



# Economic and Social Council

Distr.: General  
12 December 2022

Original: English

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## Statistical Commission

### Fifty-fourth session

28 February–3 March 2023

Item 3 (h) of the provisional agenda\*

**Items for discussion and decision: environmental-economic accounting**

## Committee of Experts on Environmental-Economic Accounting

### Note by the Secretary-General

In accordance with Economic and Social Council decision 2022/324 and past practices, the Secretary-General has the honour to transmit herewith the report of the Committee of Experts on Environmental-Economic Accounting. In the report, the Committee describes the progress that it has made over the past year, as well as its future activities. The discussion is organized according to the five areas of the Committee's work: coordination and communication; methodological development for normative standards and other research; development of databases; implementation and statistical capacity-building; and business accounting. In particular, the Committee describes its progress in scaling up global implementation of the System of Environmental-Economic Accounting (SEEA), its involvement in the monitoring framework of the post-2020 global biodiversity framework and new Group of 20 Data Gaps Initiative, progress on global data collection and databases and its engagement in the development of emerging business reporting and disclosure initiatives on nature. Action to be taken by the Commission is set out in paragraph 54 of the report.

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\* E/CN.3/2023/1.



# Report of the Committee of Experts on Environmental-Economic Accounting

## I. Introduction

1. At its fifty-third session, held from 1 to 4 March 2022, the Statistical Commission adopted decision 53/115 (see [E/2022/24-E/CN.3/2022/41](#), chap. I, sect. C), in which it:

(a) Commended the work of the Committee of Experts on Environmental-Economic Accounting, and supported its proposed programme of work for the period 2022–2025;

(b) Adopted the implementation strategy for the System of Environmental-Economic Accounting (SEEA) Ecosystem Accounting, welcoming the recommendations of a flexible and modular approach, multi-stakeholder engagement, tiered implementation, South-South collaboration and strengthened coordination between international organizations; encouraged all countries to implement the SEEA Ecosystem Accounting; stressed the importance of adequate funding to support SEEA implementation in countries; and requested the translation of the SEEA Ecosystem Accounting into all United Nations official languages;

(c) Welcomed the Guidelines on Biophysical Modelling for Ecosystem Accounting, and requested the Committee to develop compilation materials, e-learning, and tools such as Artificial Intelligence for Environment and Sustainability for SEEA (ARIES for SEEA), to support greater capacity-building on the SEEA Ecosystem Accounting;

(d) Supported the establishment of multi-stakeholder subgroups under the SEEA Ecosystem Accounting Technical Committee, working on thematic accounts, including for forest accounts and SEEA Ocean; and welcomed pilot projects and engagement in international events such as the United Nations Ocean Conference;

(e) Supported the close collaboration between the Committee, the Advisory Expert Group on National Accounts and the Intersecretariat Working Group on National Accounts on the update of the System of National Accounts 2008, noting the importance of taking into account SEEA to reflect environmental issues within the updated System of National Accounts 2008; and further supported the engagement of the Committee in a new working group on System of National Accounts valuation principles in order to address methodological issues on the research agenda of the SEEA Ecosystem Accounting, including to resolve the valuation issues in chapters 8 to 11;

(f) Welcomed the engagement of the Committee in the updates of the International Standard Industry Classification and the Central Product Classification, noting the importance of ensuring that the updated classifications are fit for purpose for SEEA compilation and sufficiently forward-looking in scope;

(g) Welcomed the progress of the Committee in mainstreaming the use of SEEA in policy, including climate change, circular economy, sustainable finance, and biodiversity policy, and supported the Committee's work in ensuring that SEEA is recognized as the underlying methodological basis for the compilation of the relevant headline indicators of the monitoring framework of the post-2020 global biodiversity agenda;

(h) Welcomed the involvement of the Committee in the proposal for a new Group of 20 Data Gaps Initiative to close climate change data gaps using SEEA accounts for all countries, in particular given the significant demand for climate change indicators;

(i) Welcomed the progress of the working group on business accounting and the SEEA, and supported the group's focus on alignment of private sector methodology and standards with SEEA and on increased collaboration and awareness-raising between the statistical and business communities, noting the benefits to both the public and the private sectors in this regard;

(j) Encouraged the finalization of the statistical framework for measuring the sustainability of tourism for future submission to the Commission, and noted the strong interest from countries in this work.

2. The work of the Committee is organized according to five broad areas of work, with members of the Bureau leading the related parts of the programme of work, as agreed in the Committee's terms of reference. The areas of work are as follows: area A, coordination and communication, led by Statistics Canada; area B, methodological development for normative standards and other research, which is divided into two sub-areas (area B1, SEEA Central Framework, led by Statistics Netherlands, and area B2, SEEA Ecosystem Accounting, led by the South African National Biodiversity Institute); area C, development of databases, led by the Organisation for Economic Co-operation and Development (OECD); area D, implementation and statistical capacity-building, jointly led by the Statistical Institute for Asia and the Pacific and the Kenya National Bureau of Statistics; and area E, business accounting, led by the National Institute of Statistics and Geography of Mexico.

3. In the present report, the Committee describes the progress made during the past year and its future areas of work. Action to be taken by the Statistical Commission is presented in section VIII.

## **II. Area A: coordination and communication (led by Statistics Canada)**

4. The working group on coordination and communication focuses on fostering collaboration between initiatives related to environmental-economic accounting and implementing practical strategies to promote the use of the SEEA for emerging policy issues. These efforts demand collaboration between national statistical offices, line ministries and the international community. The working group has focused its work programme in six main areas. These areas are driven by the current international priorities related to environmental challenges where the accounts can provide valuable insights at the intersection of the environment and the economy: biodiversity, climate change, the circular economy, the sustainability of tourism, sustainable finance and communication.

