation of GHG inventories, energy balances being a typical example.
- The engagement of NSOs in the work on GHG inventories and other climate-related data can take different forms; for the engagement to be effective, it is important to tailor the engagement model to the particular national circumstances and the existing practices in the country. In any case, it is important to establish a dialogue between the NSOs and the national climate community. Practical ways to work together should be found and implemented in a sustainable manner, with a clear understanding of responsibilities and information flows. Both sides should reach out to enable that.
- High-level support to the strengthening of the NSOs' role in the preparation and use of climate change-related statistics is often critical, especially when that role is not yet well established in the country and collaboration at working levels faces challenges. Such support is particularly important when several national ministries or agencies need to be involved and when additional resources are required.
- All this becomes more and more important in view of the likely new or additional data needs because of the emerging new global agreement in the international climate change regime.

Session 3 - Road map towards better climate change-related statistics

Papers: CES Recommendations on Climate Change-Related Statistics

Presentations: Mr. R. Smith (Midsummer Analytics), Ms. C. Cahill (Canada), Mr. S. Schenau (Netherlands) and Mr. G. Brady (Ireland)

7. The third session was organized by Mr. R. Smith (Midsummer Analytics) to discuss the implementation of the CES Recommendations and identify practical priorities and first steps for improving climate change-related statistics. UNECE published the *CES Recommendations on Climate Change-Related Statistics* in December 2014. These were the first ever recommendations aimed at improving official statistics to support climate change analysis and reporting on GHG emissions under UNFCCC.

The following innovative practices were discussed:

- In Canada close collaboration among statisticians, researchers and environment experts has increased knowledge and led to methodology improvements in statistics relating to climate change. As a result, Statistics Canada nowadays disseminates widely climate change-related information, including scientific data. This work currently focuses on developing the measurement of ecosystem goods and services (EGS).
- Statistics Canada is building their expertise in geospatial aspects and remote sensing which is highly valued by partners in the climate community.
- Statistics Netherlands has developed many products to provide climate information, such as (1) an estimate of CO_2 emissions that is published on a quarterly basis and attracts a lot of attention in the media; (2) statistics on CO_2 emission permits by industry based on data by the Dutch emission authority; and (3) mitigation expenditure statistics using government reports and environmental expenditure accounts.
- Ireland underlined that NSOs are in a unique position as they can combine survey and administrative data to develop statistics for monitoring climate change. Collaboration among agencies enables reuse of existing data and helps avoid duplication of data collection. In the longer run it can also contribute to improved data linking and harmonization.
- There is a lot of demand for better carbon footprint indicators. Statistics Netherlands developed a single-country national accounts consistent (SNAC) carbon footprint using input-output tables from national accounts and SEEA. Although methodologies for calculating the carbon footprint are at experimental stages, it would be useful to continue to reconcile the carbon footprint data of international databases, based on OECD experience, and to pilot test the compilation of SNAC indicators on other countries' data.
- These examples show that better cooperation between environment agencies, academia and statisticians is not only beneficial for meeting the requirements of reporting to UNFCCC, but also for driving the work forward to meet national priorities.

The following priorities for implementing the CES Recommendations were underlined:

- Many of the individual actions in the *CES Recommendations* are interlinked and priorities differ across countries. On one hand, the CES Recommendations should be flexible and easy to adjust to national priorities, and on the other hand practical

examples of how to improve existing statistics or data collections would support implementation.

- At the first stage, it would be important to achieve a formalized role for the NSO in the national inventory system, as a provider of activity data as a minimum. Extended collaboration among all producers of climate change-related statistics could then help increase the awareness and use of existing statistical data and exchange of knowledge.
- The increased collaboration could help recognize the needs to improve official statistical data for GHG inventory purposes and agree on priority actions with agencies responsible for GHG inventories as reflected in countries' inventory review reports.
- Improving the coherence of GHG inventories and official statistics was considered important but challenging. NSOs may not be represented in UNFCCC negotiations, but could contact UNFCCC focal point with concerns relating to reporting under UNFCCC. Statistical and climate communities should harmonize methodologies between inventories and official statistics at international level.
- Implementing SEEA and the Framework for the Development of Environmental Statistics (FDES) are high on the NSOs' agenda. Therefore, reviewing how climate change-related statistics could be derived from these frameworks should be a priority area for further work.

