Countries' progress in climate change-related statistics

Survey summary

In 2016, the UNECE Steering Group on Climate Change-related Statistics carried out a survey to collect information on countries' progress and plans in developing their statistics to inform climate policy and research. The survey was conducted at the request of the 2015 Expert Forum for producers and users of climate change-related statistics, and the 2016 Expert Forum discussed the results. The survey was sent to all countries that participate in the work of the Conference of European Statisticians (CES).

The statistical community is increasing its efforts to improve data and statistics for climate policies, in particular for emission inventories. For instance, in March 2016 the United Nations Statistical Commission in New York strongly encouraged national statistical offices to develop their work in this respect. The Paris Climate Conference, COP21, called for a system to help measure and increase progress in tackling climate change and the *Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas Inventories* highlight as good practice the involvement of national statistical offices in inventory compilation.

It was with these developments in mind that the Steering Group designed the survey. The survey covered climate change-related statistics widely: Climate action requires high-quality statistics on the environment, energy, agriculture, industry, and so on, to enable the analysis of the impacts of climate change and the measures taken. **The aim was to gather information about countries' achievements and challenges when developing and producing climate change-related statistics.** The survey also collected input as to how UNECE, the Steering Group and the wider international community can support countries in further enhancement of national statistics for climate change policy and analysis. The survey had a special emphasis on greenhouse gas inventories, and looked at how statistics are used in the inventories, and how cooperation and institutional arrangements support the provision of high quality data and statistics for the inventories. The survey was designed to reflect progress against the *CES Recommendations on Climate Change-related Statistics,* which gave rise to most of the questions included in the survey.

The Steering Group designed two partially different surveys: one for national statistical offices and another for institutions responsible for national greenhouse gas inventories. The core part of the two surveys for NSOs and inventory institutions were the same, but some questions were tailored to either group. The NSOs received a broader set of questions than the inventory institutions. Most questions were presented as a multiple choice with options from 1 (strongly disagree) to 5 (strongly agree).

UNECE sent the surveys to 71 national statistical offices (NSOs) that participate in the CES work and 63 institutions responsible for emission inventories in the same region. **In total, 48 national statistical offices and 35 institutions responsible for national greenhouse gas emission inventories responded to the survey.** The Steering Group would like to thank everyone who responded. The survey brought valuable insight into current progress and challenges in developing official statistics for climate change policies and research, and for emission inventories in particular.

This document summarizes the responses of the survey. The first section examines the responses from NSOs and inventory institutions on issues related to data and statistics for inventories. The

second section provides a summary of NSOs' responses on questions that relate to other climate change-related statistics. The third section focuses on issues related to NSOs' skills, capacities and plans to develop these statistics. The document concludes with the feedback on how international organizations can support the enhancement of climate change-related statistics in the future. A partially similar survey of NSOs was carried out in 2011. The survey targeted 69 countries and received replies from 47 NSOs. The following text provides reference to the 2011 survey when comparable questions are available.

I. Greenhouse gas inventories

A. Collaboration between NSOs and inventory institutions

The survey does not provide a direct comparison of the opinions of NSOs and inventory compilers across the same set of countries. 22 countries responded to both surveys. Regardless of this, the survey provides interesting insights into areas where closer collaboration between the two institutions could be useful.

NSOs and inventory institutions both consider that NSOs have a clear role and tasks in support of the inventory compilation (3.9 average) (See figure 1). In more detail (figure 2), more than 70 per cent of both NSOs and inventory institutions agree (agree or strongly agree) to this statement, while 17 and 12 per cent disagree (disagree or strongly disagree), respectively. Comments from inventory institutions give many examples of recent improvements resulting from close cooperation, for instance better harmonization due to the establishment of joint working groups, enhanced data collection by the NSO that also take into account the needs of the GHG inventories, improvements in time series consistency, and improved quality assurance and quality control (QA/QC) routines.

60 per cent of NSOs state that their country has a national working group on greenhouse gas inventories which includes the national statistical office (agree or strongly agree in figure 2). It is interesting to note that the percentage is higher among inventory institutions: **up to 80 per cent of inventory institutions state that their country has formal institutional arrangements for inventory preparation which include the national statistical office** (agree or strongly agree). While this is a positive outcome, still more than one third of NSOs indicate that they do not have such a working group. The differences between NSOs' and inventory institutions' responses may be due to different understanding of the question as the formulation differs slightly (for inventory institutions the survey refers to formal institutional arrangements and for NSOs to national working groups), but may also reflect the different country selection in the two groups. It could also be that those inventory compilers with more formal cooperation with NSOs have been more prone to responding to this survey.

The comments from the respondents verify that there is a wide array of institutional arrangements for the collaboration of NSOs and inventory institutions. They range from NSOs being responsible for the compilation of inventories to them being data providers for a limited number of emission sources. Some countries have a strict legal basis for the cooperation, while others cooperate on a more *ad hoc* basis. Several countries report on having a National Climate Change Committee that overlooks the processes. **While the possibility to exchange data at a detailed enough level is often considered a problem, almost 60 per cent of inventory institutions agree that national legislation enables collaboration and sufficient data exchange** between the statistical system and the inventory compiler.

Collaboration with each other is mentioned by both NSOs and inventory institutions as an area where achievements have been made over the past few years. These improvements include changes

in legislation to ensure cooperation, establishment of coordinating bodies and working groups, and increased informal contacts between experts.

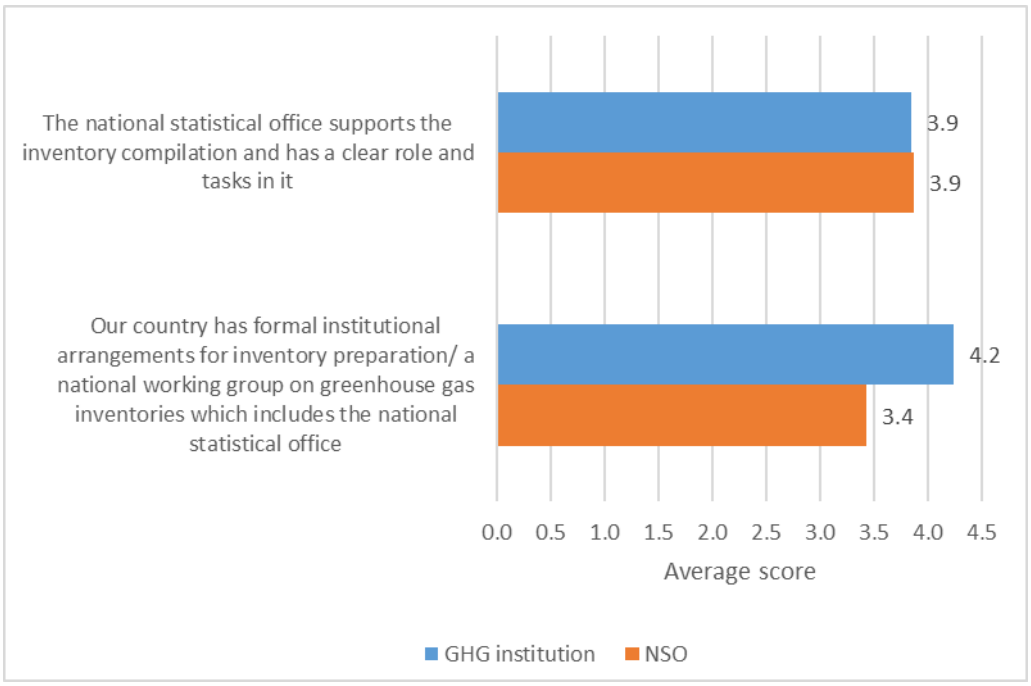

Figure 1 Institutional arrangements. Responses by NSOs and GHG inventory institutions

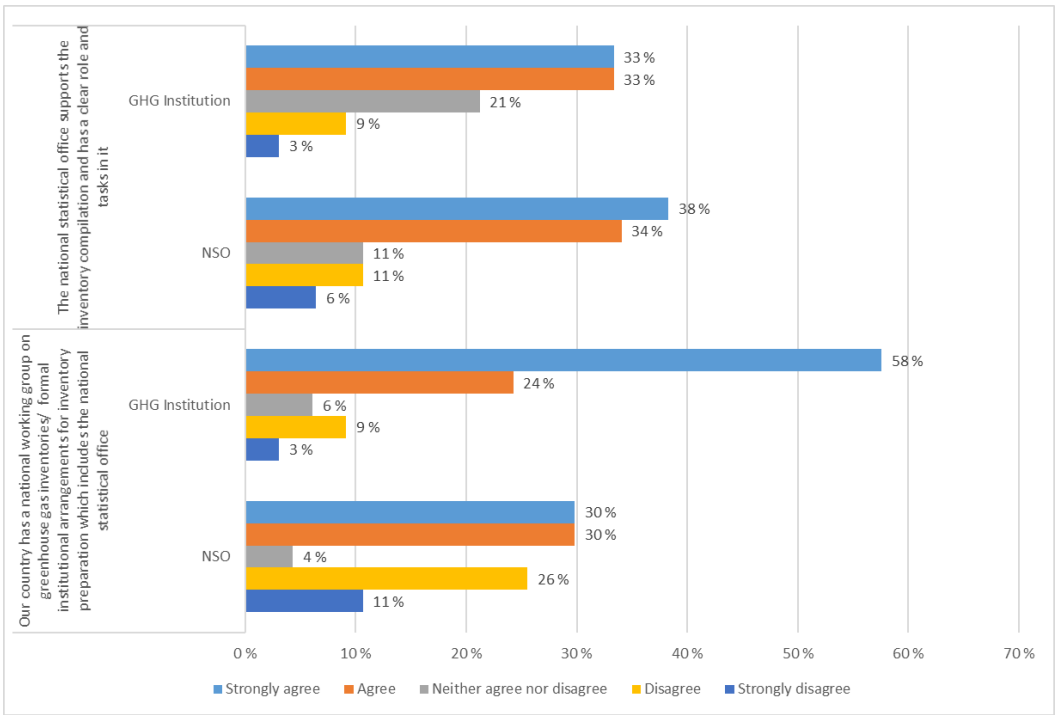

Figure 2 Institutional arrangements. Detailed summary of responses by NSO and GHG inventory institutions

The majority of NSOs and inventory institutions (about 75 per cent) **considers that the emission inventory system is set up in a way to avoid double work and to use existing data and capacity in the country** (figures 3 and 4). Only a few respondents disagree with this statement. At the same time, **half of the inventory compilers agree that the inventory is set up in a way that minimizes response burden** (figure 4), while NSOs are more optimistic (73 per cent agree).

