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Programme of work of the Statistics subprogramme of the

United Nations Economic Commission for Europe;

Reports on the work of the Conference of European Statisticians, its Bureau and Teams of Specialists

Implementation of the United Nations Economic Commission for Europe Statistical Programme 2021

Addendum

Summary of discussions and conclusions of the Joint OECD/UNECE Seminar on the Implementation of the System of Environmental- Economic Accounting (SEEA)¹

Prepared by the secretariat

Summary

The report presents the key outcomes of the Joint OECD-UNECE Seminar on the Implementation of the System of Environmental-Economic Accounting (SEEA) which took place on 28, 30 and 31 March 2022 in an online format.

The report is submitted to the Conference of European Statisticians for information.

¹ This document was submitted late for processing since clearance in finalizing this document took longer than anticipated.



I. Introduction

1. The seventh Joint OECD/UNECE Seminar on the Implementation of the System of Environmental-Economic Accounting (SEEA) was held as an online meeting on 28 March and 30 and 31 March 2022. It was jointly organized with the Organisation for Economic Cooperation and Development (OECD) and an organising committee with members from National Statistical Offices of Australia, Canada (co-chair), Finland (co-chair), the Netherlands, the Russian Federation and Sweden. Eurostat, UNEP, UNSD and the lead editor of the update of the 2008 SNA were also represented in the Organising Committee in addition to OECD and UNECE.
2. Experts from the following countries participated in the meeting: Armenia, Australia, Austria, Belarus, Brazil, Canada, China, Costa Rica, Croatia, Czech Republic, Denmark, Ecuador, Estonia, Finland, France, Georgia, Germany, Hungary, Iceland, Ireland, Israel, Italy, Japan, Kazakhstan, Kyrgyzstan, Lithuania, Luxembourg, Mexico, Mongolia, Netherlands, Norway, North Macedonia, Poland, Portugal, Republic of Moldova, Romania, Russian Federation, Slovenia, South Africa, Spain, Sweden, Switzerland, Türkiye, United Arab Emirates, United Kingdom of Great Britain and Northern Ireland, United States of America and Uzbekistan.
3. Representatives of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), United Nations Economic and Social Commission for Western Asia (ESCWA), United Nations Development Programme (UNDP), United Nations Environment Programme (UNEP), United Nations Statistics Division (UNSD), United Nations Statistical Institute for Asia and the Pacific (UNSIAP), International Monetary Fund (IMF), International Labour Organization (ILO), European Commission – Eurostat, Food and Agriculture Organization (FAO), European Environment Agency (EEA), European Free Trade Association (EFTA), Organisation for Economic Cooperation and Development (OECD), Interstate Statistical Committee of the CIS (CIS-STAT), Statistical, economic and social research and training centre for Islamic countries (SESRIC) also participated in the meeting. Caribbean Development Bank was also represented.
4. Academia and research were represented by Commonwealth Scientific and Industrial Research Organisation of Australia, Dresden University of Technology, Finnish Environment Institute, Institute for Applied Systems Analysis, Institute for Future Studies and Technology Assessment, Institute for Sustainable Innovation, Kyushu University, Martin Luther University Halle Wittenberg, University of Portsmouth, Scientific and Practical Centre for Bioresources of National Academy of Sciences of Belarus, and Swedish Environmental Research Institute.
5. Other institutes included Cadastral Agency, Conservation International, Marine and Coastal Research Institute (INVEMAR).

II. Organization of the meeting

6. The seminar was co-chaired by Ms. Johanna Pakarinen from Statistics Finland and Mr. Michael Wright from Statistics Canada.
7. The participants adopted the agenda of the seminar.
8. The seminar consisted of six sessions:
 - (a) **Session 1: Opening and Introduction** – Session Chair: Michael Wright (Statistics Canada);
 - (b) **Session 2: Current national practices and new developments in implementing SEEA** – Session Chair: Nils Brown (Statistics Sweden);
 - (c) **Session 3: Reviews of relevant international standards** – Session Chair: Sarah Barahona (OECD);

(d) **Session 4: Current national practices and new developments in the SEEA Ecosystem accounts** - Session Chair: Mandy Driver (South African National Biodiversity Institute);

(e) **Session 5: Towards circular economy measurement** – Session Chair: Greg Peterson (Statistics Canada);

(f) **Session 6: Conclusions and recommendations** – Session Chair: Johanna Pakarinen (Statistics Finland).

