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**Economic Commission for Europe****Conference of European Statisticians****Sixty-fifth plenary session**

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Item 7 (c) of the provisional agenda

**Reports, guidelines and recommendations prepared under the umbrella of the Conference****Set of key climate change-related indicators****Addendum****Report of the Task Force on the Set of Key Climate Change-related Statistics using the System of Environmental-Economic Accounting****Note by the secretariat<sup>1</sup>***Summary*

This document summarizes the comments by members of the Conference of European Statisticians on the Report of the Task Force on a Set of Core Climate Change-related Statistics using the System of Environmental-Economic Accounting. The secretariat carried out an electronic consultation in February - March 2017.

The initial set of indicators is subject to further refinements, taking into consideration the outcomes of this electronic consultation and the results of pilot testing the indicators by sixteen volunteering countries.

In view of the support received, the Conference will be invited to endorse the Report of the Task Force on the initial Set of Core Climate Change-related Statistics using the System of Environmental-Economic Accounting. The Conference is asked to extend the mandate of the Task Force to further review and refine the initial indicator set based on the outcome of the pilot testing. The results will be reported back to the Conference.

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<sup>1</sup> The present document was submitted late due to resources constraints.

## I. Introduction

1. The present document summarizes the comments by members of the Conference of European Statisticians (CES) on the Report of the Task Force on a set of core climate change-related statistics using the System of Environmental-Economic Accounting. The report was sent for electronic consultation in February - March 2017 to all countries and organizations who participate in the work of CES.

2. The document proposes an initial set of 39 core climate change-related indicators following the scope of the *CES Recommendations on Climate Change-related Statistics*, endorsed by CES in 2014. This initial set of indicators is subject to further review and refinements, taking into consideration feedback received from the electronic consultation, a pilot-testing by 16 voluntary countries, and further methodological developments in the context of SDGs and the Sendai Framework indicators.

## II. Summary

3. In the electronic consultation, responses were received from the following 38 countries and 2 international organisations: Albania, Andorra, Armenia, Austria, Belarus, Belgium, Bosnia and Herzegovina, Canada, Colombia, Croatia, Czechia, Denmark, Finland, France, Georgia, Germany, Hungary, Israel, Italy, Latvia, Lithuania, Malta, Mexico, Mongolia, Montenegro, Netherlands, Poland, Portugal, Romania, Russian Federation, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom, Ukraine, United States (two replies received: USDA National Agricultural Statistics Service and Bureau of Economic Analysis), Eurasian Economic Commission (EEC) and Eurostat.

4. Out of the 41 respondents, 36 expressed explicitly that they endorse the report, subject to incorporation of the comments made in the consultation. Four respondents did not reply to this question.

5. Germany was concerned about the lack of common methodologies and available data for a number of the indicators (some other countries also raised this point but agreed to endorse the report). The Task Force acknowledges the need to develop methodologies and improve data availability for a number of indicators. However, it decided to keep such indicators in the set because of their high policy relevance, and to encourage countries to initiate data production and to develop methodologies and data sources. The follow-up work presented in chapter V of the report includes exploring additional data sources and identification of appropriate methodologies, based on international developments (such as SEEA, SDGs, Sendai framework indicators).

6. The following 16 countries volunteered to pilot-test the set of indicators: Armenia, Belarus, Colombia, Finland, Georgia, Hungary, Israel, Latvia, Lithuania, Mexico, Mongolia, Poland, Russian Federation, Switzerland, Turkey and Ukraine. The Food and Agriculture Organization of the United Nations (FAO) also volunteered to participate in the pilot-testing.

7. The comments received through the electronic consultation can be grouped into substantive issues which are to be considered in the follow-up work, and other issues which help to improve the understanding and clarity of the report. Substantive issues to be considered in the proposed follow-up work include:

- (a) Identification of additional data sources, including the further identification of indicators which are already produced or will be produced in the near future by international organisations;

- (b) Reviewing whether the set of core climate change indicators is well balanced concerning the main climate change-related phenomena, and reviewing the grouping of the indicators according to sub-areas;
  - (c) Further work on indicators in some areas, such as adaptation to climate change;
  - (d) Identifying a reduced set of “key” indicators out of the set of core indicators;
  - (e) Improving the methodological sheets;
8. The comments and relevant actions by the Task Force are presented in more detail in sections III-VII below.