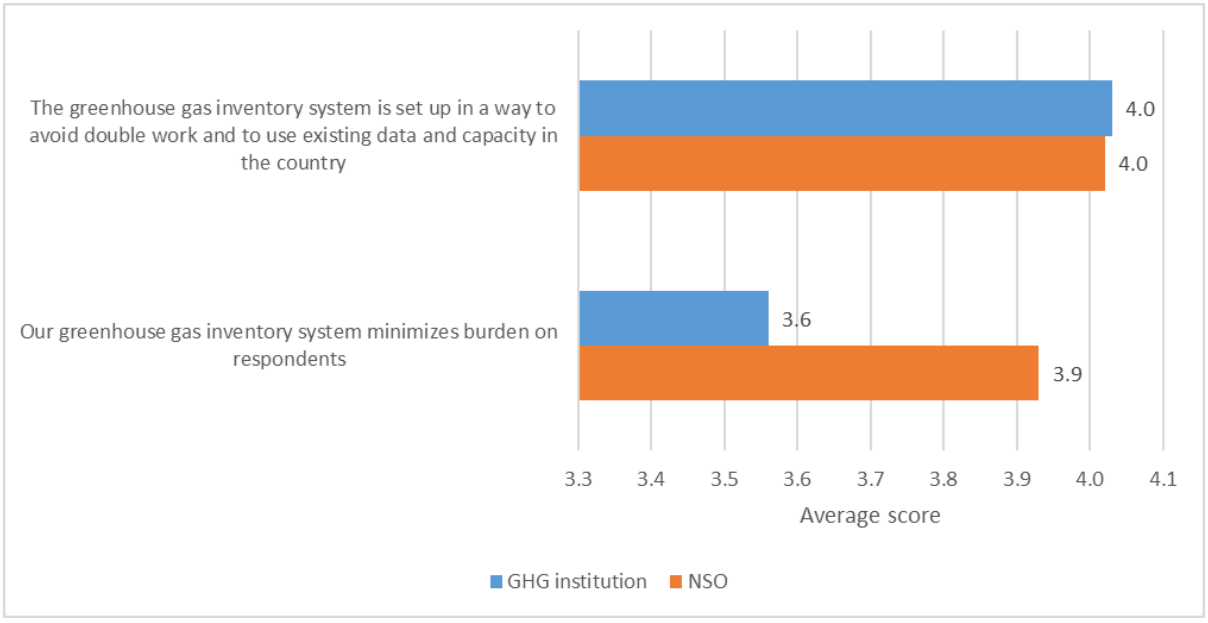

Figure 3 Efficiency in GHG inventory work. Responses by NSOs and GHG inventory institutions

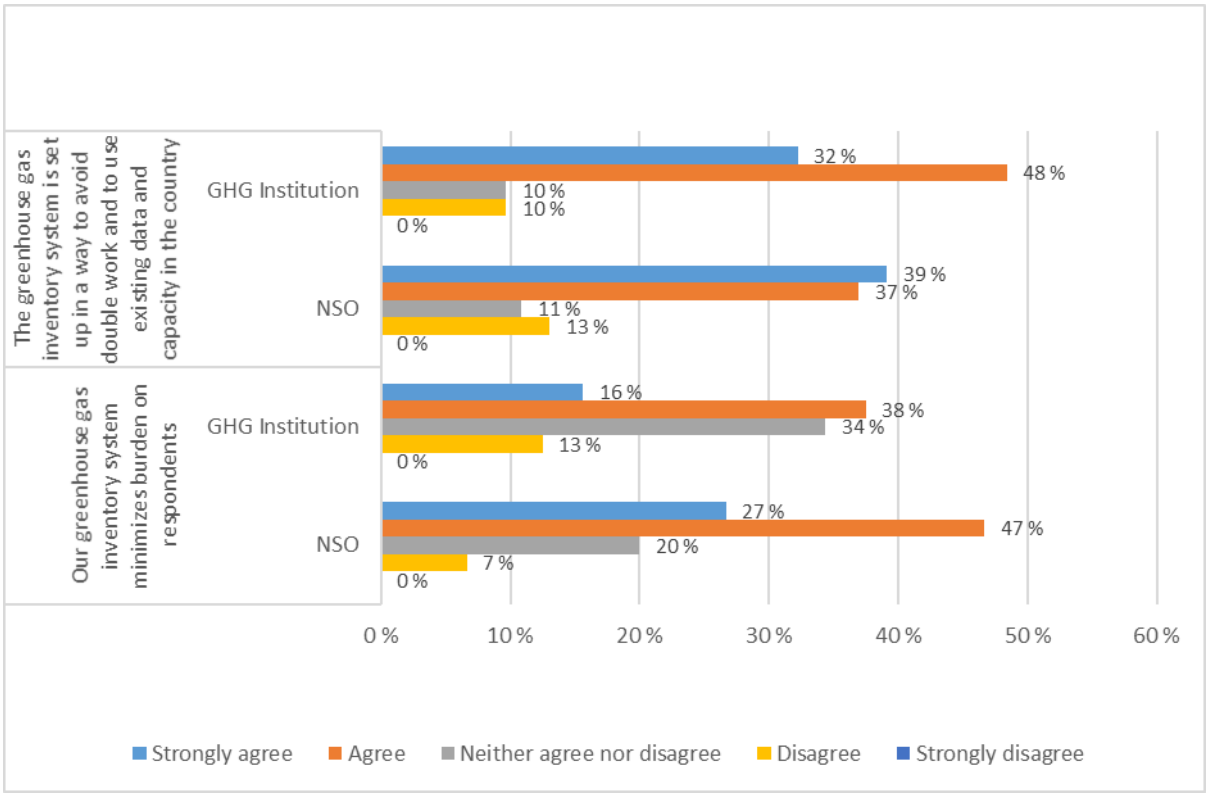

Figure 4 Efficiency in GHG inventory work. Detailed summary of responses by NSO and GHG inventory institutions

Almost every third inventory institution is aware of the CES Recommendations and working towards them, and almost 40 per cent of NSOs are using the recommendations to develop their statistics. This gives an average score of 3.2 from NSOs and 2.9 from GHG inventory institutions (figure 5). Questions were formulated slightly differently, with the NSOs being asked about using the CES Recommendations to improve statistics and work in climate change-related statistics, and inventory institutions being asked about being aware of the CES Recommendations and working

towards their recommendations. It thus seems clear that **the Steering Group should increase efforts to reach out both to the inventory compilers and NSOs to support the use of the CES Recommendations.**

Inventory institutions give a lower average (of less than 3) **to the ability of NSOs' staff to understand inventory compilation**, and the UNFCCC and IPCC Guidelines, than NSOs (average 3.7) (figure 5). **Less than 30 per cent of inventory institutions agree that NSOs' staff understands inventory compilation, while NSOs are more positive** with almost 70 per cent of NSOs agreeing with the statement. In the comments, some respondents questioned the need for thorough knowledge of inventory compilation in the NSO, when its role is primarily to provide source data.