### **Biodiversity**

5. Part two of the Fifteenth Meeting of the Conference of the Parties to the Convention on Biological Diversity was scheduled to take place in Montreal, Canada, in December 2022 and was expected to adopt the post-2020 global biodiversity framework and its monitoring framework. Many of the indicators are fully operational, with some already being collected through the Sustainable Development Goals indicator process or another process, for example, the Red List Index (Goals indicator 15.5.1). However, the methodology of other indicators and further operationalization of the full monitoring framework will be guided by an ad hoc

technical expert group<sup>1</sup> to be established under the auspices of the Convention on Biological Diversity.

6. Efforts have already been made to align the proposed headline indicators in the monitoring framework for the post-2020 global biodiversity framework with the statistical frameworks developed under the Statistical Commission, including the Sustainable Development Goals, the SEEA and the Framework for the Development of Environment Statistics. In particular, the indicator working group established under the SEEA Ecosystem Accounting Technical Committee has provided input to the draft monitoring framework and prepared draft metadata for those headline indicators that are derived from the SEEA. The participation of members of the Committee on its behalf in the forthcoming expert group established by the Conference of the Parties provides an important opportunity for the statistical community to promote the use of common standards related to data and methods, in particular on the monitoring of goals and targets where the SEEA is recognized as the underlying methodological basis for the compilation of headline indicators. More broadly, the Committee's participation will play a role in building greater collaboration between national statistical offices, line ministries and the science community.

7. To jump-start adoption of the monitoring framework and support the work of the forthcoming expert group, the European Union, with the support of the secretariat of the Convention on Biological Diversity and the United Nations Environment Programme (UNEP)-World Conservation Monitoring Centre, planned to launch a global knowledge centre for biodiversity jointly with partners at the Fifteenth Meeting of the Conference of the Parties. This global knowledge centre will act as a shared platform to facilitate access to biodiversity-related data and tools and as a way to connect existing biodiversity knowledge hubs and other biodiversity-related data providers and tools. The Committee, through the Statistics Division of the Department of Economic and Social Affairs of the Secretariat, plans to join this global knowledge centre in order to offer enhanced access to and use of existing statistical tools and platforms for monitoring and reporting, such as the ARIES for SEEA.

8. Governments, in particular ministries of climate, energy and the environment, have already stressed the importance of the SEEA for the post-2020 global biodiversity framework. In May 2022, the ministers for climate, the environment and energy of the Group of Seven committed to ensuring implementation of the SEEA Central Framework and SEEA Ecosystem Accounting in the context of the mainstreaming of biodiversity values into policy, and to implementing an effective post-2020 global biodiversity framework. The Group of Seven also specifically noted the plan to use indicators derived from the SEEA Ecosystem Accounting in biodiversity policy and decision-making and to provide international support for further development and implementation of the SEEA Ecosystem Accounting.<sup>2</sup>

## Climate change

9. Area A continues to prioritize mainstreaming the SEEA into climate change initiatives. A new Group of 20 Data Gaps Initiative was welcomed by the Group of 20 finance ministers and central bank governors at their fourth meeting in October 2022.<sup>3</sup> The Initiative calls for the International Monetary Fund, in close cooperation with the Financial Stability Board and the Inter-Agency Group on Economic and Financial Statistics, to improve the provision and availability of data in the following

<sup>1</sup> See [www.cbd.int/doc/c/9849/459f/b9fe0e74c9e1f25dd90dee23/sbstta-24-l-03-en.pdf](http://www.cbd.int/doc/c/9849/459f/b9fe0e74c9e1f25dd90dee23/sbstta-24-l-03-en.pdf).

<sup>2</sup> See [www.bundesregierung.de/breg-de/themen/klimaschutz/g7-climate-energy-environment-2044548](http://www.bundesregierung.de/breg-de/themen/klimaschutz/g7-climate-energy-environment-2044548).

<sup>3</sup> See <http://www.g20.utoronto.ca/2022/G20-Chairs-Summary-4th-FMCBG-12-13-Oct-2022.pdf>.

areas: (a) climate change; (b) distribution of household income and wealth; (c) fintech and financial inclusion; and (d) access to private and administrative data and data sharing. Half of the 14 recommendations of the workplan of the Initiative are related to climate change. The SEEA provides the methodological basis for many of these recommendations, in particular those on greenhouse gas emission accounts and national carbon footprints (recommendation 1); energy accounts (recommendation 2); climate change mitigation and adaptation current and capital expenditures (recommendation 6) and government climate-impacting subsidies (recommendation 7). As such, the Committee will be involved in assisting the Inter-Agency Group and Group of 20 countries in progressing towards closing those gaps. Work on the Initiative will be supported by the SEEA Central Framework Technical Committee (area B1) and the working group on the development of databases (area C). On the basis of the experience of the first two Data Gaps Initiatives launched by the Group of 20 finance ministers and central bank governors, it is expected that the Initiative will have an important spillover effect in encouraging non-Group of 20 countries to develop SEEA accounts in support of the development of appropriate policies to address the financial and economic implications of climate change.