9. All documents of the meeting and weblinks to meeting recordings are available at <https://unece.org/info/events/event/362755>.

III. Summary of the discussion and main conclusions reached at the meeting

A. Session 1: Opening and introduction

10. The meeting was opened by Michael Wright (Co-chair), Michael Nagy on behalf of Lidia Bratanova (UNECE, Director of Statistical Division) and Paul Schreyer (OECD Chief Statistician and Director of Statistics and Data Directorate).

11. Updates on important international work were given by UNSD on the recent work of the United Nations Committee of Experts on Environmental-Economic Accounting (UNCEEA) and by the Federal Statistical Office of Germany on the discussions at the 27th meeting on the London Group on Environmental Accounting (chair is Germany).

12. The presentation on UNCEEA included an overview on the governance mechanism and the five areas the UNCEEA Bureau is organising the work. Topics of focus of UNCEEA work are the monitoring of the current state of implementation, implementation strategy for SEEA Ecosystem Accounting (SEEA EA), involvement in 2008 SNA update, databases, mainstreaming of use of SEEA in global policy areas, the working group on business accounting and the development of a statistical framework for measuring the sustainability of tourism.

13. The main discussions at the 27th meeting of the London Group on Environmental-Economic Accounting included implementation issues and case studies on the SEEA EA, assessing ecosystem service flows and the valuation of ecosystems and their services. The presentation also covered some initial ideas concerning organisational issues of the 28th meeting, which is planned to be an in-person meeting in September 2022.

B. Session 2: Current national practices and new developments in implementing SEEA

14. The session was chaired by Nils Brown (Statistics Sweden).

15. The main objectives of the session were to present experiences related to the initial development of new environmental-economic accounts, challenges with implementation, and outcomes of the work at the national level.

16. National experiences were shared by Australia, Japan, South Africa and Sweden.

17. Australia presented a timeline of events related to the implementation of SEEA. For example, the work on water accounts started in 2000 as an initiative of the Australian Bureau of Statistics (ABS), showcasing ministries and several sub national agencies the usefulness for informing water policy. First water accounts were modelled (water flows and water assets). Since 2008 water accounts are survey based and supplemented with administrative sources, and the desire for regional accounts by policy makers has increased. ABS is now planning to modernise its production of accounts, e.g. by exploring new data sources, developing new accounts and adjusting the outputs according to users' needs.

18. Japan presented its first experiences with the implementation of air emission accounts, with a focus on greenhouse gas emissions. Both the “Master Plan Concerning the Development of Official Statistics” from March 2018 and the “Green Growth Strategy Through Achieving Carbon Neutrality in 2050” from June 2021 refer to SEEA as the foundation for producing the relevant data to inform these policies.

19. South Africa started implementation of SEEA with water accounts in 2000, and gradually developed more accounts over time, including energy accounts, mineral accounts, fishery accounts, accounts for specific species (e.g. rhinos), marine ecosystem accounts etc. Among other issues, work is now underway to develop biodiversity economy satellite accounts. Interest in natural capital accounts is growing faster than the current institutional capacity to produce them.

20. Sweden started with implementation of SEEA in 1991. First accounts were Environmental Expenditure Accounts, later complemented by Material Flow Accounts, Forest Accounts, Waste Accounts, etc. Important milestones in recent years include the production of quarterly air emissions accounts (since 2016), regional air emission accounts (since 2017) and consumption based GHG emissions (since 2019). Among the lessons learned is the importance of a team with a good mix of skills, for example environmental economists, IT/SAS-knowledge, scientists and statisticians. Furthermore, the importance of the cooperation with users and access to additional funding was raised.