The key outcomes of the session:

- The Expert Forum reconfirmed the 9 main CES recommendations on the climate change-related statistics and the need for NSOs' actions to implement those recommendations.
- Prioritizing the CES recommendations based on costs, time required for implementation and expected impact was considered useful as a tool for prioritization recognizing that priorities differ across countries. A road map should be developed to illustrate the use of the prioritization table for selecting national priorities for improving climate change-related statistics. The road map could explain the recommended actions and provide examples of prioritization in countries at different stages of developing their climate change-related statistics.
- NSOs would need tools to demonstrate to the general government and policy makers why NSOs should be involved in climate change-related statistics.
- Examples of good practices and innovations in the area of climate change-related statistics, shared during the Expert Forum and reflected in the CES Recommendations, should be collected and made available in a web repository with links to the respective CES recommendations. Countries were willing to provide additional examples if needed.
- The participants asked the Steering Group to assess progress made by countries to be discussed at future Expert Forums.

Session 4 - Building capacity to provide climate change-related statistics

Papers: Capacity gaps in climate change-related statistics

Presentations: Mr. K. Tanabe (IPCC), Ms. M. Haldorson (Sweden) and Mr. F. Tubiello (FAO)

8. The fourth session was organized by Ms. A. Ferruzza (Italy) to consider how statistical offices' and inventory agencies' networks could help in sharing of knowledge and good practices to improve the required statistics. Currently, there are no specific mechanisms for building the capacity of statistical systems to provide climate change-related statistics. The *CES Recommendations* note that there are gaps in countries' capacity that make it difficult to provide statistics to assess the impacts and costs of climate change and effectiveness of adaptation and mitigation. Moreover, developing countries will be required to provide new data on climate change mitigation and adaptation to UNFCCC, and new countries are developing their greenhouse gas inventory systems.

The following issues were discussed:

- Reporting under UNFCCC requires also other information than GHG inventory data. NSOs could also contribute with their basic statistics needed for projecting GHG emissions[2] and their data related to national circumstances, measures on climate change mitigation, adaptation, technology transfer, financial resources and education. NSOs could develop mitigation progress indicators, which are largely based on basic socio-economic and environmental data.
- According to a UNFCCC Consultative Group of Experts' survey of non-Annex I countries, GHG inventory is the most challenging part of national communications, and most non-Annex I countries need assistance to develop their capacity to produce all the required information.
- Countries reported difficulties in obtaining the necessary activity data due to lack of access to national statistics at the required level of detail. Confidentiality prevents access to individual data on natural or legal persons as these data are to be used exclusively for statistical purposes within NSS or only within the NSO. Therefore, there are cases where NSOs can only provide aggregated data for GHG inventories. Developing national legal frameworks to give a mandate to NSOs for data collection and sharing for GHG inventories would be important.
- Relevant data from regular NSOs' surveys should be used for GHG inventories to the extent possible before collecting new data. NSOs would also be better placed to collect new data for GHG inventories as they can ensure the use of best methodologies and, thus, greater comparability and can use the data for many statistical purposes.
- Capacity building should focus on improving the quality of data needed for the estimates of key inventory categories, which are the largest, have the greatest potential to change, or have the greatest uncertainty in each country.
- NSSs need to build their capacity to geo-reference data. Combining NSS's geo-referenced data, or even data with postcodes, with climate data would provide

[2] UNFCCC COP Decision 9/CP.2 lists data needed for making projections on GHG emissions such as GDP level and growth, exchange rates, number of population and growth, interest rates, energy efficiency, number of dwellings, commercial floor space and turnover, vehicle-kilometers, rate of penetration and use of new technologies.

valuable possibilities for climate analysis. This calls for joint work between spatial and statistical communities.