### **III. Methodology (section IV of the report)**

9. Most respondents praised the chosen methodology for the selection of the set of indicators. Belgium called the methodology excellent, and Colombia appreciated that the document consistently refers to the System of Environmental-Economic Accounting (SEEA) and the United Nations Framework for the Development of Environment Statistics (UN-FDES). United Kingdom considered the chosen methodology as sound, but might have preferred a more pragmatic approach taking into account which indicators were widely available.
10. Turkey acknowledged that the set of indicators covers well the most relevant climate change phenomena but data availability might be a problem for some of the indicators.
11. Hungary considered the number of core indicators as ideal and manageable, and agreed with the recommendation to use sectorial breakdowns only for operational and explanatory indicators. Hungary and other respondents stressed the importance of further work to clarify methodological issues.
12. The United States Bureau of Economic Analysis (US BEA) suggested to include more details describing the conceptual framework in which the indicators can tell a meaningful story. Belgium and US BEA also mentioned potential problems with indicators using the GDP as denominator, as a changing GDP may have an impact on the indicator which is not necessarily climate related, and recommended to consider other ways for scaling these indicators.
13. Belgium proposed to include some indicators produced by international organisations.
14. Regarding the dual measurement (territorial or residential principle), Finland considered the wording in paragraph 60 (d) too strong. Slovenia mentioned that in the methodological description it should be determined which principle to use. Portugal suggested to explain the differences between residential and territorial principles to the user.
15. France emphasized the importance of being consistent with the methodologies for SDG indicators. Germany expressed concern with the number of indicators in the set that belong to tier II and tier III.
16. Spain considered some of the proposed indicators ambitious, as more methodological development is needed and the underlying environmental accounts are not yet compiled in many countries.
17. Switzerland proposed including the list of policy questions in the report.

**Action by the Task Force**

18. The Task Force will review the set of indicators after the pilot testing and taking into account the comments made in the electronic consultation.
19. The wording of paragraph 60 (d) will be revised. Further minor editorial changes will be made to improve the clarity of the chapter.
20. The list of policy questions will be added as an annex to the report.

**IV. Set of core climate change-related statistics and indicators  
(section IV of the report)**

21. Croatia, Hungary, Lithuania and a number of other countries agreed with the output of work of the Task Force. Bosnia and Herzegovina and Eurostat stressed the importance of clearly indicating that the set of indicators will be developed further.
22. Croatia and Slovenia acknowledged that NSOs are not the producers of many of the indicators, therefore an effective cooperation between NSOs and other agencies is needed.
23. Belgium proposed to check the resulting list of indicators for multiple correlations, and to look at absolute reduction of emissions both from the producer and the consumer point of view.
24. Finland considered the set of indicators somewhat biased. For example the main weight on economic impacts is given to extreme events and disasters. The importance of impact indicators differs based on national circumstances. Switzerland considered the set slightly unbalanced towards energy and greenhouse gas emissions while important topics such as waste or food are missing. Furthermore, Switzerland suggested to consider indicators on the perception of climate change by the population as well as behavioural aspects.
25. Finland also suggests to keep in the set only indicators, which were identified as mature in the survey on data availability.
26. France proposed to mention for each indicator the reasons for their selection. France also questioned the relevance of indicators which change very slowly (e.g. carbon in soils).
27. Portugal, Slovenia and United Kingdom were of the opinion that the set may be too big. UK suggested the sector level indicators which are currently in the list of core indicators (e.g. GHG emissions from land use, etc.) to become operational or contextual indicators, and to select from the list of core indicators a few which are “most key”.
28. Sweden suggested the following editorial corrections:
  - (a) Paragraph 83: activity data of industries and households are lacking;
  - (b) Paragraph 84: Review the statement whether inventories are usually done by NSOs;
  - (c) Paragraph 86: The text should be more specific on which SEEA accounts should be in place.
29. Switzerland, referring to table 1, was of the opinion that the combinations “Water resources” and “Mitigation” as well as “Energy resources” and “Adaptation” are at least imaginable. Therefore, both cells should remain white.