Conclusions

21. All NSOs presenting in the session have positive experiences of producing pilot accounts and recommended this also to other countries which are in an early stage of implementing SEEA or selected accounts.

22. Multi-stakeholder processes are key for successful implementation. Main stakeholders, next to NSOs, are government agencies, policy makers and private stakeholders.

C. Session 3: Reviews of relevant international standards

23. The session was chaired by Sara Barahona (OECD).

24. The current work to update the 2008 System of National Accounts (SNA) and revisions of international classifications used in economic statistics have various important implications or relationships with the SEEA. The main objective of the session was to present these and other new or ongoing reviews of the current standards for SEEA.

25. After a short introduction by the Chair the lead editor of the update of the 2008 and the chair of the area group on environmental economic issues gave a presentation on the main issues which may also affect environmental-economic accounting. These issues include the economic ownership and depletion of resources, the discussion whether the atmosphere is an asset, accounting for biological resources, the consideration of renewable energy resources and more. The adoption of the updated SNA by the United Nations Statistical Commission is planned to be in 2025.

26. The International Monetary Fund (IMF) gave an update on the ongoing work related to the recording of emission permits in national accounts. Different options are being discussed for example considering emission permits as non-produced non financial assets; recorded as a resource lease (financial asset), with resource rent recorded at surrender; or recorded as contracts, leases, licenses, with taxes on production recorded at auction. Current Recommendation: Emissions Permits recorded as split assets, with taxes on production recorded at surrender. The current recommendation is to record emissions permits as split assets, with taxes on production recorded at surrender.

27. Statistics Netherlands and UNSD informed about the various workstreams regarding classifications, and the engagement of SEEA in the SNA update. Several revision efforts are ongoing, and they provide an opportunity to make 'environment' more explicit in statistical classifications. The classifications currently being revised include the International Standard Industry Classification (ISIC), the Central Product Classification (CPC), the Standard

International Energy Classification (SIEC), the Classification of the Functions of Government (COFOG), various SNA relevant classifications and the Classification of Environmental Activities (CEA).

Conclusions

28. The SNA update is currently in the research phase and several guidance notes on environmental-economic accounting will be discussed by the Advisory Expert Group on National Accounts (AEG) in April/May.

29. After the AEG meetings, these guidance notes are expected to go for global consultation and comments from the SEEA community will be welcome.

30. The guidance notes can be found at <https://unstats.un.org/unsd/nationalaccount/SNAUpdate/GuidanceNotes.asp>.

D. Session 4: Current national practices and new developments in the SEEA Ecosystem accounts

31. The session was chaired by Mandy Driver (South African National Biodiversity Institute).

32. The main objectives of the session were to inform about the SEEA Ecosystem Accounts (SEEA EA) implementation strategy, available tools and related work, as well as to feature presentations on selected key topics from the ecosystem accounting framework.

33. UNSD started the session with an introduction to the SEEA EA implementation strategy. The suggested target is to have a least 60 countries implement at least one account of the SEEA EA by 2025. Activities of the implementation strategy include capacity building, the development of guidelines and other materials to support compilation, strengthening of collaboration on national and international levels, providing data and tools as well as communication and advocacy.

34. After that UNSD presented various tools that are available for countries to support them in their efforts to compile SEEA EA. Already available tools include the Guidelines on Biophysical Modelling for SEEA Ecosystem Accounting, the Technical Report on Monetary Valuation, and the compilation tool ARIES (ARtificial Intelligence for Environment and Sustainability). All these tools can be found in section “Ecosystem Accounting Toolkit” at <https://seea.un.org/ecosystem-accounting>.

35. Two presentations discussed the links between SEEA and the policy area of nature-based solutions (NbS). A key barrier to implementing NbS is a lack of integrated, spatially relevant environmental and economic data that can be consistently compared and can be used to identify locations requiring action, design relevant solutions and evaluate and monitor progress. A UNSD consultant presented the draft of a paper which, among other objectives, aims to identify specific examples and NbS initiatives that can be case studies for testing the potential role of SEEA. An ILO representative informed about the current efforts to develop a conceptual framework to support measurement of decent work in NbS. ILO also asked interested countries to share their experiences and/or to participate in this work.