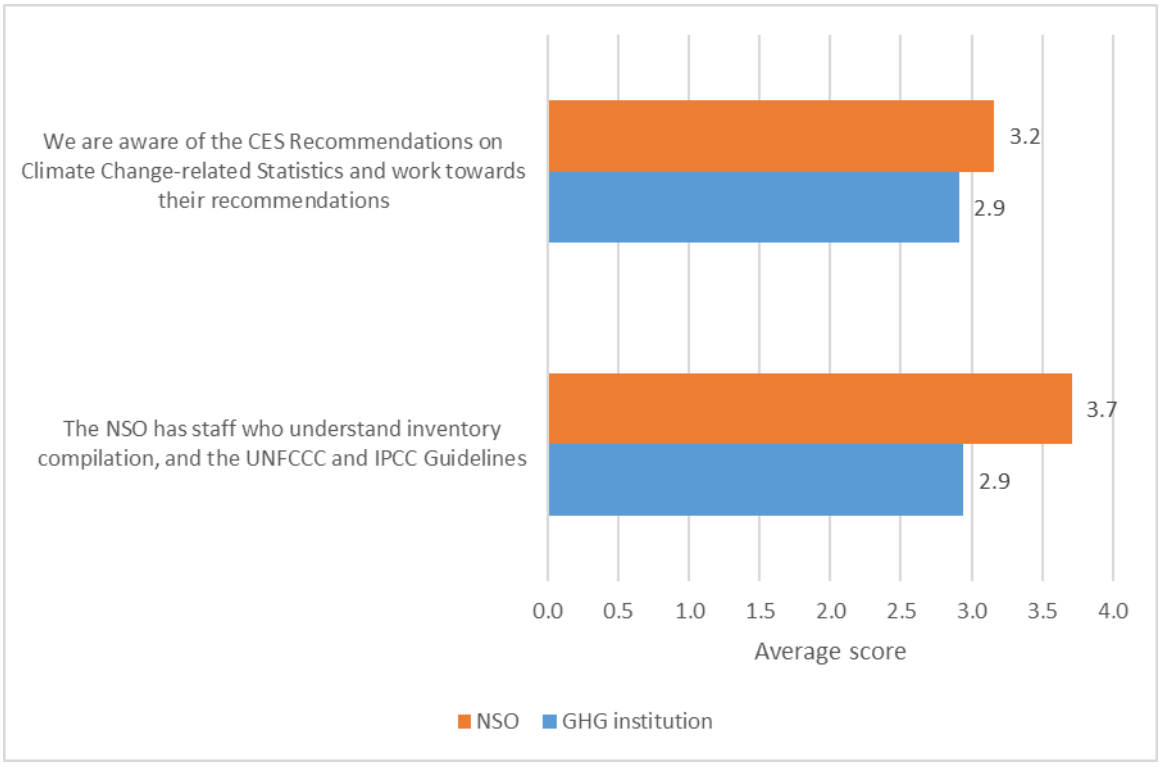

Figure 5 Building knowledge for GHG inventories. Responses by NSOs and GHG inventory institutions

Both NSOs and inventory institutions consider that NSOs do not have sufficient resources for improving data for inventories and on climate change in general (an average score of 2.6 for both) (figure 6). Less than 20 per cent of inventory institutions agree that the NSO has sufficient resources (time, persons, training) for improving its work and data for inventories, while only 15 per cent of NSOs agree that they have sufficient resources for this work. Only half of NSOs and 40 per cent of inventory institutions find that the improvement of data for emission inventories is a priority for the NSO. Some NSOs do note that climate change-related statistics are recognized as a priority, but it is a priority among other priorities that relate to many domains, such as circular economy, green growth, well-being, Sustainable Development Goals (SDGs) etc. Unfortunately, NSOs must progress in all these domains at the same time.

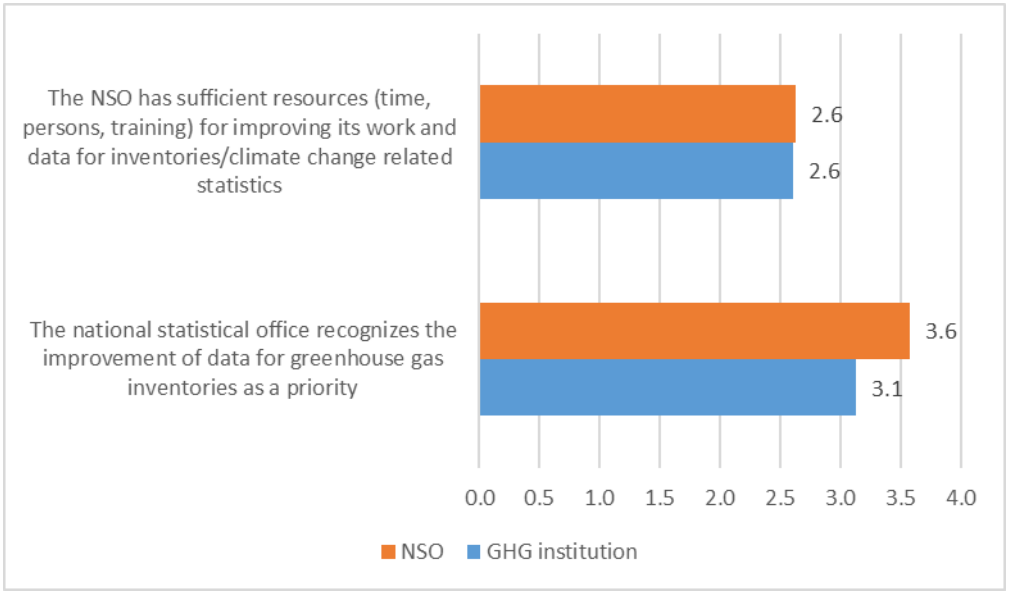

Figure 6 Prioritizing GHG inventories in NSOs. Responses by NSOs and GHG inventory institutions

B. Quality control and quality assurance of emission inventories

The IPCC Guidelines, used for inventory compilation, have clear definitions of QC and QA. Quality Control (QC) is a system of routine technical activities, to measure and control the quality of the inventory as it is being developed. Quality Assurance (QA) activities, on the other hand, include a planned system of review procedures conducted by personnel not directly involved in the inventory compilation/development process. Reviews, preferably by independent third parties, should be performed upon a finalized inventory following the implementation of QC procedures.

NSOs consider that they help more with the quality of inventory data than reported by the inventory institutions. While two thirds of NSOs consider that they help with QA and improvement of inventory data, only one third of inventory institutions agree that the NSO helps with quality control of the inventory as it is being developed (average score 2.9) (see figure 7 and 8). The same share of inventory compilers consider that the NSO has an active role in the annual inventory improvements (e.g. considers improvements in its data collection and verification in line with recommendations from the UNFCCC reviews). An even smaller share of inventory institutions (with an average of 2.6) agree that the NSO helps with the quality assurance of the finalised inventory, including verification of inventory data with data of the national statistical office. Good practice on QA/QC and verification is quite a specific part of the IPCC guidelines for emission inventories, and the routines may not be similar to those of NSOs. **Clearly, collaboration in the area of QA/QC between inventory compilers and NSOs should be strengthened.** On the other hand, QA/QC were highlighted by several respondents as an area where there had been significant improvements over the past few years.

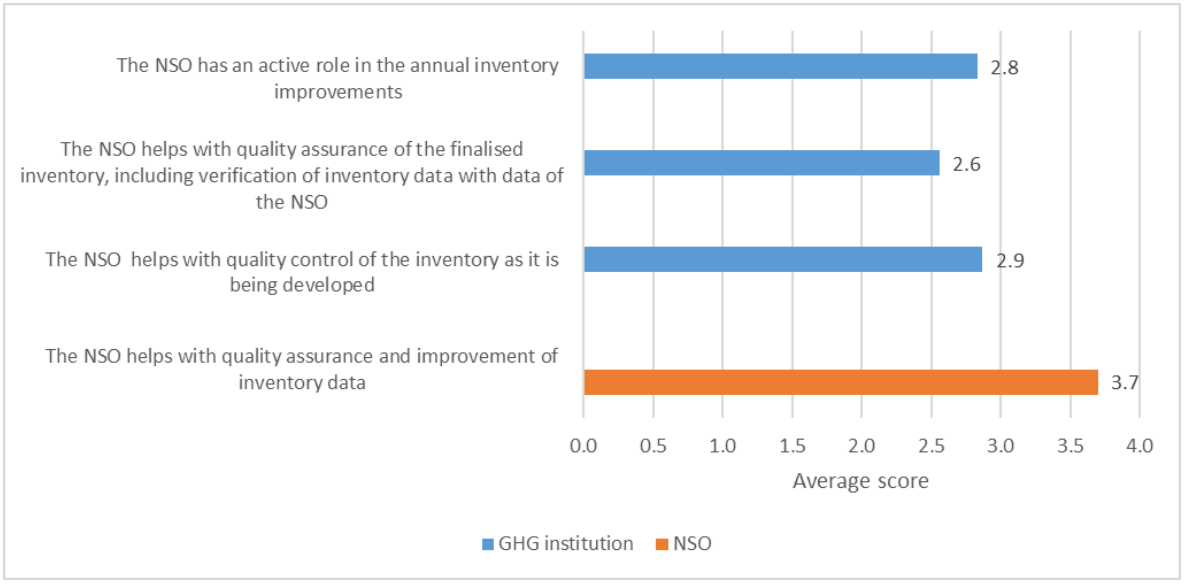

Figure 7 QA/QC of data for GHG inventories. Responses by NSOs and GHG inventory institutions

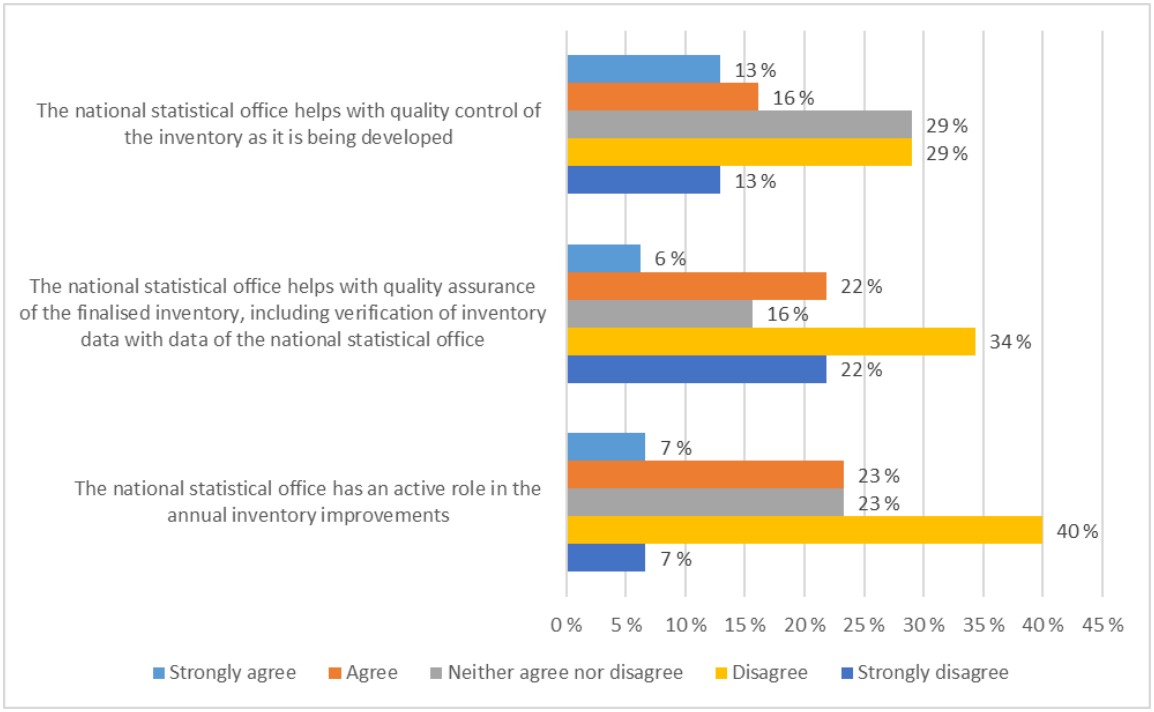

Figure 8 NSO involvement in QA/QC of inventory. Detailed summary of responses by GHG inventory institutions