- Agencies responsible for GHG inventories receive resources for carrying out reporting under UNFCCC. To share part of these resources, NSOs need to convince them of how NSOs could make the GHG inventory work more efficient and less costly for them and how they could help avoid duplication of effort. Official statisticians need to capitalize their statistical knowledge by contributing to IPCC methodology development.
- All NSOs would benefit from sharing of experience and capacity building on how to improve their data for reporting under UNFCCC. Capacity building should also target environment ministries and agencies responsible for GHG inventories to help them use and understand statistical data and methodologies, and to ensure that all agencies work to the same direction.
- The Expert Forum is valuable for sharing ideas. The next step is to support implementation of these ideas in practice with activities tailored to the region. Countries should be given assignments to plan their national work and report back to the Expert Forum.
- NSOs capacity to support disaster risk management requires improvement. For instance, census data are critical for planning local adaptation measures, building resilience and identifying vulnerable areas and people. The gaps of census data in terms of disaster risk management should be analyzed.

The key outcomes of the session:

- Increased awareness, resources and capacity at NSOs could allow better use of data already collected for the purposes of monitoring issues related to climate change and for GHG inventory compilation. Also, ongoing data collection efforts by statistical offices could be adjusted by taking into account the needs of national GHG inventories.
- The UNECE Expert Forum is very useful for countries and international organizations to discuss common work, and should be organized regularly as a key tool to:
    - Share experience and good practices in the UNECE region and beyond as all countries are facing challenges due to climate change and will benefit from the collaboration.
    - Share information between involved organizations and communities, such as national statistical offices, agencies responsible for GHG inventories and international organizations.
    - Support UNECE Task Forces by providing feedback from the wider expert community before reporting back to the CES and its Bureau.
- The participants asked for reviewing the need for capacity building in the area of climate change-related statistics, particularly the current situation and challenges of the countries of Eastern Europe, Caucasus and Central Asia.
- Countries suggested that international organizations, within the Steering Group, could consider possible capacity building actions and mechanisms, for example training workshops, advisory missions and study visits.
- One option would be to organize a special session for the countries of Eastern Europe, Caucasus and Central Asia on the occasion of the next Expert Forum. Based on the

regional road map, countries could draft their national road maps for the development of their capacity for climate change-related statistics.

- Capacity building activities should target NSOs and other data providers to help them improve data for reporting under UNFCCC and national uses.
- The activities should also target other organizations, including agencies responsible for GHG inventories and other agencies that produce climate information to build their knowledge on the statistical data in order to support use of these data for their work.

Session 5 - Climate change and SDG indicators

Papers: Developing a Set of Key Climate Change-Related Statistics: the UNECE Task Force approach

Presentations: Ms. T. Luige (UNECE) and Mr. O. Thunus (Luxembourg)

9. The fifth session was organized by Ms. A. Tudini (Italy) to discuss selecting the set of key climate change-related indicators and its links to the planned SDG indicators. In October 2014, a UNECE Task Force started to develop a set of key climate change-related indicators using existing statistical frameworks, such as the System of Environmental-Economic Accounting (SEEA). The set will be built around the scope of climate change-related statistics of the CES Recommendations to include: emissions, drivers, impacts, mitigation and adaptation.

The following issues were discussed:

- Statisticians are involved in setting up the SDG monitoring framework as the United Nations Statistical Commission (UNSC) was asked to formulate the indicators. Two groups are working in this direction: the Inter-Agency Expert Group on SDGs (IAEG-SDG) and the High-Level Group for partnership, coordination and capacity building for post-2015 monitoring.
- Policy makers who developed the SDGs and targets have certain expectations on the SDG indicators. These are sometimes different from what official statisticians can offer taking into account data availability and quality. As the number of indicators is likely to be high, it will be important to consider how the SDG monitoring can be best implemented in the UNECE region.
- IAEG-SDG will finalize their indicator proposal in autumn 2015 for the UNSC meeting in March 2016. They asked for comments on the current proposal by 7 September 2015.
- Parallel to the SDG process, the UNECE Task Force on a set of key indicators on climate change started work by identifying the key policy questions against which it will select the key indicators.
- The UNECE Task Force should provide a cross-reference to the relevant SDGs and continue to provide feedback to the SDG process from the climate perspective, especially on the importance of aligning the SDG monitoring with existing frameworks, such as GHG inventories.