10. The working group continues to coordinate with the Economic Commission for Europe (ECE) to engage in activities aimed at improving the usefulness of official statistics for climate policy and analysis, including advancing the use of the SEEA for climate change indicators. In particular, the working group has contributed to the annual ECE expert forums for producers and users of climate change-related statistics and a newly launched ECE task force on the role of national statistical offices in achieving national climate objectives. The working group's activities in the coming years will also include engaging with international groups, such as the secretariat of the United Nations Framework Convention on Climate Change, the Intergovernmental Panel on Climate Change and the Expert Group on Environmental Statistics to facilitate communication and collaboration.

## **Circular economy**

11. Area A includes active engagement in two complementary efforts on the circular economy through the participation of some of its members: (a) the ECE task force on measuring the circular economy, established by the Bureau of the Conference of European Statisticians; and (b) the OECD expert group on a new generation of information for a resource-efficient and circular economy. The ECE task force plans to present a statistical framework for measuring the circular economy based on the SEEA to the Bureau of the Conference of European Statisticians in February 2023. The findings of the task force have shown that the SEEA is suitable for measuring many of the drivers for the circular economy, such as recycling and reuse of materials; goals at the macro and meso levels, such as waste reduction; and direct and indirect effects on issues such as climate change and biodiversity loss.

12. The work of the OECD expert group aims at improving the information base for resource efficiency and circular economy policies. It is carried out in close cooperation with the ECE task force, with some elements being prepared jointly. The OECD expert group has focused on the development of a common working definition of a circular economy and of a harmonized conceptual framework and indicator set for monitoring progress and supporting policy development and evaluation. Work continues in collaborating with the ECE task force to find ways to fill major measurement gaps and to provide guidance on how to use and communicate circular economy-related information. The results of this OECD work are being integrated into a joint ECE-OECD report on measuring the circular economy.

## Measuring the sustainability of tourism

13. The Committee continues to collaborate with the United Nations World Tourism Organization for the development of the programme on measuring the sustainability of tourism. The programme aims to develop a statistical framework to measure the impacts and dependencies of tourism on the economy, society and the environment, at the national and subnational levels. Progress has been made on the technical development of the statistical framework for measuring the sustainability of tourism, with revised draft chapters. An increasing number of pilots in countries and in subnational destinations have also been developed, some of which have been included in the second edition of the publication entitled “Experiences from pilots in measuring the sustainability of tourism: a synopsis for policymakers”.<sup>4</sup> The expert group on measuring the sustainability of tourism has been relaunched and met from 14 to 16 December 2022 in Madrid to discuss the new draft of the framework and a road map for its finalization, which includes review by the SEEA Central Framework Technical Committee and a global consultation to engage and seek views from the statistical community and the tourism (policy, private sector and academic) communities.

## Sustainable finance

14. The Sixth Policy Forum on Natural Capital Accounting for Better Decision Making,<sup>5</sup> organized jointly by the World Bank Global Program on Sustainability<sup>6</sup> and the Division focused on financing nature and in particular how better data can support investment and policy decisions. The forum brought together representatives from the investment community, policymakers and statisticians, namely, environmental economic accountants. A background paper presenting how the SEEA can help accelerate finance for nature<sup>7</sup> was prepared and discussed during the forum.

## Communication

15. The SEEA website<sup>8</sup> and quarterly newsletter *SEEA News and Notes*<sup>9</sup> continue to function as the Committee’s main vehicles to engage with and inform stakeholders and the general public. The website and newsletter serve as an important mechanism for countries to share their national experiences and publications and for the Committee to highlight international initiatives relevant to the community. In addition, the website and newsletter have highlighted events, such as the 2022 Workshop on Earth Observation for Ecosystem Accounting and the Sixth Policy Forum on Natural Capital Accounting for Better Decision Making. The newsletter audience grew by more than 10 per cent over the past year. In addition, the Division continues to expand the SEEA website’s knowledge base and added approximately 70 publications on the SEEA over the past year.

16. The Committee has also focused communication efforts on promoting the SEEA as a way to build stronger institutions for addressing climate change and sustainable development. In particular, the Committee collaborated with the Committee of

<sup>4</sup> Available from [www.e-unwto.org/doi/abs/10.18111/unwtoecd.2020.1.g51w645001604528](http://www.e-unwto.org/doi/abs/10.18111/unwtoecd.2020.1.g51w645001604528).

<sup>5</sup> See <https://seea.un.org/events/6th-policy-forum-natural-capital-data-better-decision-making-financing-nature>.

<sup>6</sup> See <https://www.worldbank.org/en/programs/global-program-on-sustainability>.

<sup>7</sup> See <https://seea.un.org/sites/seea.un.org/files/how-nca-can-help-accelerate-finance-for-nature.pdf>.

<sup>8</sup> See <https://seea.un.org/>.

<sup>9</sup> See <https://seea.un.org/content/seea-news-and-notes-archive>.

Experts on Public Administration to organize a side event of the 2022 High-level Political Forum on Sustainable Development, entitled “Transforming institutions to build back greener: the case for natural capital accounting”.<sup>10</sup> The side event brought together speakers from a wide range of communities, including academia, government and non-governmental organizations (NGOs) to showcase how compilation of the SEEA necessitates inter-institutional collaboration and a multi-stakeholder approach. The Committee also participated in the twenty-first session of the Committee of Experts on Public Administration to showcase how tools such as the ARIES for SEEA have helped to make integrated and policy-relevant data readily accessible to governments at the national and subnational levels.<sup>11</sup>

### **III. Area B: methodological development for normative standards and other research**

17. An important component of the work of the Committee is the advancement of the research agenda of the SEEA Central Framework and the SEEA Ecosystem Accounting. The present section describes the progress of methodological development and implementation for both.