**Action by the Task Force**

30. To make it visible that the process of refining the set of indicators and methodological work will be continued, the set of indicators will be called “initial set of core climate change-related indicators” throughout the document.
31. The reasons for selection of each indicator will be added.
32. The wording of paragraphs 83, 84 and 86 will be revised, and the clarity of the chapter will be improved.
33. In the follow-up work, the Task Force will consider the number of indicators and how balanced the set is in representing the most relevant climate change-related phenomena. The Task Force will also consider the selection of a subset of “key climate change-related indicators” and identify operational and contextual indicators.

**V. Proposed follow-up work (section V of the report)**

34. There was general consensus on the proposals for further work suggested by the Task Force, in particular on the pilot testing and further methodological work.
35. Belgium suggested asking selected international organisations to produce indicators on a global level or for groups of countries, in addition to pilot testing at country level.
36. France pointed out that it may be difficult to test all the indicators, as for several of them no agreed methodology exists. Israel suggested that countries test different indicators, as not all of them are relevant to all countries. Netherlands recommended that countries with both more advanced and less advanced statistical systems undertake the pilot testing. United Kingdom asked for more guidance how the pilot-testing will be carried out in practice.
37. Colombia stressed the importance of unifying concepts and methodologies for SEEA-based indicators among different institutions.
38. Germany stressed that a strong focus should be given on the identification of appropriate methodologies for tier II and tier III indicators. Hungary considered this a challenging task.
39. Slovenia and Eurostat suggested to include a timetable for the follow-up work. Sweden proposed to group the follow-up work into a) capacity building of established statistics, b) development of indicators being close to mature, and c) special studies.
40. Switzerland asked for more clarification on the mentioned “Support to other processes” in paragraph 94.

**Action by the Task Force**

41. The Conference will be invited to extend the mandate of the Task Force to:
- (a) Review the proposed indicators and their methodologies based on the outcomes of the pilot testing, and to take into account the comments received through the electronic consultation (see Annex);
  - (b) Further develop methodologies for tier III indicators, and identify possible data sources for tier II indicators, taking into account the developments within the context of SDG indicators, Sendai Framework indicators, and the SEEA research agenda;
  - (c) Identify alternative or additional indicators, if appropriate.

42. The Task Force will prepare a work plan for the follow up work to indicate:
- (d) Timing and objectives of the pilot testing;
  - (e) Tasks to be carried out by the Task Force with deadlines;
  - (f) Recommended tasks for the SEEA research agenda;
  - (g) Input needed from other international processes (e.g. methodological developments in the context of SDG indicators and Sendai Framework indicators);
  - (h) Other actions needed to address the proposed follow-up work.
43. Minor editorial changes will be done to improve the clarity of the chapter, e.g. to clarify the meaning of “Support to other processes” in paragraph 94.

## **VI. Other general comments**

44. Colombia stressed the importance of involving other national government institutions in the production of climate change-related indicators and environmental-economic accounts.
45. Croatia emphasised the need to have sufficient resources to develop a systematic approach for climate change-related statistics in NSO. Sweden proposed to identify the kinds of competencies needed to produce the set of indicators.
46. Finland considered important that the work is closely connected to the Sendai Framework on Disaster Risk Reduction and other indicator frameworks. Finland also suggested to use adaptation process indicators currently collected by the European Union as a starting point for further work on adaptation indicators.
47. Germany pointed out that the set of key climate change-related statistics is in line with the “German Strategy for Adaptation to Climate Change” (DAS) as well as with the Adaptation Action Plan of the German Strategy for Adaptation to Climate Change” (APA). Future work on the implementation of the set of key climate change-related statistics and indicators could be linked to the work on DAS. The German Umweltbundesamt (Environment Agency) supports the further development of the climate change-related statistics in the present form.
48. Russian Federation, Portugal and some other countries suggested to improve the methodological sheets and to describe the calculation methods in more detail, e.g., introduce specific formulas for indicator calculation instead of referring to third-party documents.