C. NSOs as data providers to emission inventories

More than 90 per cent of inventory institutions state that the NSO provides data to the inventory compiler and/or that its data are used in the inventory (agree or strongly agree). Only in few cases the NSO is not actively involved in data provision for inventories. This is a major improvement from 2011 when every fourth NSO, surveyed in the CES region, was not involved in emission inventories in any role.

NSOs and inventory compilers agree that there is good coherence between greenhouse gas inventories and official statistics (average score of 4.0) (figure 9 and 10). No institution answered "strongly disagree" with this statement, while in the 2011 survey over 20 per cent of NSOs reported severe problems with the coherence of data. Several comments state that close cooperation has

been key to the increased coherence. At the same time, different classifications or coverage (e.g. economic versus geographic region) were mentioned several times as a challenge for coherence.

Only half of the inventory institutions agree that NSOs' have a clear role in filling data gaps for the inventory (average score of 3.2). Among NSOs, the average score was 3.8, and 75 per cent of NSOs agree that they have a role in filling data gaps. A possible explanation for this difference of opinion is that the communication between the NSO and the inventory institution does not sufficiently capture the NSO's own practical work in filling data gaps that also benefits the emission inventory.

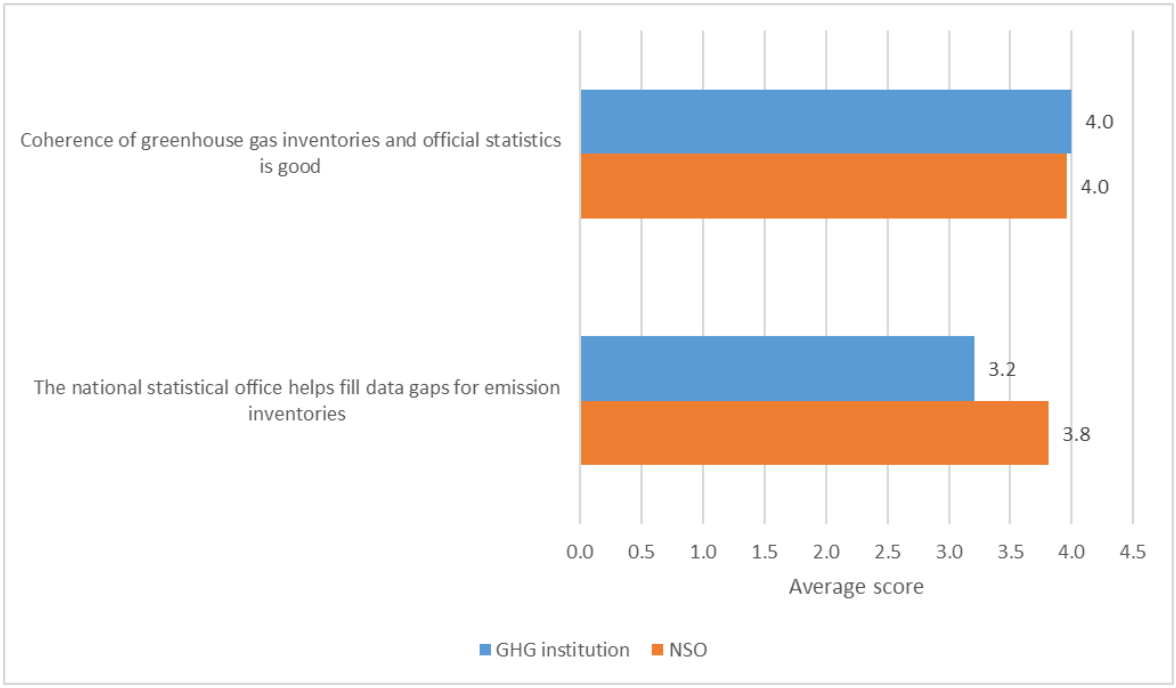

Figure 9 Statistics and GHG inventories. Responses by NSOs and GHG inventory institutions

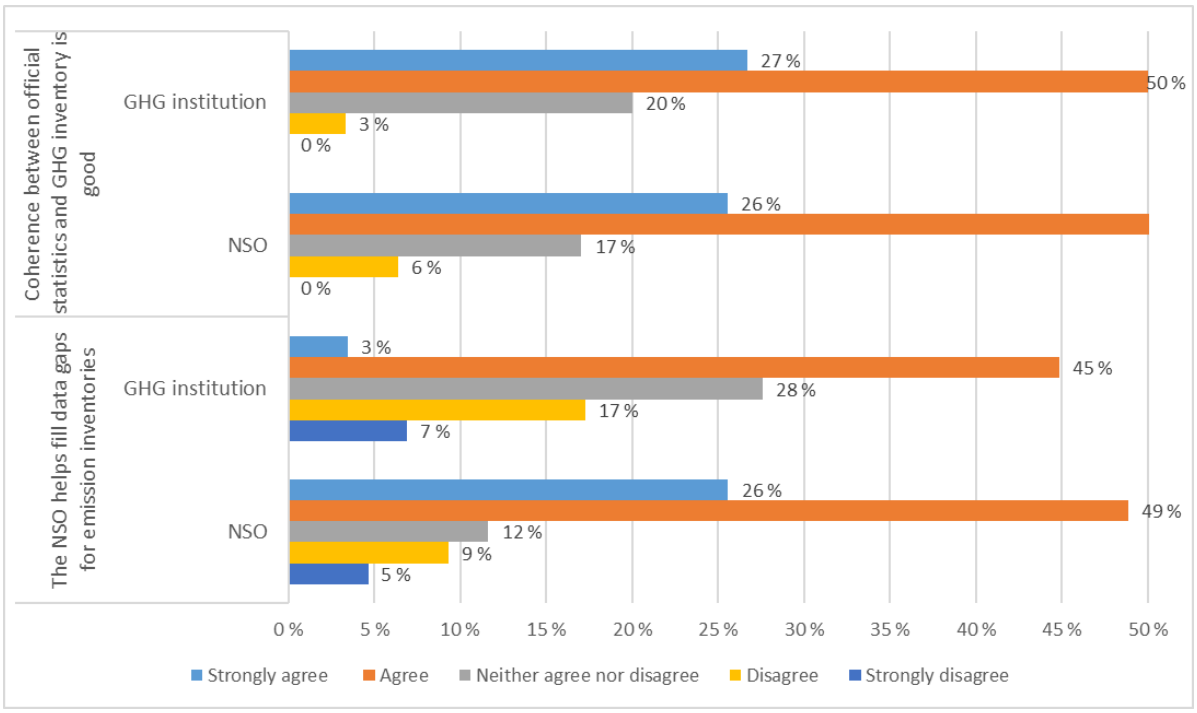

Figure 10 Statistics and GHG inventories. Detailed summary of responses by NSO and GHG inventory institutions

Overall, **both NSOs and inventory compilers experience that data from NSOs are of a quality that fits the purpose of the emission inventories, in particular** accuracy and timeliness (figure 11). However, NSOs are slightly more positive regarding the sufficiency of their data for inventories than the inventory compilers. In addition, almost 80 per cent of the inventory institutions report that **NSOs provide transparently documented data.**

Inventory institutions would especially appreciate having longer and more consistent time series that are more disaggregated. While more than 80 per cent of NSOs agree that they have long and consistent time series, only two thirds of inventory institutions respond the same way. Comments from inventory compilers specify that **periodical changes in statistics pose challenges for time series consistency in the inventory.**

There has been some good progress with access to disaggregated source data for inventories. While in 2011 about one third of NSOs said that they cannot provide detailed enough data for inventories, currently only 4 per cent of NSOs say the same. Two thirds of inventory institutions agree that the data are sufficiently disaggregated. One reason for problems in access to detailed data is the confidentiality. Statistical legislation requires aggregation of statistics to a level that strictly protects respondents' individual data and might, thus, make the statistics unsuitable for inventory compilation. It was commented that in some cases, other institutions have the data, but the cost of acquiring them is high.