#### **A. Area B1: System of Environmental-Economic Accounting Central Framework (led by Statistics Netherlands)**

18. Three work streams have been prioritized for the work on the SEEA Central Framework research agenda in the period 2022–2023, taking into account the international agenda: (a) issues linked to classifications, in particular those currently being updated; (b) supporting the update of the System of National Accounts 2008 on issues related to the SEEA; and (c) other issues in the SEEA Central Framework research agenda, including the link between the SEEA Central Framework and the SEEA Ecosystem Accounting. In addition, the new Data Gaps Initiative and circular economy are additional areas that the SEEA Central Framework Technical Committee will engage in.

19. The SEEA Central Framework Technical Committee has provided substantial input to the ongoing update processes for the International Standard Industry Classification and Central Product Classification to ensure that those classifications are fit for the purpose of compiling the SEEA. For the International Standard Industry Classification update, the Technical Committee concentrated on making environment-related activities visible by making them explicit in the explanatory notes of existing classes and by creating some separate classes. For the Central Product Classification update, the Technical Committee identified several topics that are particularly relevant for the SEEA, including waste products, specific environmental products and services, energy products and the alignment of the Standard International Energy Product Classification with the Central Product Classification and Classification of Environmental Functions, in particular concerning climate change and biodiversity. Finally, the group also began participating in the updates of the Standard International Energy Product Classification and the Classification of the Functions of Government, both of which started in the second half of 2022. The work thus far has focused on

<sup>10</sup> See <https://hlpf.un.org/2022/programme/transforming-institutions-to-build-back-greener-the-case-for-natural-capital>.

<sup>11</sup> See <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N22/235/61/PDF/N2223561.pdf?OpenElement>.

identifying issues that need to be further elaborated in the programme of work for 2023.

20. Eurostat and a dedicated European task force have been working in recent years on the revision of the Classification of Environmental Activities, which serves as a fundamental building block for the compilation of environmental activities accounts in the SEEA. A fully developed version of the structure of a new integrated classification, bringing together the Classification of Environmental Protection Activities and the Classification of Resource Management Activities, now named the Classification of Environmental Functions, has been drafted along with explanatory notes. The Classification of Environmental Functions was presented at the SEEA Central Framework Technical Committee and the Committee of Experts on International Statistical Classifications. The Classification of Environmental Functions is currently undergoing global consultation,<sup>12</sup> administered by the Division as secretariat to the Committee of Experts on Environmental-Economic Accounting. The results of the global consultation, along with a revised Classification of Environmental Functions, will be discussed by the SEEA Central Framework Technical Committee and the Committee of Experts on International Statistical Classifications. Upon endorsement by both the Committee of Experts on Environmental-Economic Accounting and the Committee of Experts on International Statistical Classifications, the Classification of Environmental Functions is expected to then be submitted to the Bureau of the Statistical Commission in mid-2023 for adoption.

21. In addition, the SEEA Central Framework Technical Committee is participating in the update of the System of National Accounts 2008 and has contributed to the review and drafting of guidance notes related to the SEEA, for example on issues such as the treatment of emission permits, accounting for biological resources, valuation of mineral and energy resources and treatment of renewable energy resources as assets. The guidance notes have been circulated for global consultation in 2022 and will serve as an input in the drafting of chapters of the updated System of National Accounts 2008. Furthermore, members of the Committee are participating in the task team on valuation principles and methodologies, in the context of the update of the System of National Accounts 2008. The task team is preparing a guidance note on non-market transactions, which will be influential for the Committee's discussions in the context of the valuation of ecosystem services and assets.

22. In recent years, the SEEA Central Framework Technical Committee has prepared several technical notes that provide guidance to data producers as regards the concepts, data collection, compilation and publication of specific SEEA Central Framework accounts. The Technical Committee has reviewed the technical notes on environmental protection expenditure accounts and environmental goods and services sector accounts, which were prepared by Eurostat. The notes have been finalized and published on the SEEA website hosted by the Division.

23. At its sixteenth meeting, held in 2021, the Committee recommended that a discussion begin on a possible update of the SEEA Central Framework, to take place during the Committee's eighteenth meeting, in 2023. The SEEA Central Framework Technical Committee will develop an issue paper to support the discussion in the light of the update of the System of National Accounts 2008, the adoption of the SEEA Ecosystem Accounting and the progress of the research agenda of the SEEA Central Framework.

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<sup>12</sup> See <https://seea.un.org/content/global-consultation-classification-environmental-functions>.



## **B. Area B2: System of Environmental-Economic Accounting Ecosystem Accounting (led by the South African National Biodiversity Institute)**

24. Following the adoption of the SEEA Ecosystem Accounting, its uptake beyond the statistical community has continued. For example, the Committee of Experts on Environmental Economic Accounting and the Committee of Experts on Public Administration organized a side event of the High-level Political Forum on the theme “Transforming institutions to build back greener: the case for natural capital accounting”. Furthermore, the ministers for climate, the environment and energy of the Group of Seven committed to support the SEEA implementation, and the SEEA is being recognized in the draft decisions for the Fifteenth Meeting of the Conference of the Parties to the Convention on Biological Diversity.

25. In March 2021, the Commission also adopted the implementation strategy for the SEEA Ecosystem Accounting at its fifty-third session, in March 2022. The overall objective of the implementation strategy is to scale up the uptake of the SEEA Ecosystem Accounting through regular production of SEEA Ecosystem Accounts and by mainstreaming them into policy- and decision-making. The Committee set a target of having at least 60 countries implement one or more SEEA Ecosystem Accounts by 2025.