### **Action by the Task Force**

49. To address data availability concerns for some of the indicators the Task Force will continue to identify possible data sources, and draft recommendations for implementation and capacity building. Some indicators for which data availability is a general problem may be replaced by more available ones as a result of the pilot testing.
50. The Task Force will improve the metadata sheets for the indicators.

## **VII Comments on indicators**

51. Many respondents emphasized the need for further methodological development for a number of indicators. The calculation methodologies should be fully consistent with corresponding SDG and Sendai Framework indicators. Portugal, amongst others, stressed

that the residence principle versus territory principle should be considered in detail in the calculation options. Some respondents also mentioned the importance to determine the frequency of data updating for each indicator.

52. Portugal highlighted the links of the indicators to the SDG targets and indicators. This information has been reflected in the metadata sheets.

53. The detailed comments on each indicator are presented in the Annex.

#### **Action by the Task Force**

54. The Task Force will take into account the comments when refining the set of indicators and further developing the underlying methodologies.

### **VIII. Proposal to the Conference**

55. The Conference is invited to:

(a) Endorse the *Report of the Task Force on an Initial Set of Core Climate Change-related Statistics and Indicators using the System of Environmental-Economic Accounting*, subject to incorporation of the following:

- i. Revising the wording in paragraphs 60 (d), 83, 84, 86 and 94 to take into consideration the related comments of Finland, Sweden and Switzerland;
- ii. Minor editorial changes to improve the clarity of the report;
- iii. Including the list of policy questions in an annex;
- iv. Adding information on the reasons for selection of each individual indicator;

(b) Extend the mandate of the Task Force to review and further refine the initial set of core climate-change related indicators based on the outcomes of the pilot testing, and undertake further work as explained in paragraphs 41-42.

## **Annex**

### **Comments on individual indicators**

#### **1. Total primary energy supply (TPES)**

- France considered the total primary energy consumption as more relevant;
- Spain questioned why bunkers are subtracted completely, as part of this data could be included in exports.

#### **2. Share of fossil fuels in total primary energy supply**

- France considered the fossil fuels in total primary energy consumption as more relevant;

#### **3. Losses of land covered by (semi-) natural vegetation**

- Bosnia and Herzegovina had doubts on the usefulness of the indicator, as the updating of data from remote sensing and satellite imagery is not very frequent.
- Finland asked for more information on the purpose of this indicator.
- France noted that European countries can use the CORINE land cover database to calculate this indicator.

#### **4. Total support for fossil fuels / GDP**

- Germany was of the opinion that subsidies are not defined;
- Sweden considered the indicator as very important driver, but still needs a method to allow international comparisons;
- US BEA was of the opinion that scaling by GDP may lead to ambiguity.

#### **5. Total energy intensity of production activities**

- Belgium commented that the denominator should be only the industry value added;
- Germany mentioned that the reference value is not clear (price-adjusted or not);

#### **6. CO2 intensity of energy for the economy**

- Latvia asked for clarification in the methodology whether the energy products include biofuels and biomass. Latvia also suggests to change the unit of measurement to GG CO<sub>2</sub>/TJ to be consistent with other indicators of the set.
- Portugal mentioned that the indicator is indirectly linked to SDG target 7.3 (By 2030, double the global rate of improvement in energy efficiency).

## **7. Emission intensity of agricultural commodities**

- Belarus requested some methodological clarifications regarding the used classification.
- Austria proposed to change the name to “Greenhouse gas emission intensity of agricultural commodities”. Also the Russian Federation proposed a different name: “The intensity of CO2 emissions as a result of agricultural activities”.
- Belgium suggested to express the indicator per ha. The Russian Federation proposed to change the unit of measurement (denominator) to “unit of agricultural output in national currency”.
- Denmark had concerns regarding the data availability, as the indicator, to be meaningful, requires a breakdown of the agricultural activities according to products in both air emissions accounts and national accounts.
- Germany acknowledged that the indicator is being produced by FAO, but that it is highly aggregated and data are incomplete. The product basket used for agricultural commodities is unclear.
- Russian Federation and Belarus commented that the methodology requires improvement in terms of clarifying the boundaries of indicator calculation and the used classifications (by IPCC and ISIC). E.g. according to the IPCC classification “agriculture” does not include land use, land use change and forestry (LULUCF).