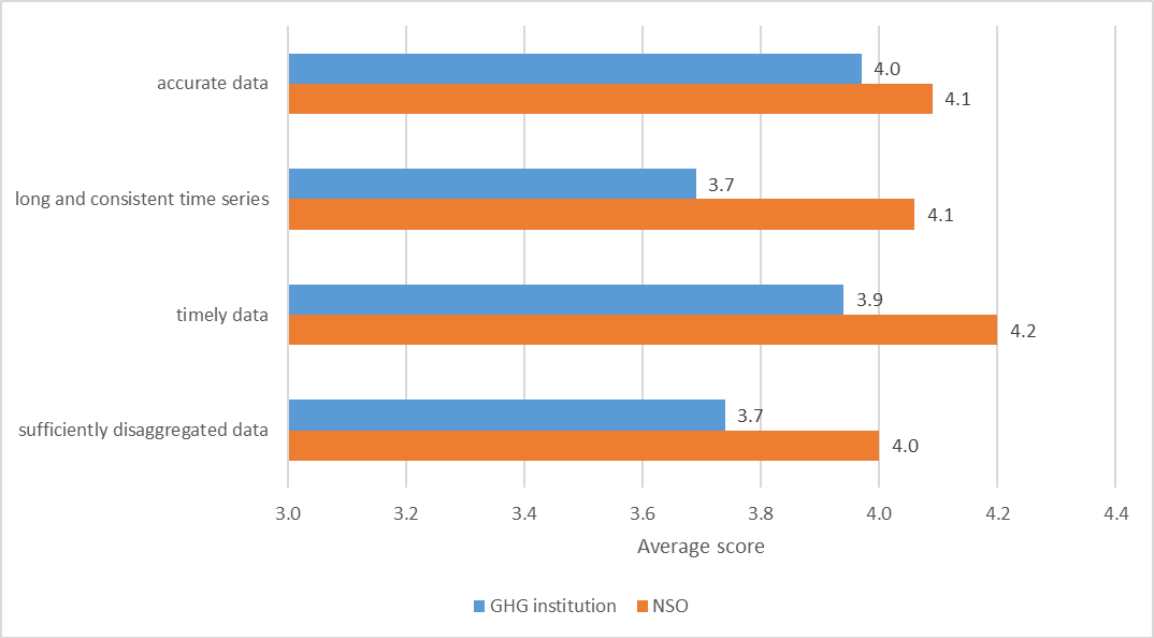

Figure 11 Quality of data for GHG inventories. Responses by NSOs and GHG inventory institutions

NSOs and inventory institutions agree that energy and agriculture statistics match the need of the inventories. More than 80 per cent of inventory institutions and NSOs agree that energy statistics match the needs of the inventory, and for agriculture the shares are 67 and 83 per cent for the agencies, respectively (figure 12).

Most improvement is needed in statistics on land use and forestry, where less than 40 per cent of inventory institutions consider that these statistics match the data needs of inventory compilation. **Important improvements are also needed in industrial and transport statistics of some countries** as more about one fourth of inventory agencies feel that these statistics do not match with the data needs.

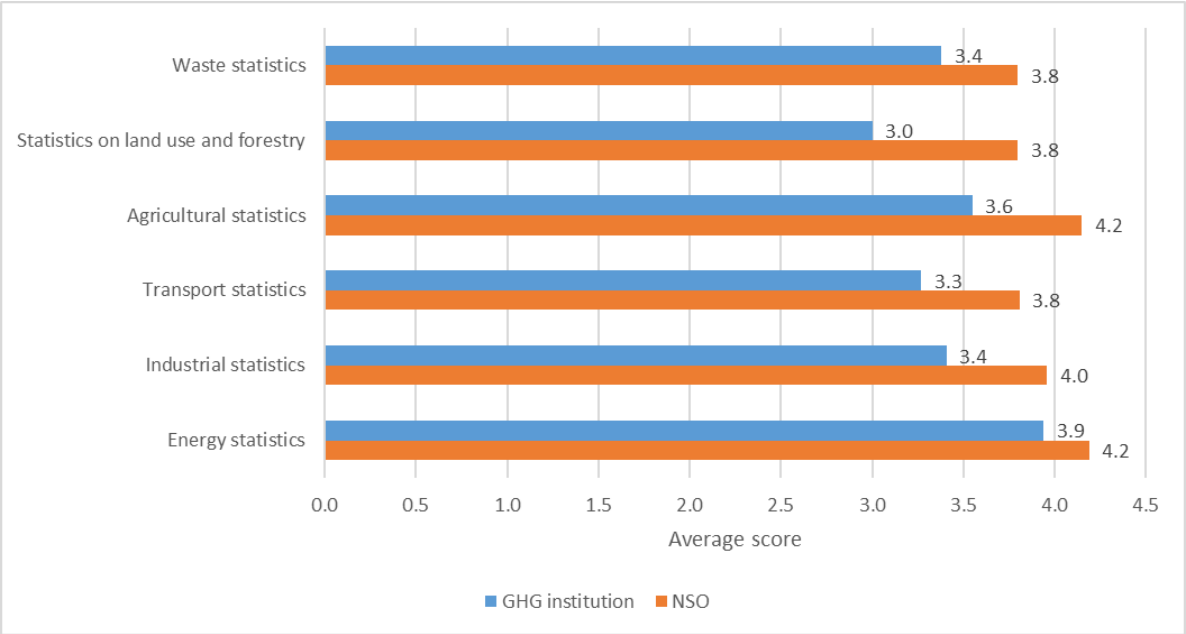

Figure 12 Data sufficiency for inventory compilation within different sectors. Responses by NSOs and GHG inventory institutions

It is clear that the improvement needs of data and statistics for emission inventories vary greatly between countries. Generally, the NSOs are involved in the production of emission inventories in different roles depending on the country, including the provision of statistical data, support to the QA/QC process and being involved in the actual compilation of the inventory. There may, however, be room for improvement regarding allocated resources and general knowledge of inventories in the NSOs. The data availability for inventories is generally good and has improved in the recent years. Closer collaboration of the inventory compilers and NSOs could help address issues with the consistency and length of time series and disaggregation of data. Several inventory institutions mentioned that they would welcome joint work with the NSO on QA/QC of data. While many respondents report about increased collaboration, there is need for more contact, both formal and informal, between the NSOs and inventory compilers.

II. Other climate change-related statistics

NSOs were also asked about the development of other types of climate change-related statistics than data for greenhouse gas emission inventories.

A. Climate change-related statistics produced by NSOs

In the 2011 survey, almost 40 per cent of NSOs produced some climate change-related statistics or indicators. These related most often to water, agriculture, atmosphere, human health and biodiversity. **In the 2016 survey, two thirds of NSOs report having developed new statistics on climate change**. It may still be challenging for NSOs to clearly define what is meant by climate change-related statistics. Therefore, the survey has listed some examples. Identifying data needs related to this wide area of statistics is also mentioned as a major challenge in the comments to the survey.

There is a great variation of subjects covered by NSOs' regular statistics on climate change. **Almost 70 per cent of NSOs regularly compile statistics on CO_2 emissions, GHG emissions and air emission accounts** (average scores from 3.7 to 3.9) (figure 13 and 14).

Energy accounts and statistics on the drivers[1] **of climate change are produced by more than half of the NSOs** that responded to the survey (average score 3.6).

Over 40 per cent of NSOs produce regularly statistics on economic instruments (e.g. carbon taxes, emission permits, environmental subsidies) and **every fourth NSO compiles statistics on biodiversity and ecosystems** (average score of 2.8). Comments indicate that there several countries are currently working to reconcile information from the Land use, land-use change and forestry (LULUCF) sector of the emission inventory with an accounting approach.

The lowest coverage, however, is in statistics on climate change adaptation, including indicators on resilience, risks and vulnerabilities to climate change (average score of 2.2). **Only 7 per cent of NSOs compile statistics on climate change adaptation on a regular basis** (agree or strongly agree). One NSO reported having conducted a consultation to explore the possibilities of introducing a climate change adaptation survey. The consultation indicated that businesses may currently have difficulty providing the information requested in such a survey.

The open comments indicate that the production of data for **emission inventories, compilation of air emission accounts and physical flow accounts of the System of Environmental-Economic Accounts (SEEA) are statistics where major improvements have recently been made**. These are important frameworks to organize and derive climate-related information.

Several NSOs report that they are now developing some or several of the statistics listed in figure 13. Interesting new developments include the quarterly air emissions derived from the environmental accounts, statistics on mitigation expenditure and carbon footprint tools to supplement the emission inventory data.

