55th Meeting of the European Statistical System Committee

Luxembourg

8 and 9 February 2024

Item 3 of the agenda

European Strategy for environmental accounts 2024-2028

EXECUTIVE SUMMARY

1. RECOMMENDATION FOR ACTION

The ESS Committee is invited to endorse the European strategy for environmental accounts for the period 2024 – 2028, and the corresponding implementation plan.

The ESS Committee is also invited to take note of the final implementation of the European strategy for environmental accounts for the period 2019 – 2023.

2. BACKGROUND AND BRIEF HISTORY

There are 5-yearly European strategies for environmental accounts since 2008. Because the community of European environmental accountants is small, and there are so many development requests, it is helpful to have a European strategy that helps us to focus our efforts in a coordinated way. Those strategies since 2008 have been instrumental to develop European environmental accounts, mainstream them into official statistics and ensure their status to monitor sustainability policies.

As the current ESEA for the period 2019-2023 ends, a new ESEA for 2024-2028 is proposed. The ESEA 2024-2028 sets priorities and objectives to improve quality and communication for environmental accounts and to further evaluate and develop them and their uses in Europe. The strategy is accompanied by a list of activities to implement the objectives. This is a reaction to the European Court of Auditors recommendation in the Special Report 16/2019 on European environmental accounts about a comprehensive action plan to implement the strategy.

The proposed ESEA 2024 is found in Annex 1. This draft has been prepared in consultations with the corresponding working groups, it has been discussed and endorsed by DIMESA and by the Partnership group.

There are five strategic objectives, as follows:

1. Improve the communication and use of existing environmental accounts modules. This is about ensuring that the environmental accounts are informative for policy purposes and providing for clear information in the Eurostat and NSIs websites. This objective may also include more timely data, visualisations and presentations, etc. It also includes further use of indicators based on environmental accounts. It may also include raising awareness and informing of data already available
2. Prepare implementation of the 3 new modules in Commission proposal COM/2022/329 final (forests, ecosystems, environmental subsidies). This includes having voluntary data collections with new questionnaires and guidelines, preparing validation rules agreed in the working group, etc.
3. Cooperate with other data producers. This concerns both cooperation with parts of the statistical system (such as social statistics, to develop broader measures of sustainability) and with other producers outside the statistical system (such as environmental agencies, the research community, ministries). It also includes cooperation with the international statistical community e.g. for the review of the SNA
4. Explore new data sources. Those sources are necessary to remain relevant and can deliver efficiencies in data production to be able to produce more with the existing resources
5. Establish a research agenda for European environmental accounts.

The accompanying action plan is found in Annex 1. It consists of 18 actions addressing the implementation of all the ESEA objectives, as follows:

Objective 1 improve communication: 6 actions

Objective 2 prepare implementation: 4 actions

Objective 3 cooperation with other data producers: 5 actions

Objective 4 explore new data sources: 2 actions

Objective 5 establish a research agenda: 1 action

Finally, as ESEA 2019 comes to an end, this is also the time to assess its implementation and achievements. The DIMESA-approved action plan in 2021 is used for that purpose. This is found in Annex 2. The action plan consisted of 19 actions. Their implementation was as follows:

- 14 activities fully achieved: improve timeliness, assure quality of transmissions, footprints estimates, enhance communication (footprints, early estimates), identify key policy areas for the accounts, amendment Regulation (EU) 691/2011, sustainable finance (CMFB task force, green bonds, follow up taxonomy), develop new areas (ReMEA, water, PEDS), training, share experiences in working group, provide compilation tools, grants, contribute to global standards, support implementation of SEEA outside the EU
- 3 activities partially achieved: maintain classifications (the update of classifications CEPA&CReMA will be achieved in March 2024 with the adoption by UNSC of the new classification on environmental purposes), develop sound technical solutions, maintain Eurostat handbooks (pending handbook on physical energy flow accounts)
- 2 activities not achieved: produce longer time series, improve dissemination accounts with clearer links across modules. The latter is carried forward to the ESEA 2024.

3. POLICY CONTEXT

The European Union is committed to tackling climate and environmental-related challenges. Europe aims to be the first climate-neutral continent by becoming a modern, resource-efficient economy which leaves no one behind. The European Green Deal, the EU growth strategy, is boosting EU implementation of the 2030 Agenda and the UN Sustainable Development Goals. The 8th Environment Action Programme is the governance tool to implement the environmental objectives of the European Green Deal at all levels of governance: EU, Member States, regions and cities, in a timeframe of 2030 and within a 2050 vision of living well within planetary boundaries.

Environmental economic accounts, or environmental accounts for short, are a powerful, multipurpose information framework addressing the sustainability aspects of the economic model.