## **8. Energy consumption by household / capita**

- No comments

## **9. Total greenhouse gas (GHG) emissions**

- Belarus asked for a clarification whether LULUCF is included in this indicator;
- Russian Federation considered as reasonable to exclude gases with indirect greenhouse gas effects from the calculation methodology, as these gases are also not included in the IPCC methodology to calculate the total greenhouse gas emissions.

## **10. CO2 emissions from fuel combustion**

- Austria and the United Kingdom suggested including all GHG emissions from fuel combustion (to be in line with indicators no. 9 and 10-14, and to be more comprehensive);
- Germany pointed out that estimates of the International Energy Agency can differ from those of UNFCCC;
- Latvia raised the question why the measurement unit is Mt instead of GG (as for other indicators);
- Sweden commented that it is not clear why this indicator was chosen.

## **11. GHG emissions from land use**

- Latvia asked for clarification in the methodology sheet about the unit of measurement, as the current description is difficult to understand;
- Russian Federation saw it as necessary to remove the link to SEEA 3.6.3, as the emission account is based on ISIC, but not on IPCC. The Russian Federation also suggested to exclude CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O in the units of measurement;
- Sweden expressed its support for this indicator;
- United Kingdom requested more clarification why the description was changed from LULUCF to land use.

## **12. Total GHG emissions of production activities**

- Russian Federation considered necessary to remove the link to SEEA 3.6.3 due to the absence of GHG emissions in physical terms in the emission accounts;
- United Kingdom suggested to map this indicator with the GHG inventory activity codes, then an alternative source would be available.

## **13. GHG emission intensity of production activities**

- Belgium emphasized the importance to use the non-service GDP as denominator;
- Russian Federation proposed to remove the link to SEEA 3.6.3 due to the absence of GHG emissions in physical terms in the emission accounts;
- Spain suggested to clarify that the value added should be measured in volume terms.

## **14. Direct GHG emissions from households**

- Russian Federation proposed to change the unit of measurement to thousand tonnes of CO<sub>2</sub>-eq. / year or million tonnes of CO<sub>2</sub>-eq. / year, and to remove the link to SEEA 3.6.3 due to the absence of GHG emissions in physical terms in the emission accounts.

## **15. Carbon footprint**

- Austria proposed to take into account all GHG emissions to show the carbon footprint associated with domestic final use;
- Belgium suggested to calculate the carbon footprint per capita and per GDP;
- Finland commented that the carbon footprint of food is already estimated, and that footprint indicators are very complex to calculate. The regular availability of these indicators may be a problem, as they usually are not calculated by statistical offices;
- France informed about the national methodology to calculate the carbon footprint, and invited the UNECE secretariat to consider this in the follow-up work: <http://www.statistiques.developpement-durable.gouv.fr/publications/p/2543/1178/lempreinte-carbone-note-prealable-laboration-rapport.html>;
- Sweden commented that this would require an input-output calculation;

- United Kingdom found it unclear that the unit of measurement is thousand tonnes of CO<sub>2</sub> (equivalent) when other measures related to GHG emissions are labelled Gg CO<sub>2</sub>.

## **16. Annual average surface temperature**

- Sweden mentioned the importance of this indicator and the need for a good cooperation of NSOs with the meteorological institutes.

## **17. Percentage of land area suffering from unusual wet or dry conditions (Standard Precipitation Index)**

- For France this is a tier III indicator;
- Israel was of the opinion that this is only relevant for rain-fed agricultural areas, but not for irrigated land and desert areas;
- Sweden stressed the relevance of the indicator, and the importance of good cooperation of NSOs with the meteorological institutes.

## **18. Level of water stress: freshwater withdrawal as a proportion of available freshwater resources**

- Belgium suggested to exclude cooling water from the calculation;
- France and Bosnia and Herzegovina mentioned difficulties regarding the calculation of inflow and outflow of groundwaters;
- Russian Federation asked for clarification of the “environmental water requirements”.