26. To advance implementation, the SEEA Ecosystem Accounting Technical Committee has established two working groups on forest ecosystems and oceans. The objectives of both working groups are to contribute to the advancement of the ecosystem accounts, in either forest ecosystems or ocean areas, by identifying best practices, methods, models, data and tools, looking at both biophysical and monetary aspects, as well as examining policy entry points.

27. Considering the relevance of forest ecosystems in a large number of countries and globally, the SEEA Ecosystem Accounting Technical Committee identified developing methodologies for compiling forest ecosystem accounts as a priority. The working group on forest ecosystems was established in November 2021. It is co-chaired by the Rey Juan Carlos University in Spain and Griffith University in Australia, and has around 20 members from several countries, organizations and academic institutions.

28. The working group established four task teams: on (a) ecosystem extent accounts; (b) ecosystem condition accounts; (c) carbon as an ecosystem service from forest ecosystems; and (d) policy links and users of forest ecosystem accounts. The task team on ecosystem extent is looking at how to treat issues of defining different forest ecosystem types and mapping the extent and changes in extent of forest ecosystems in relation to the International Union for Conservation of Nature global ecosystem typology; the task team on ecosystem condition is looking at reviewing and improving the ARIES for SEEA condition models for forest ecosystems; the task team on carbon as an ecosystem service is developing a note on improving estimates of carbon using ecosystem accounts for climate change policy and testing the methodology in Senegal; and the task team on policy links and users is drafting a paper on how SEEA forest ecosystem accounts can influence policy, and in particular developing a case study linking forest accounts to the European Green Deal.

29. In response to the Commission’s decision at its fifty-second session on SEEA Ocean, as well as countries’ demand in this area, the SEEA Ecosystem Accounting Technical Committee established a working group on ocean accounting in February 2022. The working group is co-chaired by the Australian Bureau of Statistics and the Department of Climate Change, Energy, the Environment and Water of Australia, and has some 25 members from the environmental accounting, scientific and

environmental economics communities from countries, international organizations, NGOs and academia. The working group has been tasked with advancing the development of SEEA Ocean, a methodological document for ocean accounting, covering both coastal and marine areas. The working group is focusing on analysing gaps in current methodological knowledge on ocean accounting and producing technical note(s) that propose approaches and solutions to priority issues.

30. The working group has established three task teams on: (a) policy links; (b) data sources; and (c) the ocean economy. The task team on policy links is examining links between ocean accounts and reporting for policy and decision-making purposes; the task team on data is investigating data sources that will be used as practical solutions to the measurement gaps identified in the research agenda; and the ocean economy task team is developing the statistical framework for ocean accounting-based on the SEEA Central Framework to identify the contribution of the ocean to gross domestic product, expenditure related to ocean and taxes and subsidies and on the SEEA Ecosystem Accounting to identify marine and coastal ecosystem extent, condition and services.

31. The working group on indicators that was established in 2020 during the SEEA Ecosystem Accounting revision process is continuing to provide support for the development of metadata for the SEEA-related headline indicators in the monitoring framework of the post-2020 global biodiversity framework. SEEA-related headline indicators have been proposed for two of the four goals of the global biodiversity framework and several of the targets. As the monitoring framework is further developed and implemented, the working group will continue to provide support for SEEA-related indicators that can be conveyed to the indicators group being established by the Convention on Biological Diversity through selected members of the statistical community.

32. Owing to the spatial nature of ecosystem accounting, special emphasis has been placed on collaboration with the Earth observation community. Earth observation is widely recognized as a major source of information to monitor the extent and condition of ecosystems and services provided. Collaboration between the ecosystem accounting and Earth observation communities was further explored during the Workshop on Earth Observation for Ecosystem Accounting, which was organized between 28 November and 1 December 2022 by the European Space Agency in collaboration with the Division and the Earth Observations for Ecosystem Accounting initiative of the Group on Earth Observations.<sup>13</sup> During the workshop, experts in both Earth observation and ecosystem accounting discussed key challenges that need to be addressed in order to use Earth observation in compiling ecosystem accounts to support national policies in all realms, from terrestrial, freshwater and coastal to marine ecosystems. The workshop helped to reinforce the importance of joining efforts to provide robust and cost-effective Earth observation solutions that help countries to develop a programme of work to develop account-ready data and compile national ecosystem extent, condition and service accounts while building on existing products.

33. An interim technical report, titled “Monetary valuation of ecosystem services and assets for ecosystem accounting”,<sup>14</sup> was released in July 2022 as a joint output of the Natural Capital Accounting and Valuation of Ecosystem Services project and the Mapping and Assessment for Integrated Ecosystem Accounting project. The report is intended to provide a useful starting point for countries compiling monetary accounts, with suggestions on valuation methods and references. The final draft of the report

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<sup>13</sup> See <https://seea.un.org/events/workshop-earth-observation-ecosystem-accounting-eo4ea-2022>.

<sup>14</sup> See <https://seea.un.org/content/monetary-valuation-ecosystem-services-and-assets-ecosystem-accounting>.

was reviewed by members of the SEEA Ecosystem Accounting Technical Committee and finalized by the environmental-economic accounts section of the Division. The report includes practical examples to illustrate the ways in which the different valuation methods for ecosystem services and ecosystem assets have been applied, including results from pilot studies that have been carried out as part of the two projects.