36. National examples of SEEA EA implementation were presented by Colombia, Mexico and the United States.

37. The Colombian Marine and Coastal Research Institute (INVEMAR) presented its recent work on the Ramsar Site “The Great Lagoon of Santa Marta”. With the development of an ecosystem extent account it was possible for the first time to quantify the changes in ecosystem assets in the period 2012-2018. Most losses were pastures, continental wetlands and mangroves, whereas the greatest gains were reported for annual croplands and seasonally dry shrublands. The project also included the development of condition indicators for mangroves and aquatic ecosystems, biophysical indicators for the valuation of ecosystem service of carbon storage and biophysical – monetary indicators for the valuation of ecosystem service of fishing.

38. The National Institute of Statistics and Geography (INEGI) of Mexico presented the Mexican collaborative approach to measuring ecosystem condition. Mexico is one of the partner countries of the Natural Capital Accounting and Valuation of Ecosystem Services (NCAVES) project with a view to improving the measurement of ecosystems and their service, mainstreaming biodiversity and ecosystems at policy planning and implementation; and to contribute to the development of internationally agreed methodology and its use. The inter-institutional and interdisciplinary collegiate work builds upon the existing National System of Statistical and Geographic Information (SNIEG), which involves next to INEGI various other governmental agencies. Furthermore, there is collaboration with the academic, private and social sectors, as well as international collaboration.

39. The representative of the US Geological Survey shared their experience in piloting SEEA EA in the United States. The work started in 2016 and involves various statistical and non-statistical agency partners. Piloting of SEEA EA is part of piloting a suit of accounts, including land accounts, water accounts and mineral accounts. It was emphasized that ecosystem accounts support fine-grained analysis, and are therefore used in multiple ways. They allow for presenting ecosystem data for Metropolitan Statistical Areas, new county-level GDP estimates and to extract results for any geography (e.g. watersheds or public lands). Future ecosystem accounting efforts in the US include forest ecosystem accounting, the update of urban ecosystem accounts and implementing coastal ecosystem accounts.

Conclusions

40. There is much activity underway at the global level to support implementation of SEEA EA.

41. The range of applications of SEEA EA continues to grow. Ecosystem accounting can support projects and processes related to natural resource management at the landscape scale, and is therefore more than just a monitoring and reporting tool.

42. Implementation of SEEA EA requires partnerships. Multi-institutional partnerships underpin ecosystem accounting, but there are also new relationships built and strengthened through the process of developing these accounts.

43. More discussion on monetary valuation aspects of SEEA EA would be useful. In particular to discuss when is monetary valuation useful/not useful, in what contexts, and what for?

E. Session 5: Towards circular economy measurement

44. The session was chaired by Greg Peterson (Statistics Canada).

45. The main objective of the session was to provide an update of the work of the Conference of European Statisticians (CES) Task Force on Measuring Circular Economy and related work at the OECD. Another objective was to discuss present and discuss national examples on measuring circular economy with SEEA.

46. The first part of the session discussed the measurement scope of the circular economy and the role of SEEA. It included presentations on the related work of the UNECE task force and the OECD expert group, the Dutch measurement framework and an example from Denmark on using physical supply and use tables for measuring plastic flows and circular material use rates.

47. Statistics Finland (chair of the UNECE Task Force on Measuring Circular Economy) presented progress of work of both the UNECE Task Force and the OECD Expert Group on Information for a Resource Efficient and Circular Economy. Both expert groups work complementary with each other, and the main objective is to draft joint practical guidelines for measuring circular economy by end of 2022. The work is split into three interrelated work packages (WPs), WP1 – conceptual monitoring framework (lead OECD and European Environment Agency); WP2 – statistical measurement framework (lead Italian Environment Agency); and WP3 – Circular Economy Indicators (lead UNEP). Work is carried out in parallel and will be integrated into one single document before summer 2022. One important interim output of work is the agreement on proposing a common headline definition of a

circular economy into which other definitions (e.g. sector specific, or for measurement purposes) can be embedded. The links between the different definitions will be explained with annotations.