## **19. Cumulative number of alien species**

- Belgium proposed to calculate this indicator as percentage of indigenous species, per main groups;
- Bosnia and Herzegovina commented that the number of invasive alien species must be coupled with the exact names of species and subspecies in order to try to estimate the level of possible impact;
- Finland mentioned that the indicator is useful if it refers to invasive alien species. A regional indicator could be more useful than an indicator at national level only;
- France did not see an annual frequency relevant.
- Germany considered invasive alien species as a lower threat factor for biodiversity in Germany compared to other regions in the world. Germany mentioned problems in the generation of this information, and that existing national databases (such as DAISIE, NOBANIS) are extremely error-prone. Currently the Bundesamt for Naturschutz (BfN) is collecting relevant data, and better information may be available in the future.
- Israel commented that an indicator on the number of species is not sufficient, as their impact can vary (e.g. some local “bursting” species could be more harmful).

**20. Carbon stock in soil**

- Finland mentioned that annual changes in the stock are very small related to the total stock, and the estimations on the total stock are often very rough;
- France questioned the relevance of the indicator and does not see an annual frequency as useful;
- Germany informed that data for producing this indicator on an annual basis is not available. Furthermore, on the basis of scientific knowledge, only differences in soil carbon storage due to anthropogenic disturbances can be estimated;
- Sweden commented that this indicator is typically the result of extensive measurements by soil scientists and a slowly changing number that can be hard to be used as an indicator.

**21. Proportion of land that is degraded over total land area**

- France was of the opinion that an annual frequency is not relevant.

**22. Number of deaths and missing persons attributed to hydro-meteorological disasters, per 100,000 population**

- Israel stated that this is not relevant for all countries. Israel also commented that it is difficult to obtain data on the direct cause of death by type of disaster;
- Russian Federation recommended to rename the indicator to “Number of deaths and missing persons attributed to hydro-meteorological disasters”;
- Sweden saw this as a relevant indicator, and stressed the importance of cooperation of NSOs with other responsible authorities.

**23. Occurrence of extreme weather events**

- Bosnia and Herzegovina considered it as useful to include type, severity, scope, frequency and duration data;
- Russian Federation had a comment on the sub-area, which should be linked with the description of the indicator;
- Sweden mentioned that this is a relevant indicator, but requires good cooperation with meteorological institutes.

**24. Direct economic loss attributed to hydro-meteorological disasters in relation to GDP**

- Israel mentioned the importance of fires, as in Israel they cause higher economic damages than floods;
- Russian Federation suggested to change the unit of measurement to “% of GDP”, then there would be no need to convert from national currency to USD;
- Sweden mentioned that the calculation of the indicator needs to be done from occasion to occasion. Therefore, it is more a special study than statistics or indicators;

- US BEA recommended to change the indicator to “major hydro-meteorological disasters”, as the impacts of minor weather events usually are not well measured.

## **25. Number of people whose destroyed dwellings were attributed to hydro-meteorological disasters**

- Finland and Israel mentioned that this is not relevant in their countries;
- Sweden mentioned that this is a relevant indicator, but requires good cooperation with meteorological institutes. Sweden considers this as special studies rather than statistics;

## **26. Distribution of cases of vector-borne diseases**

- Bosnia and Herzegovina suggested to include data on the type of diseases and the time of the year of their occurrence;
- Germany stressed the importance to be consistent with the ICD-10 classification. It needs to be investigated if there is a complete list of vector-borne diseases in the ICD-10 classification is available. A uniform list of relevant ICD codes is considered as necessary.

## **27. Heat-related mortality**

- Germany stressed the importance to be consistent with the ICD-10 classification. A uniform list of relevant ICD codes is considered as necessary;
- Israel mentioned that hot countries are more adapted to heat conditions, therefore it may be difficult to compare. It may also be difficult to obtain this information from hospital records.

## **28. Direct agricultural loss attributed to hydro-meteorological disasters**

- Bosnia and Herzegovina requested a clarification whether this refers to permanent or temporary losses;
- Finland informed that this information is not collected anymore in Finland, and that the coverage of indirect information on insurances is not very good;
- Russian Federation stressed the importance to link the sub-area with the name of the indicator;
- Sweden commented that it is tricky to assess the cause of agricultural loss.