- The climate indicator set should take into account availability of data by different producers and the frequency at which data could be provided.
- The results of the ranking of policy questions provide a good starting point for selecting the key climate indicators. It would be helpful to categorize the policy questions according to the five elements of the scope of climate change-related statistics.

The key outcomes of the session:

- The Task Force was encouraged to take into account the SDG process and the Sendai Framework for Disaster Risk Reduction. The Task Force could include indicators suggested for monitoring of these frameworks, but complement them with indicators to cover all key aspects related to climate change. It would be useful to provide a cross-reference to other global indicators related to climate change.
- The set of key indicators should also take into account the reporting requirements under UNFCCC, such as possible mitigation progress indicators and other relevant issues that are reported as part of national communications regularly.
- When selecting indicators, the Task Force should pay particular attention to measurability and focus on the use of existing data and statistical frameworks, such as SEEA.
- It is likely that the set of climate change-related indicators will require data that from various different producers. Similarly to the SDG reporting, the compilation of a set of key climate change-related indicators would benefit greatly from efficient coordination by NSOs and collaboration with the private sector, academia and NGOs that produce relevant data.
- The ranking of policy questions carried out among the participants of the Expert Forum shows that the priority indicators differ significantly from those selected for the SDG monitoring. The set of key climate change-related statistics may thus complement the SDG indicators that relate to climate change.
- The Expert Forum asked the UNECE Task Force to convey a concern to the IAEG-SDG relating to the fact that GHG emissions are not included in the draft SDG indicator framework and make a proposal to include such an indicator.
- In the interest of efficiency it would be useful to review the consistency of proposed SDG indicators with existing global conventions and frameworks that require reporting and monitoring.

Session 6 – Emerging issues – measuring extreme events

Presentations: Ms. A. Ferruzza (Italy), Mr. D. Clarke (ESCAP), Ms. K. Ishigaki (UNISDR), Ms. M. Körber (Deutcher Wetterdienst) and Mr. T. De Groeve (Joint Research Centre of European Commission)

10. The sixth session was chaired by Mr. M. Dilley (WMO) and focused on measuring extreme events and associated disasters using official statistics. UNECE established a new Task Force in 2015 to define the role of national statistical offices and their data in measuring extreme events and disasters to support the work of national agencies responsible for

disaster management and risk reduction. The session explored demands for data for analysing extreme events and disasters and reflected on the outcomes of the World Conference on Disaster Risk Reduction, held in Sendai, Japan in March 2015.

The following issues were discussed:

- The session presented an update on the collection and cataloguing of extreme events as an official function of the WMO Regional Climate Center for Europe and guidelines for improving standardization of data on associated losses and damage.
- The disaster risk community is facing similar challenges as the statistical community in developing a new monitoring mechanism for the Sendai framework that should ensure compatibility with the SDG monitoring.
- Statisticians and disaster risk experts should work together to agree on common terms and definitions that could be used for the measurement of disasters and extreme events, such as statistical definitions of "affected people", "economic damage", etc.
- Closer collaboration between statistical and disaster risk communities would help align efforts in measuring disasters. The open-ended intergovernmental working group (OEIWG) is building such collaboration for the monitoring of the Sendai framework to ensure that existing data are used to their full potential. Similarly, collaboration with climate community would help identify disasters and extreme events attributable to climate change.
- A mapping of who collects and publishes data on extreme events and associated disaster losses and damage in countries would be useful for clarifying the division of work.
- The monitoring of the Sendai framework, similarly to the SDG monitoring, is a large exercise. Currently, data lacks harmonization, which would be crucial for bringing data together from a number of producers, including from the private sector. NSOs could play a role in coordinating data provision by bringing the different data together and promoting their harmonization.

The key outcomes of the session:

- Measuring extreme events and disasters is on the top of policy agenda. It is encouraging to see the active involvement of many stakeholders measuring disaster risks and losses or using these data.
- Having relevant and consistent data requires that all stakeholders work in an aligned way sharing data starting from national level up to European and international levels. An active national multi-stakeholder process is needed to bring together data and expertise from NSOs, the private sector, academia and NGOs.
- All presentations reflected the importance of standardization of concepts and classifications to provide useful, internationally comparable data. The World Meteorological Congress has agreed to standardize hydro-meteorological extreme event data, which will facilitate cataloguing of extreme events by National Meteorological and Hydrological Services and Regional Climate Centers. International organizations should work with national authorities and in wide collaboration across

statistical, meteorological and other climate communities to agree on uniform standards for collecting and reporting data on associated losses and damage.