4. CONSEQUENCES FOR NATIONAL STATISTICAL INSTITUTES

The draft ESEA is in line with the relevant objectives of the European Statistical Programme. The ESEA for 2024-2028 is a continuation of ESS work in the previous decades. Environmental accounts pivot around the reporting obligations in Regulation (EU) 691/2011.

5. OUTSTANDING ISSUES

It is noted that the amendment for Regulation (EU) 691/2011 on European environmental accounts is currently in trilogues. The negotiations by the co-legislators include additional possible European environmental data and specific reports requested by the Parliament. It is not expected that the overall objectives of ESEA 2024 will be affected, because the topics discussed in the trilogue fall under the existing objectives in the ESEA. Depending on the outcome of the political negotiations,

the list of actions for ESEA 2024 may need to be adjusted or fine-tuned. This can be followed up by DIMESA.

6. RISK ASSESSMENT

The risks related to data production are low because data are established in Regulation (EU) 691/2011. ESEA also encompasses activities without legal basis, in particular about communication of the existing data and development of the research agenda. These are normal ESS activities.

The strategy will allow for flexibility and adaption to the new circumstances. DIMESA will supervise the implementation of ESEA and re-steer the activities if necessary.

7. NEXT STEPS

Implementation of the ESEA will start immediately. DIMESA will be charged to supervise implementation. Eurostat will report progress to DIMESA two years into the period covered by the strategy (2026) and again at the end of the strategy (2028). If necessary, there may be additional reporting to DIMESA in between those years. DIMESA can provide guidance to adjust priorities and adapt the strategy. In such case the Strategy document will be updated for the ESS Committee. The technical work in the implementation plan will be developed in the respective working groups, under the supervision of DIMESA.

The European Strategy for environmental accounts (ESEA) for the period 2024-2028 sets strategic drive, direction for development of environmental accounts, level of ambition, and objectives for the European environmental accounts in the next 5 years. This is a strategy to coordinate the producers of European environmental accounts and to inform stakeholders of the developments planned over the period 2024-2028.

This new strategy ESEA 2024 builds on the previous strategies adopted in 2003, 2008, 2014 and 2019. Taken together as a continuous body, those strategies have been instrumental to the enormous advancement of environmental accounting in Europe during the last 20 years, whereas EU work stated in the 90s, around 30 years ago. Thanks to the ESEA and its implemented actions, Europe is at the forefront of environmental accounting worldwide and has been able to contribute to the international development coordinated by the UN Statistical Division.

The new ESEA 2024 proposes a strategic and forward-looking direction for the work until 2028. This strategy is aspirational but realistic. It is flexible to take account of uncertainties in the next years in important areas, e.g. following to the mid-term review of the 8th Environment Action Programme and the priorities of the future Commission 2024-2028.

The draft ESEA is in line with the relevant objectives of the European Statistical Programme.

The ultimate goal of the ESEA 2024 is that the environmental accounts meet the user needs for high quality data and that they are well-known and valued. To achieve these goals, five key objectives are proposed, as follows:

	Objectives
1	Improve the communication and use of existing environmental accounts modules
2	Prepare implementation of the three new modules: forests, ecosystems, environmental subsidies
3	Cooperate with other data producers
4	Explore new data sources
5	Establish a research agenda

The EU strategy does not prevent individual countries or groups of countries from doing more depending on their national circumstances, policy needs and resources.

The strategy is accompanied by an action plan. This is a list of activities to implement and achieve the strategy objectives. The activities in the action plan are voluntary, except whenever there is an underlying legal obligation such as reporting under Regulation (EU) 691/2011. All activities in the action plan are meant to be collectively performed by the European Statistical System; however not all national statistical offices need to engage in all activities. Some activities are for Eurostat only. There are no priorities among those activities.

VALUE ADDED OF ENVIRONMENTAL ACCOUNTING

The European Union is committed to tackling climate and environmental-related challenges[1].

[1] https://ec.europa.eu/info/sites/info/files/european-green-deal-communication_en.pdf

Europe aims to be the first climate-neutral continent by becoming a modern, resource-efficient economy which leaves no one behind. The European Green Deal, the EU growth strategy, is boosting EU implementation of the 2030 Agenda and the UN Sustainable Development Goals. The 8th Environment Action Programme is the governance tool to implement the environmental objectives of the European Green Deal at all levels of governance: EU, Member States, regions and cities, in a timeframe of 2030 and within a 2050 vision of living well within planetary boundaries.