## **29. Renewable energy share in the total final energy consumption**

- US BEA raised the question if the objective is “renewables” or emission-less or low-emission energy. This can be a difference, e.g. some renewables burn carbon and are not low-emission. It was proposed to consider “emission-less or low-emission energy as share of total final energy consumption” as alternative indicator.

**30. Share of climate change mitigation expenditure relative to GDP**

- Portugal suggested further methodological developments within Environmental Protection Expenditure Accounts;
- Russian Federation considered it necessary to reconcile the definition and description of the indicator with the relevant operational indicator. The operational indicator is related only to the government costs of mitigating the effects of climate change, while the definition along with government costs provides information on private sector and households;
- Sweden mentioned the difficulty to single out the climate change mitigation expenditure of a budget unless it happens to be a specific policy with that name on it;
- US BEA commented that scaling by GDP may lead to ambiguity.

**31. Share of energy and transport related taxes as percentage of total taxes and social contributions**

- Germany considered the definition of taxes problematic: In Germany the "Renewable energy law" (EEG) tax is not included but the "oil reserve" tax is included;
- In Sweden these kind of statistics are well established and considered as useful;
- US BEA mentioned that total taxes and social contributions as the denominator presents a similar ambiguity problem as GDP. Questions raised are: What if total taxes change for reasons unrelated to climate? What if taxes effectively lower the use of emissions, consistent with the goal of the policy, and total taxes collected here declines?

**32. Total climate change related subsidies and similar transfers / GDP**

- Germany mentioned that no definition for subsidies is available;
- Portugal suggested to have further methodological developments within Environmental Protection Expenditure Accounts. This indicator is feasible but currently not a priority;
- Slovenia commented that the methodology for this SEEA account is not yet established;
- Sweden stated that "climate change-related" is a vague concept that needs a better definition in order to be followed up. Climate change concern so many policies that it hides more than it reveals as a marker for budgets;
- US BEA was of the opinion that scaling by GDP may lead to ambiguity.

**33. Average carbon price**

- Sweden considered this as an interesting indicator, probably varying between different industries depending on taxes and subsidies.

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**34. Mobilized amount of USD per year starting in 2020 accountable towards the USD 100 billion commitment**

- Portugal and Sweden commented that this is not a statistical indicator.

**35. Share of government adaptation expenditure to GDP**

- Israel mentioned that adaptation expenditure has to be clearly defined. Some expenditure exists under different titles;
- Portugal suggested to develop the methodology further within Environmental Protection Expenditure Accounts;
- Sweden commented that adaptation is part of government activities. If the indicator included snow avalanche adaptation expenditures or fire department expenditure, that would be o.k., but it is not recommended break loose the climate part of that;
- US BEA was of the opinion that scaling by GDP may lead to ambiguity.

**36. Change in water use efficiency over time**

- Russian Federation suggested to reflect in the methodology that GDP data should be used at constant prices. This would exclude the influence of inflationary processes.

**37. Proportion of population living in dwellings with air conditioners or air conditioning**

- Austria saw this as a 'second best' indicator for adaptation to climate change. In countries like Sweden or Norway which have lower average temperatures per year and also colder days in summer compared to e.g. Spain or Italy air conditioners in dwellings are probably not so important. Instead these countries will have to deal with other effects of climate change;
- Finland was of the opinion that this indicator is not very relevant at national level. It could be more informative when related to the most vulnerable parts of population.
- Sweden mentioned that this is not known statistics. It also raised the question whether it is good because people can take the heat, or bad because it consumes energy.
- USE BEA raised the question if it was considered that an increase in the proportion of air conditioned homes may reflect increased disposable income rather than adaptation to heat.

**38. Progress towards sustainable forest management**

- Finland agreed that the methodology needs to be developed in the SDG context. Even though national data are available for the 4 sub-indicators, the method to aggregate and combine these sub-indicators should be developed;
- Israel mentioned that this indicator is not relevant for Israel.

**39. Proportion of agricultural area under productive and sustainable agriculture**

- Finland saw this as an useful indicator. It questioned how to measure and how to estimate sustainability as a combination of its economic, environmental and social dimensions;
  - United Kingdom had concerns that the proposed methodology will end up being inconsistent, using local measures of sustainability.
-