### **C. London Group on Environmental Accounting (led by the Federal Statistical Office of Germany)**

34. Early in 2022, the Bureau of the London Group on Environmental Accounting finalized its work programme for the period 2022–2025.<sup>15</sup> The work programme was developed on the basis of the discussions held on the future of the London Group during its twenty-seventh meeting, in 2021, and the input of the London Group Bureau members, including the Chair of the SEEA Central Framework Technical Committee. The programme of work is driven by the research agenda of the SEEA Central Framework and the SEEA Ecosystem Accounting, the update of the System of National Accounts 2008, the updates of international classifications, and a possible revision of the SEEA Central Framework and subsequent integration with the SEEA Ecosystem Accounting. It covers topics such as improved integration of monetary and physical accounts; classification and boundary issues; input-output calculations for consumption/footprint information; implementation issues for ecosystem condition and services accounts; and monetary valuation of ecosystem services.

35. The twenty-eighth meeting of the London Group on Environmental Accounting was held in September 2022 in Siegburg, Germany,<sup>16</sup> and focused on the measurement of ecosystem services in biophysical and monetary terms; the alignment between the SEEA Central Framework, SEEA Ecosystem Accounting and the System of National Accounts; the integration of environmental activity accounts and the derivation of related indicators; and the calculation of sub-annual indicators for physical flows. During the meeting, the London Group also decided to produce thematic papers on a number of topics, focusing on advancing statistical methodology, taking also into consideration links to policy and international initiatives. Some of the proposed topics for the thematic papers include the potential inclusion of atmosphere as an asset; the treatment of emission permits; the derivation of indicators from the SEEA; and the use of seasonal adjustments for environmental reporting. The twenty-ninth meeting of the London Group is scheduled to be held in Pretoria, South Africa, in the fall of 2023.

### **IV. Area C: development of databases (led by the Organisation for Economic Co-operation and Development)**

36. The objective of area C is to establish a set of global SEEA databases to provide users with SEEA-compliant data sets for integrated policy development and analysis, including for the Sustainable Development Goals. This is done by coordinating support for the development of SEEA databases at the international level, by facilitating the exchange of related data among international organizations and by providing direct access to existing SEEA databases through the websites of international organizations and, ultimately, through the Division's SEEA website. Over the past year, the working group on the development of databases continued to make progress on priority action, as outlined in the road map of the Committee of

<sup>15</sup> See [https://seea.un.org/sites/seea.un.org/files/20220516\\_work\\_programme\\_final.pdf](https://seea.un.org/sites/seea.un.org/files/20220516_work_programme_final.pdf).

<sup>16</sup> See <https://seea.un.org/events/london-group-environmental-accounting-28th-meeting>.

Experts on Environmental-Economic Accounting for the five priority accounts (air emissions, energy, material flows, land and water), as well as for other emerging international SEEA compilations. The priority accounts were identified at the Committee's eleventh meeting, in 2016.

#### *Global databases*

37. Work to expand the current coverage of the international compilation of air emission and energy accounts was advanced during 2022 with the completion of the development and testing of global questionnaires. The questionnaires, developed by the Division and OECD, contain tiered templates, which can be used to by countries with varying levels of data availability. The tiered templates are aligned in scope and terminology with the Statistical Data and Metadata Exchange for SEEA descriptions and are consistent with the data collections of Eurostat. A global data collection on energy and air emission accounts is to be launched in 2023. In addition, several international organizations have formed a partnership to work together to develop quarterly greenhouse gas emissions statistics based on SEEA. Regional aggregates are being made available on a quarterly basis by Eurostat, the International Monetary Fund and OECD.

38. The working group has organized a technical workshop, co-led by the Division and the Food and Agriculture Organization of the United Nations, to discuss compiling a global database with SEEA land cover accounts. The aim is to collaborate across international organizations and countries to set up a data collection mechanism for national land cover accounts.

39. UNEP, through its International Resource Panel, has been producing global databases for material flow accounts. The new global material flow accounts database contains figures for more than 200 countries for the period 1970–2019. In 2022, UNEP developed a global material flow questionnaire for reporting on Sustainable Development Goal indicators. The questionnaire was sent to countries with pre-filled estimates from the International Resource Panel methodology and database. Work also continues on the development of an internationally harmonized methodology for estimating demand-based material flows (i.e., footprints), led by OECD in cooperation with Eurostat and UNEP. A guidance document for practitioners and a road map for establishing an internationally coordinated framework for measuring demand-based material flows are being developed.

40. Core elements from the water accounts can be derived from joint water questionnaires, including the Division/UNEP Questionnaire on Environment Statistics and the OECD/Eurostat Joint Questionnaire on the State of the Environment, which are submitted by national authorities. Pilot work is planned to populate simple core water accounts from these questionnaires, and the results and recommendations from this ongoing work will be submitted for further discussion by the Committee in 2023.

#### *Artificial Intelligence for Environment and Sustainability for the System of Environmental-Economic Accounting*

41. In addition to work on the SEEA Central Framework priority accounts, work is also being undertaken on expanding SEEA Ecosystem Accounting data and models. In April 2022, a letter of cooperation was signed among the United States Geological Survey, the Division, the Basque Centre for Climate Change and the Donostia International Physics Centre to collaborate on and support the sector hub of ARIES for SEEA, in support of the United Nations Global Platform. The sector hub is envisaged to be globally recognized as a collaborative and action-oriented knowledge, technology and innovation hub, which will bring together innovative

technology and data science methods in the use of artificial intelligence and big data and will provide a much-needed platform to further the interoperability of data and models in the domain of environmental-economic accounting and sustainability. The Basque Centre manages the sector hub, which has a physical presence in Leioa, Spain.