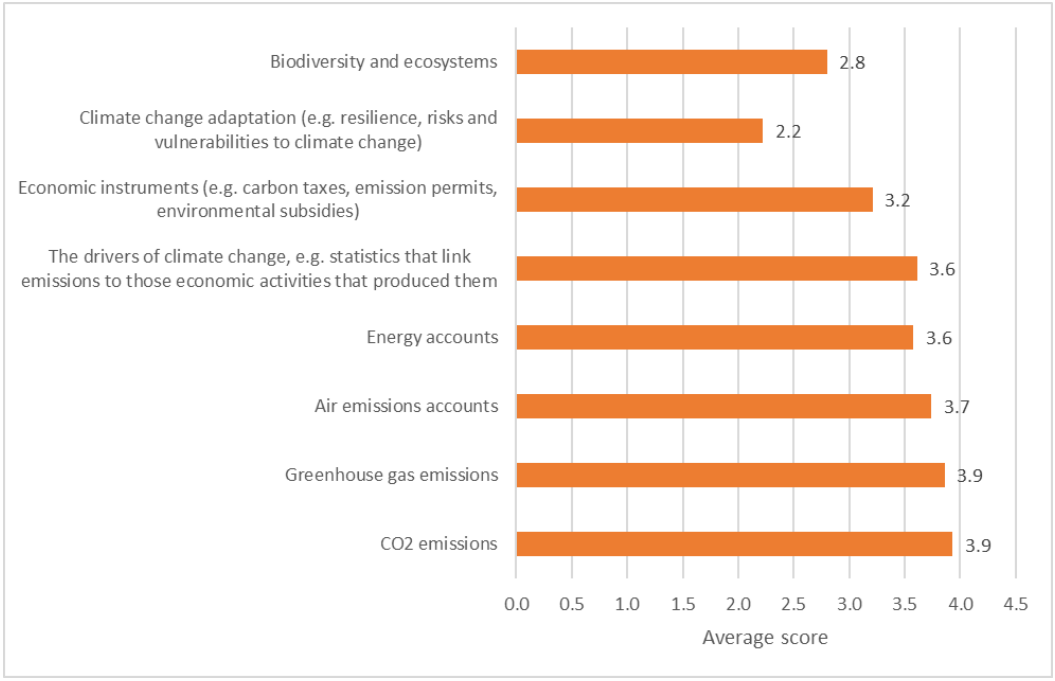

Figure 13 Degree to which NSOs produce regular statistics. Responses by NSOs

[1] This refers to statistics that link emissions to those economic activities that produced them

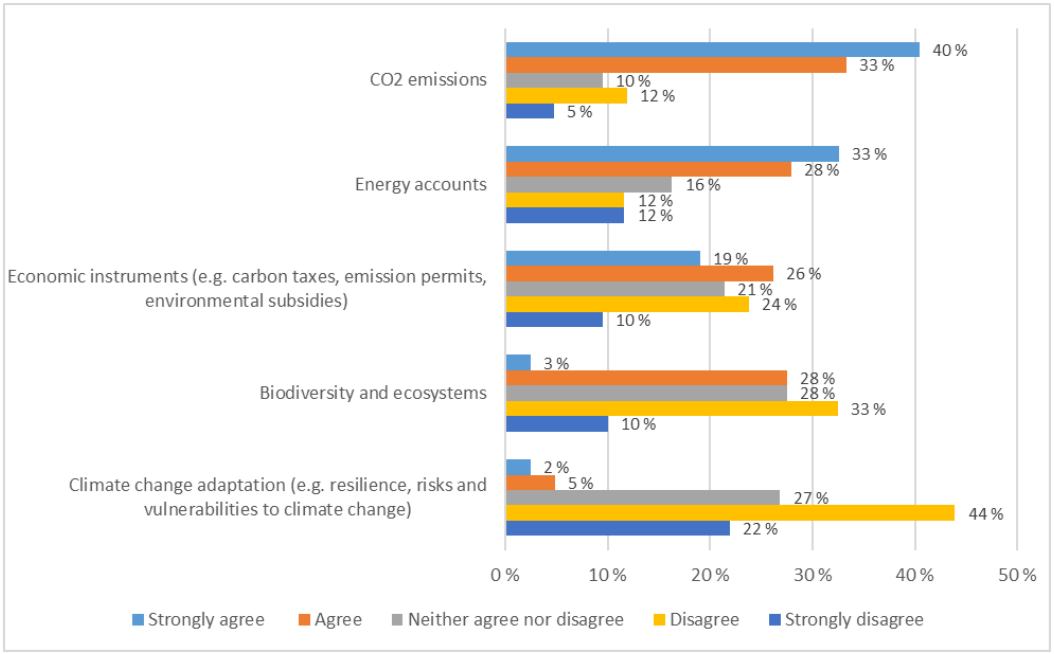

Figure 14 Spread in responses for a selection of types of statistics. Detailed summary of responses by NSOs

B. Access to NSOs' climate change-related statistics

According to the survey, most NSOs discuss data needs with users (average score 4.1) (figure 15). The communication is institutionalized in a wide range of ways. Some examples mentioned include working groups, open consultation procedures, stakeholder events and email exchange.

Almost 60 per cent of NSOs report not having a thematic web page on climate change at its website, but half of NSOs provide access to data produced by others on climate change through their website (figure 16). Many comments indicate that linking to web pages in other institutions is common. One country described the development of a separate area of the NSO web site that presents indicators on climate change, including time series, a brief analysis and graphics as an achievement accomplished during the past few years.

Almost all NSOs (95 per cent) **provide free access to all or most statistical data they have related to climate change**. All NSOs agreed with this statement, and two neither agreed nor disagreed. No NSO disagreed with this statement. NSOs make these data available to an overwhelmingly large extent (average score of 4.4). At the same time, **access to microdata for research to analyse climate change is more limited** due to confidentiality reasons and access procedures. Only 43 per cent of NSOs provide researchers with access to microdata to analyse climate change (average score of 3.4). Confidentiality issues is stated by several as the reason for not disclosing microdata. The other reasons could include the lack of research data sets that are designed for the analysis of climate change and its impact, and lack of data directly related to climate change.

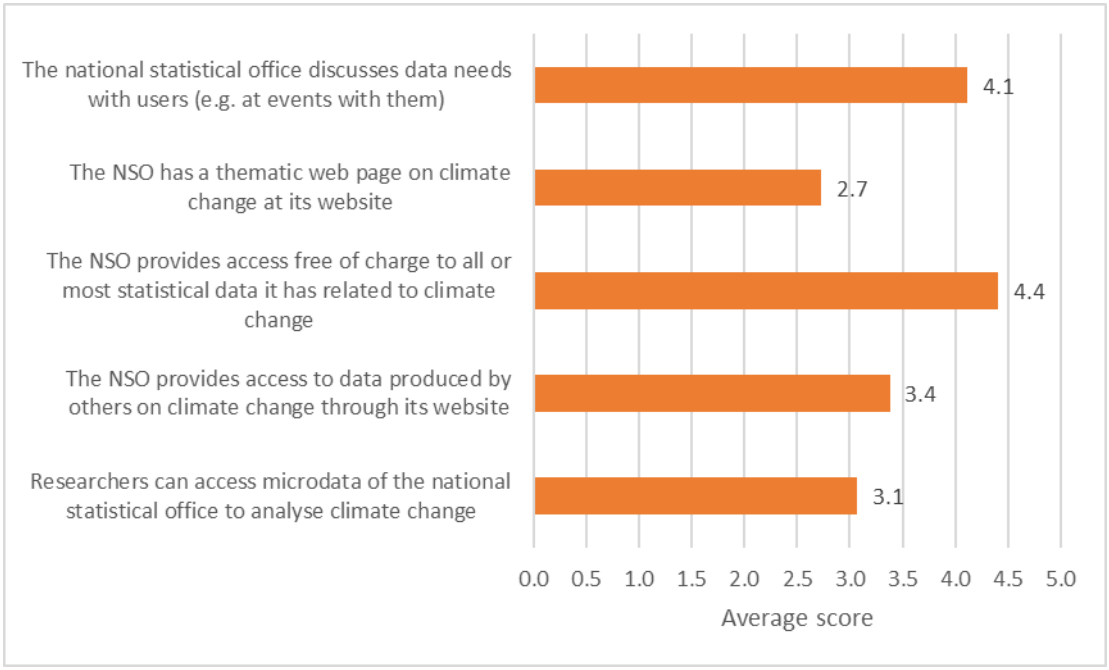

Figure 15 Access to data. Responses by NSOs

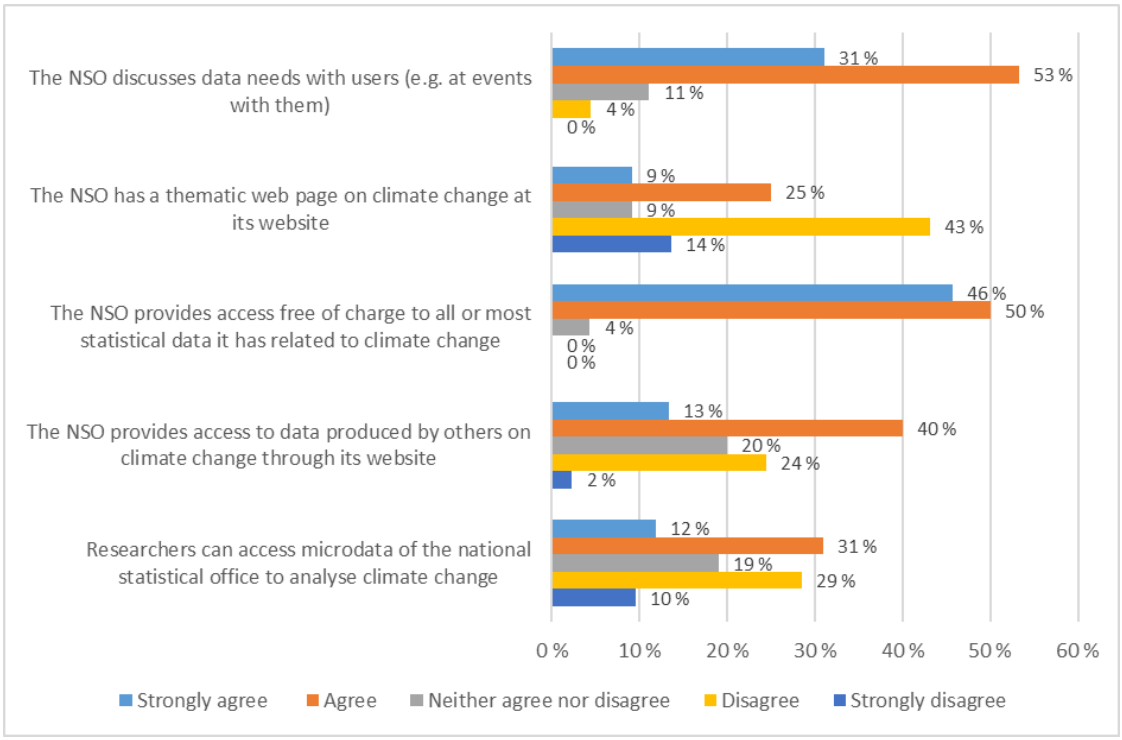

Figure 16 Access to data. Detailed summary of responses by NSOs

C. Usefulness of statistics for climate change analysis

Every fourth NSO considers that it produces statistics on geographical areas with particular relevance for climate change, such as statistics on coastal areas. The provision of these types of statistics is closely linked to the availability of georeferenced data.