- It is difficult to distinguish between events attributable to climate change and other causes. For doing so scientist will require long time series of consistent data on the frequency of extreme events, their magnitude, location, duration and timing. Data on the people or assets exposed to each event, as well as the related losses would allow scientists to better assess changes in extreme events attributable to climate change. These data would also allow scientist to estimate the hazardousness, exposure and vulnerability to disaster losses and attribute losses and damage to climate change, calibrate investment in risk reduction and adaptation, and evaluate the efficiency of measures.
- OEIWG is working on a set of core indicators to monitor the global targets of the Sendai Framework. The group is building collaboration between NSOs and disaster risk agencies.
- The first discussion on measuring extreme events among statistical, meteorological and other climate communities highlighted the need to continue to work together to respond to the increasing need for better data on extreme events and disasters. NSOs could help coordinate and bring together the relevant data needed for disaster management at the national level, and provide guidance on the standardization of data in line with internationally agreed statistical standards.

Session 7 – The way forward

11. The session was organized by chair of the Expert Forum, Ms. N. Holmengen (Norway). The aim was to identify concrete steps to be taken in implementing the *CES Recommendations* and carrying out further work in climate change-related statistics.

The key outcomes of the Expert Forum:

- **New data needs are arising** from various global initiatives of high political importance, in particular the existing and new climate agreements, SDGs and the Sendai framework for disaster risk reduction.
- **High-level support** from the management of NSOs, inventory agencies, other stakeholders and policy makers is crucial for developing climate change-related statistics. The UNECE Steering Group will consider how to demonstrate to stakeholders the benefits from collaboration with statisticians and from using official statistics for the monitoring of climate change.
- **Increased collaboration** involving NSOs, agencies responsible for GHG inventories and other data producers is crucial for ensuring high quality reporting under UNFCCC. In addition to GHG inventories, national statistical offices' data are needed much more widely under the UNFCCC reporting as baseline data for emission projections and reporting on national circumstances, climate change adaptation and mitigation, technological exchange, financial resources and education. The UNECE Steering Group will identify actions to align work among different communities producing these data.

- The statistical community is **developing good practices** in the field of climate change-related statistics: The Expert Forum provided examples of new statistics on issues related to climate change and arrangements for better collaboration among agencies involved in compiling GHG inventories. Countries asked the UNECE Steering Group to collect examples of good practices and make them available as a web repository to illustrate how the *CES Recommendations* could be implemented.
- Countries asked for support for preparing national development plans to develop climate change-related statistics. The UNECE Steering Group will **develop a road map** with a tool for **prioritizing national actions**.
- **The UNECE Expert Forum should be continued** to share experience and good practices and increase collaboration between NSOs, agencies responsible for GHG inventories and international organizations. The Expert Forums also guide the work of UNECE Task Forces by providing feedback from the wider expert community.
- **Capacity building will be necessary** to meet the increasing demand, e.g. to improve data for GHG inventories, increase availability of more disaggregated and geo-referenced climate-relevant data, and develop new statistics to fill gaps. The UNECE Steering Group will consider possible mechanisms to provide such support to countries. The countries of Eastern Europe, Caucasus and Central Asia asked for a review of their challenges and suggested organizing special sessions at future Expert Forums.
- The Expert Forum provided input to the **UNECE Task Force on a set of key indicators** by ranking policy questions. The Task Force will use the result for selecting the key indicators and take into account the related data needs of SDGs, the Sendai framework and reporting under UNFCCC. The Task Force will present the initial indicator set for discussion at the next Expert Forum.
- A recurring issue at the Expert Forum was the importance of **joint international work across statistical, climate, spatial, disaster risk and user communities**. There is a need for clear definition of roles and responsibilities, especially in the measurement of extreme events and disasters. The UNECE Task Force is reviewing the possible role of NSOs and their data in this area, and will report back to the Expert Forum in 2016.

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