42. Some of the main activities undertaken in 2022 included direct integration of Earth observation data sets for temporal sequencing; several capacity-building webinars and an in-person training event organized by UNEP, the Division, the United Nations Development Programme, the Basque Centre for Climate Change, the secretariat of the Gaborone Declaration for Sustainability in Africa and the Regional Hub of the United Nations Global Platform in Rwanda for six African countries; and technical support on ecosystem accounts compilation to several countries. There have been regular releases of the ARIES for SEEA application, resulting in improved models and functionalities. The number of users of the application has increased from approximately 2,000 to 3,300. An advisory committee for the sector hub is being set up, comprising selected senior officials from national statistical offices and other government agencies, space agencies and academia, to advise on the sector hub's strategic direction, vision and programme of work. Establishing a closer link between the work of the sector hub and the regional hubs and the Committee of Experts on Big Data and Data Science for Official Statistics task teams will be a priority for 2023.

## **V. Area D: implementation and statistical capacity-building (led by the Kenya National Bureau of Statistics and the Statistical Institute for Asia and the Pacific)**

43. The working group on implementation and statistical capacity-building has identified several areas of focus for its work programme and developed a list of priorities for the coming year. These are centred around the following three main activities: (a) coordination of capacity-building activities and the sharing of best practices; (b) an update of the implementation guide and diagnostic tool; and (c) the Global Assessment of Environmental Economic Accounting and Supporting Statistics.

### *Coordination of capacity-building activities*

44. The working group, with members from countries, the regional commissions and other United Nations agencies, has the objective of coordinating capacity development activities at the global and regional levels, as well as ensuring that lessons learned from the various experiences with SEEA implementation in countries are shared widely. This involves maintaining and updating a list of active projects on SEEA implementation in countries to avoid duplication and ensure the efficient use of resources. The work of the group also includes identifying possible funding sources that could be accessed for SEEA implementation.

45. Making the case for SEEA accounts within national Governments and linking its implementation to policy priorities is key to mainstreaming the SEEA into decision-making. The group can facilitate targeted seminars that build use cases for the accounts and presentations of SEEA policy applications in thematic policy forums.

## **Updating of the implementation guide and diagnostic tool**

46. The SEEA implementation guide and diagnostic tool was developed in 2014 and provides a generalized approach to implementing the SEEA. Since then, the number of countries implementing the SEEA has increased dramatically and is now over 90 countries. Further methodologies and tools that support implementation have increased substantially, and the SEEA Ecosystem Accounting and its associated Implementation Strategy was adopted by the Commission at its fifty-second and fifty-third sessions, respectively. These developments warrant an update of the SEEA implementation guide and diagnostic tool to reflect current best practices and approaches to implementing the SEEA.

## **Select activities and projects on System of Environmental-Economic Accounting implementation**

47. Many SEEA implementation activities and projects are under way. Outlined below are some of these activities. The Division is leading a three-year project funded by the twelfth tranche of the United Nations Development Account. The project supports countries on SEEA implementation and its use for evidence-based policymaking in Asia and Africa, namely, Bhutan, Kenya, Mozambique, the Philippines and Senegal. The Division is providing support to the project countries in building institutional frameworks in support of SEEA implementation, compiling pilot accounts and promoting the accounts in support of policymaking and the Sustainable Development Goals. Over the past year, the Division worked with the project countries to organize several online training sessions and in-person technical workshops. The Division is working closely with the relevant regional commissions, international organizations and NGOs to carry out the project.

48. To help countries to build capacity in the recently adopted SEEA Ecosystem Accounting, the Division and the Statistical Institute for Asia and the Pacific developed a new e-learning course on the SEEA Ecosystem Accounting, which replaces an outdated course on ecosystem accounting. The course is available in English and will be available in French and Russian early in 2023. In addition, the Division developed detailed e-learning courses on valuation and scenario analysis as part of the Natural Capital Accounting and Valuation of Ecosystem Services project. The Division has continued to translate existing e-learning courses; in 2022, the Division made the e-learning course “SEEA for Policy Makers” available in French and Spanish, in addition to English.

49. The World Bank Global Program on Sustainability, which builds on the World Bank Wealth Accounting and Valuation of Ecosystem Services programme, is the Bank’s umbrella programme on natural capital, ecosystem services and the economics of sustainability. The Global Program on Sustainability is intended to strengthen the production and use of quality data (economic and financial) on natural capital and ecosystem services, to inform government and financial market decisions. Over the years, the Wealth Accounting and Valuation of Ecosystem Services programme and the Global Program on Sustainability have supported more than 30 countries to produce data and analytics (including SEEA accounts) on natural capital assets and ecosystem services, to strengthen the capacity to use the accounts for policy purposes and to institutionalize processes of production and use of the accounts. The Division is partnering with the Global Program on Sustainability to administer technical assistance for compiling the accounts in several of these countries, in particular Ethiopia, Ghana, Nigeria and Turkey. The Division’s work will complement the Bank’s focus on strengthening the use of data on natural capital and ecosystem services in policy analysis and dialogue for enhanced engagement of private and

public sector actors in these countries. At the global level, the Global Program on Sustainability periodically carries out a comprehensive evaluation of wealth accounts for more than 140 countries (including natural, physical and human capital). The fifth issue of the series, entitled “The changing wealth of nations”, is under production and is intended to expand the scope and theoretical depth of wealth analysis. The Division is supporting the expansion of “The changing wealth of nations” to include carbon.