Georeferencing is an area where there may be potential for increasing the usefulness of climate change-related statistics. **Only 33 per cent of NSOs widely geo-reference data to support spatial analysis** (average score 2.9) (figure 17 and 18). One comment states that the NSO is not the

appropriate institution in possession of the relevant information e.g. on the increase of sea level, the number and the regional distribution of extreme weather events or the acidification of the oceans. The usefulness of statistics could be improved, but there may be legal issues which must be considered especially in terms of georeferencing and matching across statistics. One NSO states that much of the available climate data is georeferenced, as is the NSO's census data, but that more work on georeferencing of other surveys and data sources should be done in areas that could contribute to climate change analysis.

Over 40 per cent of NSOs agree that researchers can easily link data and use data across domains, also for climate analysis. 12 per cent of NSOs disagree with this statement. **Two thirds of NSOs currently develop tools to improve data matching across statistics** (average score of 3.7), but only a few concrete examples are given in the comments. One example mentioned is an integrated table where one can find, by NACE activities, some helpful statistics, such as energy consumption (by type of products), air emissions (by type of pollutant), environmental taxes (by type of taxes) and economic aggregates (production, added value, export, and employment).

Almost 40 per cent of NSOs have reviewed its data collections to see how they fill climate data needs. However, every fourth NSO has not done that. The United Nations Environment Statistics Self-Assessment Tool (ESSAT) is mentioned as a useful tool that can help NSO identify data gaps.

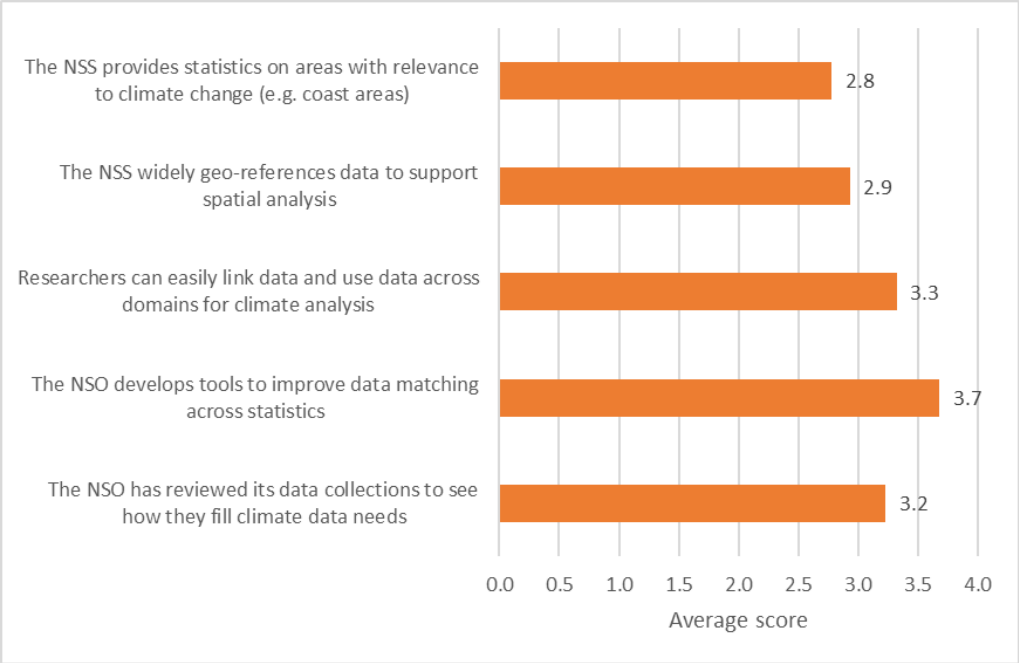

Figure 17 Usefulness of data. Responses by NSOs

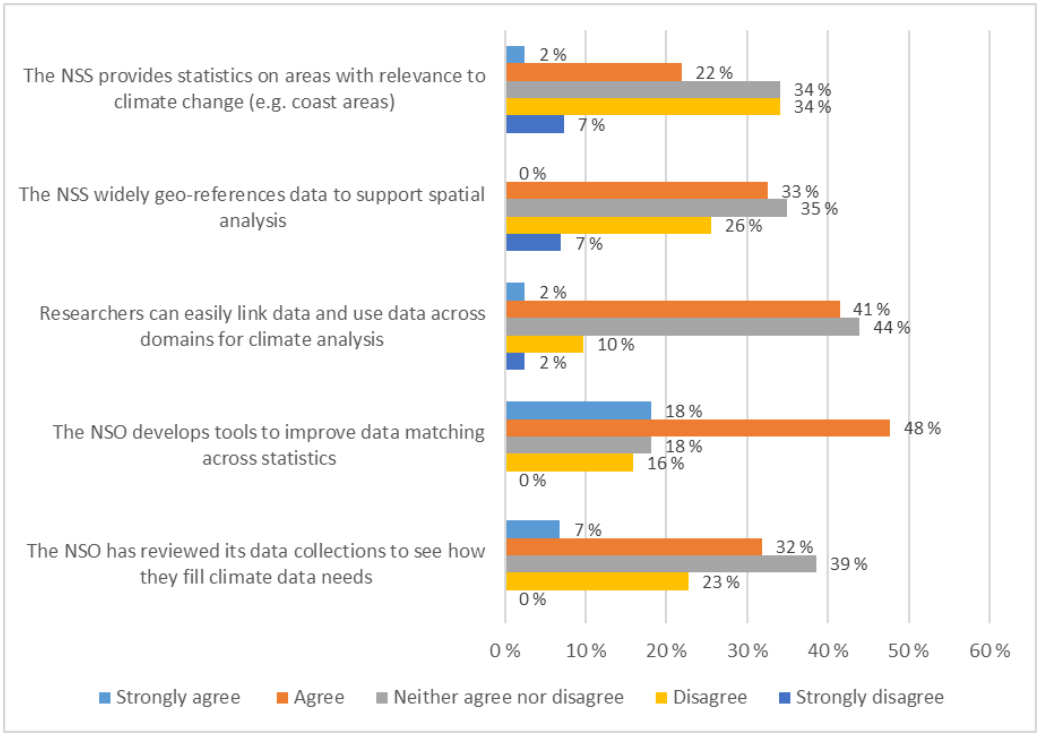

Figure 18 Usefulness of statistics for climate change analysis. Detailed summary of responses by NSOs

III. Statistical infrastructure, skills and development needs

A. Building knowledge for climate change-related statistics

Two thirds of NSOs report having staff members with good knowledge of natural sciences relevant for climate change-related statistics (average score of 3.6) (figure 19). Furthermore, **more than 70 per cent of NSOs report having the skills to provide geo-referenced data and spatial statistics** (average score of 3.8). Although the human resources might be available, the availability of sufficient tools, resources and IT capacity is mentioned as a challenge by some NSOs.

More than half of NSOs have assigned the responsibility of the responsibility of climate change-related statistics to a person or a group. In the open comments, NSOs note that resources are an impediment as there has been a substantial increase in requirements on environmental statistics, such as SEEA and climate change, as well as basic environment statistics. The situation has improved in the recent years, and some NSOs note that they currently have sufficient resources earmarked for environmental and climate change-related statistics. Many NSOs have observed the increasing need for coordination of work among various players active in producing data or statistics related to climate change.

About 90 per cent of NSOs are involved in the compilation of energy statistics. While 45 per cent of NSOs are responsible for energy statistics in the country, another 45 per cent contributes to the compilation of energy statistics. In the open comments, several NSOs highlighted the important relation of energy statistics, energy balances and emission inventories.

Partnerships are an important tool for NSOs in developing climate change-related statistics. **Almost 90 per cent of NSOs work together with partners who have good knowledge of natural sciences and/or spatial statistics** (average score of 4.0).