48. Statistics Netherlands presented its measurement scope of the circular economy and the role of SEEA. The Dutch Framework consists of four main elements: 1. Input of materials; 2. R strategies; 3. Output of materials; and environmental and socio-economic impacts. The integrated environmental accounting modules include Material Flow Accounts, Waste Accounts, Air Emission Accounts, Physical Energy Flow Accounts and National Accounts. The presentation also discussed the relation with SDGs, for example how to measure which circular economy strategies contribute to selected SDG targets.

49. Statistics Denmark shared its experience in using physical supply-use tables (PSUT) for measuring plastic flows and circular material use rates. The starting point for this work are existing full PSUT for Denmark. To develop PSUT for plastics it was necessary to multiply the mass of all products and waste of the PSUT with the respective plastic content. With that it was possible to present Danish plastic flows in form of a Sankey diagram, to show the domestic use of plastic products, record plastics in waste and to calculate the circular material use rate for plastics.

50. The second part of the session focussed on the use of Material Flow Accounting (MFA) in measuring circular economy.

51. The Commonwealth Scientific and Industrial Research Organisation (CSIRO) Australia presented its work in collaboration with UNEP on the development of MFA for the global level. UNEP and its partners have been developing the global MFA knowledge base for more than a decade. It provides science for evidence-based policy making on all levels, and several UNEP information products on material flows and resource productivity are based on it. One important flagship publication using this data is the Global Resources Outlook 2019. Ongoing work includes the development of training materials, updates of the global material flow and resource productivity database, and the active contribution to several policy agendas, such as circular economy, GHG abatement, biodiversity conservation or ecosystem health.

52. Eurostat presented the European Union experience in using MFA for circular economy. The key MFA indicators produced by Eurostat from MFA are the domestic material consumption (DMC), resource productivity (GDP/DMC), the circular material use (CMU) rate and material footprints. For the purpose of visualisation Sankey diagrams of material flows are being produced. The presentation also discussed some of the “untapped” SEEA potential for measuring circular economy in the European Union.

53. Statistics Finland presented its applications of MFA and waste statistics in measuring circular economy. The presentation covered the objectives and monitoring of the Finnish strategic programme for circular economy and the current indicator development. The indicator framework includes the following 8 areas: 1. Design; 2. Material extraction; 3. Production; 4. Logistics; 5. Trade and services; 6. Consumption; 7. Waste; 8. Re-use and recycling. MFA and waste statistics are mainly relevant for the compilation of indicators in the areas material extraction, waste, and re-use and recycling.

54. The National Statistics Office of Georgia (Geostat) shared its experience in compiling MFA. Data originate from various statistical sources, e.g. agricultural statistics, energy balance, transport statistics, trade statistics, population statistics and from the national accounts. Data on fishery comes from the national environment agency (MEPA). The work was started in 2018 with external support. A memorandum of cooperation between Geostat and MEPA ensures the continuous exchange of data and collaboration in form of technical working groups.

Conclusions

55. The international work on developing the needed monitoring and measurement frameworks is advancing. SEEA is an important element of these frameworks, but there needs to be a system of systems.

56. In practical implementation data availability and data quality are important issues. In particular timeliness and granularity of data is key.

F. Session 6: Conclusions and recommendations

57. The session on conclusions and recommendations was chaired by Johanna Pakarinen (Statistics Finland).

58. Session chairs presented the conclusions of their sessions, and the UNECE Secretariat presented the results of a participants' survey on the main topics for the next Joint OECD/UNECE Seminar on SEEA Implementation.

Conclusions

59. Participants recommended to continue with the organisation of "Joint OECD/UNECE Seminars on SEEA implementation" on an annual basis. The next seminar is planned to be held in Geneva on 14-15 March 2023.

60. As possible topics of the next seminar participants ranked the issues of ecosystem services, ecosystem condition accounts, taxes and subsidies and energy accounts with highest priority. The focus of the seminar should continue to be on the presentation of case studies and challenges related to the implementation of selected SEEA modules.