50. To support implementation, numerous webinars, workshops and events were organized. OECD and ECE organized its seventh joint annual seminar on the implementation of SEEA, in March 2022, which focused on the implementation of ecosystem accounts, new developments in international standards and classifications such as the System of National Accounts, and measurement of the circular economy. The Economic Commission for Latin America and the Caribbean and the Division organized a virtual course on the SEEA Ecosystem Accounting that was held in May 2022.<sup>17</sup> The Natural Capital Accounting Community of Practice Africa<sup>18</sup> continued to host regular webinars, providing opportunities for countries of the region and international agencies to share experiences. Several e-learning courses were organized by the Statistical Institute for Asia and the Pacific during the course of the year, including on the SEEA Ecosystem Accounting, material flow accounts, the SEEA Central Framework, energy accounts and using SEEA for climate change indicators.

## **Global Assessment of Environmental-Economic Accounting and Supporting Statistics**

51. The Global Assessment serves to gain a better understanding of national SEEA implementation, including institutional and funding arrangements, countries’ priorities and future plans for implementing accounts, technical assistance received and provided, and the use of the accounts. The review helps to assess the support required by countries for implementing the SEEA. The Global Assessment also supports the monitoring of Sustainable Development Goal targets 12.b and 15.9 through two indicators: (a) 12.b.1, in terms of the implementation of standard accounting tools to monitor the economic and environmental aspects of sustainable tourism, through implementation of the relevant SEEA tables; and (b) 15.9.1, in terms of the integration of ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts, through implementation of the SEEA.

52. As agreed by the Committee during its sixteenth meeting, in 2021, the Global Assessment is carried out every year as either a benchmark assessment or an abbreviated assessment. Benchmark assessments collect detailed information from countries on the status of SEEA implementation and are conducted every three years. The abbreviated Global Assessment is conducted in between benchmark years and is a shorter version of the benchmark assessment. The abbreviated Global Assessment was sent to countries in September 2022 and the results will be submitted to the Commission as a background document.

<sup>17</sup> See <https://seea.un.org/events/curso-de%2%A0-introducci%C3%B3n%2%A0%2%A0la-contabilidad-de-ecosistemas-del-sistema-de-contabilidad-ambiental>.

<sup>18</sup> See <https://seea.un.org/content/africa-community-practice>.

## VI. Area E: business accounting (led by the National Institute of Statistics and Geography of Mexico)

53. The working group on business accounting is moving forward with its road map for alignment of the SEEA with private-sector natural capital accounting<sup>19</sup> and finalized a detailed programme of work for 2022–2023.<sup>20</sup> The working group will focus on three main objectives: (a) alignment of private-sector methodologies and standards with the SEEA; (b) increased collaboration and awareness-raising between statistical and business communities; and (c) greater exchange and use of high-quality interoperable data between business and national statistical offices. Given its limited resources, the working group conducted an initial assessment of major initiatives and groups to prioritize specific private sector methodologies and standards for alignment. Based upon this initial assessment, the working group will focus on engaging with initiatives and groups that are currently releasing methodologies and standards for review and that are likely to have a large impact in the business accounting space. These groups and initiatives include the International Sustainability Standards Board, the Task Force on Nature-related Financial Disclosures, the Corporate Sustainability Reporting Directive of the European Financial Reporting Advisory Group and the Global Reporting Initiative standard on biodiversity.

54. As part of the working group's programme, the Statistics Division currently serves as a knowledge partner of the Task Force on Nature-related Financial Disclosures. As a knowledge partner, the Division has reviewed multiple beta releases of the risk and opportunity management and disclosure framework of the Task Force on Nature-related Financial Disclosures. The Division's reviews have focused on promoting the inclusion and use of the concepts and definitions used by the SEEA. The Division has also continued to collaborate with the Capitals Coalition over the past year, providing feedback on the Align project, which aims to support businesses, financial institutions and other stakeholders in developing standardized natural capital accounting practices.

## VII. Action to be taken by the Statistical Commission

55. **The Statistical Commission is invited to express its views on:**

(a) **The engagement of national statistical offices in the post-2020 global biodiversity framework and the development and implementation of the monitoring framework (see sect. II);**

(b) **The involvement of the Committee in the new Group of 20 Data Gaps Initiative, particularly on climate change recommendations (see sect. II);**

(c) **The progress made in global data collection and databases for both the System of Environmental-Economic Accounting (SEEA) Central Framework and SEEA Ecosystem Accounting (see sect. IV);**

(d) **The progress made in advancing the research agenda and the development of methods to support the implementation of the SEEA Ecosystem Accounting, in particular of forest ecosystem accounts and ocean accounting and the focus on engagement with the Earth observation community (see sect. III);**

(e) **The Committee's engagement in the update of the System of National Accounts 2008 as well as the International Standard Industry Classification, the Central Product Classification, the Standard International Energy Product**

<sup>19</sup> See [https://seea.un.org/sites/seea.un.org/files/images/business\\_accounting\\_6.docx](https://seea.un.org/sites/seea.un.org/files/images/business_accounting_6.docx).

<sup>20</sup> See [https://seea.un.org/sites/seea.un.org/files/area\\_e\\_programme\\_of\\_work\\_2022\\_v2.pdf](https://seea.un.org/sites/seea.un.org/files/area_e_programme_of_work_2022_v2.pdf).



**Classification, the Classification of the Functions of Government and the Classification of Environmental Functions updates (see sect. III);**

**(f) The use of partnerships and regional collaboration to make advances in global implementation of the SEEA (see sect. V);**

**(g) The Committee's engagement with business accounting initiatives and groups relevant to natural capital accounting (see sect. VI);**

**(h) The progress made in country testing and finalizing the statistical framework for measuring the sustainability of tourism, with a view to its presentation to the Commission (see sect. II).**

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