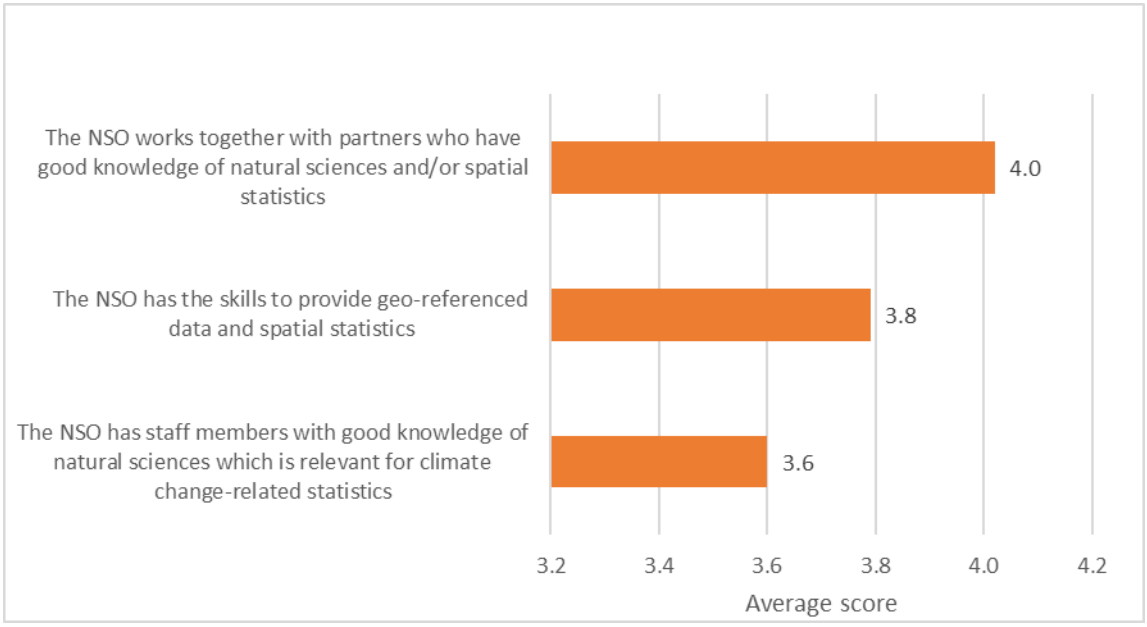

Figure 19 Building knowledge. Responses by NSOs

B. Achievements and plans for future work

Comparisons between the surveys carried out in 2011 and 2016 show that **there are substantial improvements in the involvement of NSOs in the emission inventory production, and that the coherence and disaggregation of data is significantly improved.** The results also show that the number of NSOs reporting that they produce some climate change-related statistics or indicators has significantly increased.

Collaboration with other institutions is mentioned by many NSOs as an area where progress has been made over the past few years. Collaboration takes many forms and the recent changes include revised legislation to enable cooperation, establishment of coordinating bodies and working groups and increased informal contacts between experts.

The majority of NSOs have developed new statistics with relevance to climate change over the last few years. Particular progress has been achieved in the compilation of data for inventories, air emissions accounts and physical flow accounts. Nowadays a larger number of NSOs provides disaggregated statistical data for inventory purposes.

Some resources are now dedicated to the development of official statistics for climate change analysis and policy. **An increasing number of NSOs have a dedicated area of the NSO web site for presenting statistics and indicators on climate change**.

NSOs have planned many activities for future development of climate change-related statistics, including the improvement of energy statistics, ecosystem accounts, land accounts, forest accounts, material flow accounts, mitigation and adaptation expenditure accounts, disaster statistics, just to mention a few. Many are looking forward to guidance on the key indicators of climate change in order to start their production.

Some NSOs report on plans to enable richer analysis of statistical data by developing the collection and handling of data so as to enhance data integration, documentation and the coverage of new themes. Increased use of geographic information is an important development path. **Several NSOs are making concrete plans to extend or support analysis of inventory data with statistics**, for

instance one NSO plans to develop guidelines to quantify the volume of greenhouse gases absorption.

NSOs recognize the increasing demand for information for national and international policy making and various global agendas, such as the SDGs, the Sendai Framework for disaster risk reduction and many global statistical frameworks, such as SEEA, the Framework for the Development of Environment Statistics (FDES) and the CES Recommendations on Climate Change-related Statistics. **NSOs are looking at implementing the best practices of other countries** into their daily routine to be able to respond to the increasing demand.

At the moment, **matching statistical production with data needs seem to be a major concern for NSOs.** This requires constant balancing, and effective cooperation with the relevant institutions is seen as the only way forward. It is also worth noting that several NSOs report that they have no resources to develop climate change-related statistics in the next few years.

C. Support from international organizations

About 40 per cent of NSOs have international contacts with whom best practices regarding statistical data for emission inventories are discussed and exchanged (figure 20). This indicates that the Expert Forum for producers and users of climate change-related statistics could focus more on the discussion and exchange of best practices of NSOs in support of emission inventories. While participation in the Expert Forum and UNECE expert groups in this area has increased, the purpose and benefits of the Expert Forum could be communicated more clearly to the NSOs.

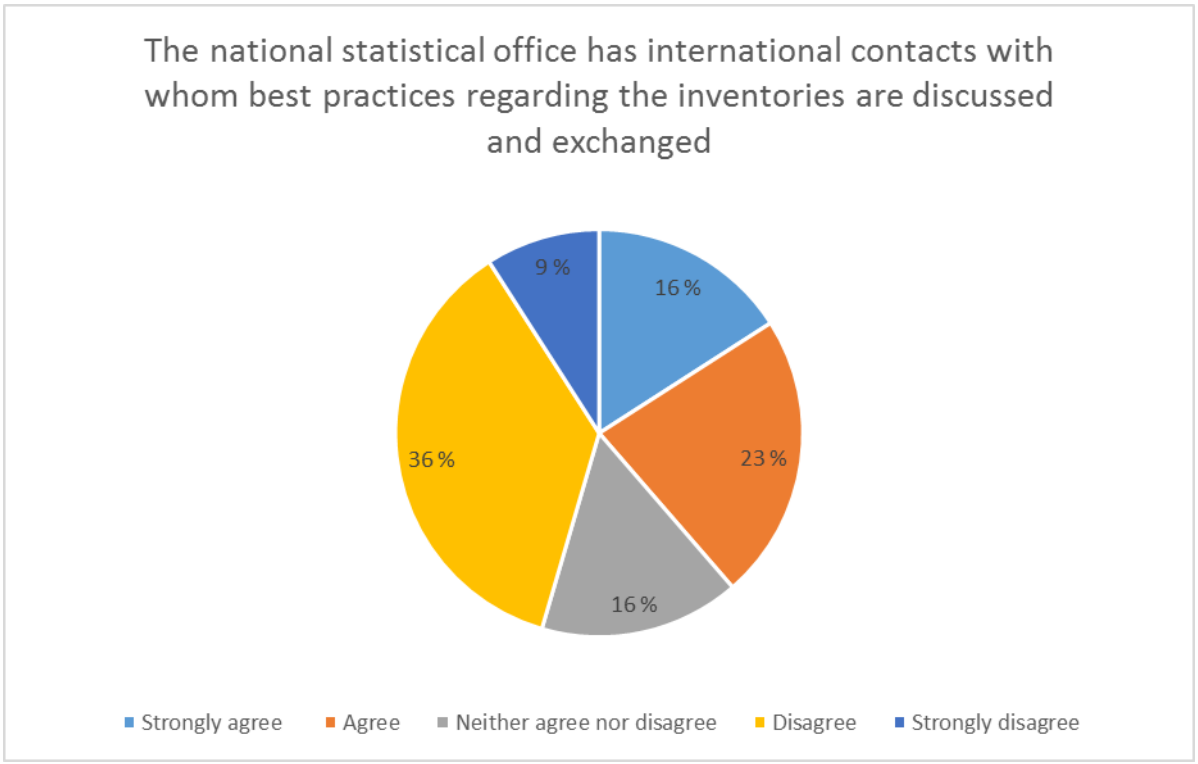

Figure 20 Availability of international contacts

NSOs believe that international work would best support national work on climate change-related statistics in two areas: development of guidelines and facilitation of exchange among countries.

I. Development of guidelines and definitions:

- The development of SEEA methodologies and guidelines in measuring climate-relevant issues in relation to the:
    - SEEA-CF methodology
    - SEEA-EEA (experimental ecosystem accounting) guidelines
    - SEEA Agriculture
- Statisticians should contribute to the refinements of the IPCC guidelines that would support improvements to the inventory.
- Translation of the "Recommendations on Climate Change-related Statistics" into Russian would help their implementation in many countries.
- Providing a clear definition and a list of climate change- related indicators.
- Developing a finalized indicator list with consistent methodology and manual with practical instructions. It would be helpful to continue this work by defining operational indicators after the set of headline indicators has been finalized.
- Developing concrete recommendations on how to improve data collections and current statistics for the purposes of climate change analysis and policy.
- Developing practical guidance for the measurement of adaptability and vulnerability to climate change.
- Making data on fossil fuels subsidies a regular part of climate change-related statistics by setting up common reference values.
- Building climate change accounts using existing statistical accounting frameworks and other information sources on mitigation, adaptation, assessment of economic consequences of climate change etc.

II. Facilitation of the exchange of best practices and experience among countries:

- Arranging conferences, working groups and task forces with specific and well-defined tasks. The UNECE Expert Forum was mentioned as a good means to bring together different organizations and experts working on climate change-related statistics. The UNSD expert groups on environment statistics and SEEA were also seen as essential for collaboration.
- Organizing training courses on:
    - environment-related geographic information systems
    - the methodology of inventory compilation for NSOs
- Sharing best practices in climate change-related statistics and supporting the inventory compilation.
- Supporting countries in setting up a web portal on climate change data and statistics.
- Reviewing the current situations nationally by using nationally prepared road maps and international expert assessments.

Financial support was also mentioned as an area where international support can enhance national work on climate change-related statistics. Supporting grants from Eurostat was mentioned specifically.

In addition, harmonization of data reporting requirements of different bodies addressing similar issues was highlighted as an area where the international community could play a vital role. **The problem of different classifications used for official statistics (ISIC) and the inventories persists and should be addressed**, if possible. This poses challenges when industrial statistics are used as input data to GHG emission calculations. Better collaboration among international organizations when

deciding about classifications, would save resources and simplify the work of NSOs and inventory agencies.

To summarize, the results from the surveys indicate that there is a lot of work going on in the NSOs aiming at improving official statistics for climate change analysis and policy. Many NSOs also have concrete plans for further improvements**. There is high demand for increased support from international organizations when it comes to the development of guidelines and streamlined methodologies, as well as facilitating exchange of experience among countries.**