Environmental economic accounts, or environmental accounts for short, are a powerful, multipurpose information framework addressing the sustainability aspects of the economic model. The European environmental accounts are established in Regulation (EU) No 691/2011, which requires Member States to collect and transmit to Eurostat accounting data about:

- Air emissions accounts (greenhouse gases and air pollutants)
- Economy-wide material flow accounts
- Environmental taxes
- Environmental protection expenditure accounts (including investments and consumption)
- Environmental goods and services accounts
- Physical energy flow accounts

Furthermore, the Commission proposal amending the Regulation COM/2022/329 final, currently in ordinary legislative procedure, would introduce new environmental economic accounts modules as regards:

- Forest accounts
- Environmental subsidies and similar transfers
- Ecosystem accounts

European environmental accounts are based on the United Nations System of Environmental-Economic Accounting Central Framework (SEEA CF) and SEEA Ecosystem Accounts.

Environmental accounts provide more insight into the sustainability aspects of the economic behaviour of producers, consumers and government. The environmental accounts allow integrating economic and environmental aspects to complete the macro-economic picture.

The key feature of environmental accounts is *integration*. This concerns both the integration of environmental and economic aspects, and the integration into a consistent economic accounting system of a range of key thematic environmental aspects of the green economy such as i) energy, taxation and air emissions; ii) material extractions and waste; iii) government and business expenditure and investment; iv) ecosystems. This integration fits nicely in the holistic paradigm of the European Green Deal. The accounting approach is useful because:

- it reuses available data and thus allows new information to be produced with limited administrative burden on businesses and citizens;
- it enables high quality information to be produced by combining and integrating source data into robust estimates.

At European level, the *European* environmental accounts underpin the supranational dimension of the environmental issues and provide a systematic approach and coverage across Member States and environmental topics that enable policy assessment and comparisons across Member States.

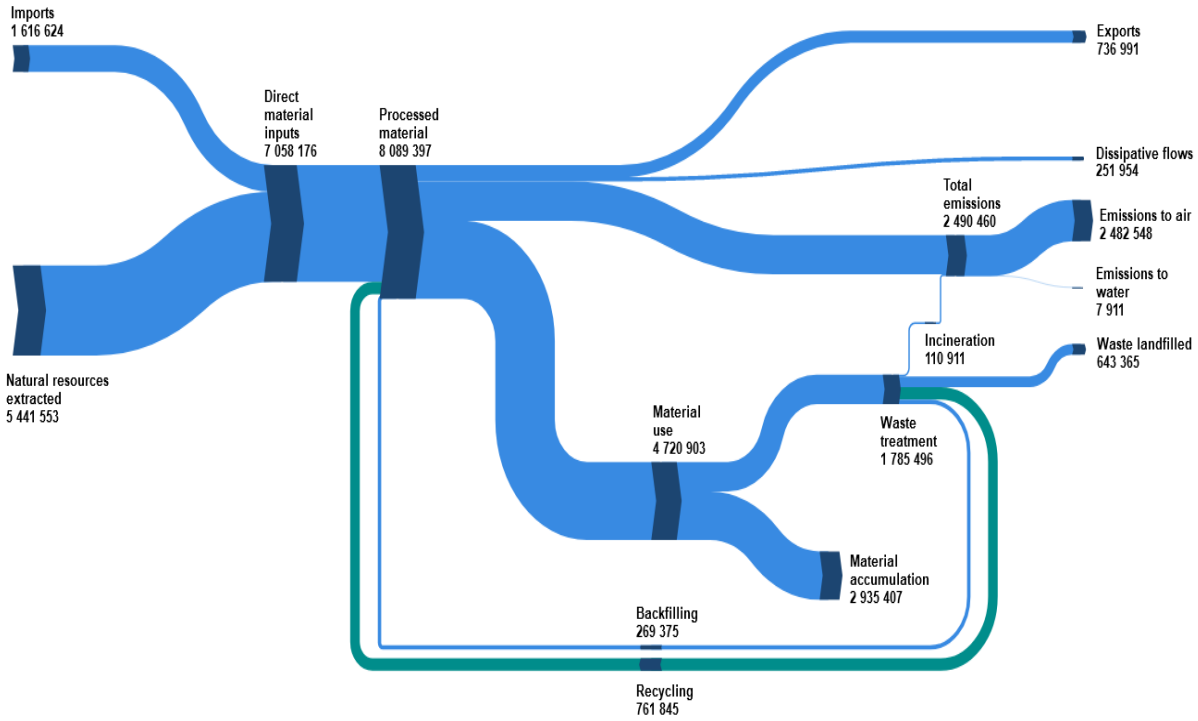
The figure below is one example of how environmental accounts integrate, complement and complete other statistics. This figure shows the flows of materials in the EU, including the circular economy flows. The Sankey diagram is based on environmental accounts, economy-wide material flow accounts, combined with statistics of waste and external trade. Together, those statistics provide a complete picture that would otherwise not be possible, about extractions of material resources, international trade, generation of solid waste, recycle and recovery of materials, accumulation of products in society (e.g. stock of buildings), emissions to air and water, and waste

not recovered. This figure is taken from the Eurostat website and several Member States have developed their own, similar Sankey diagrams too.

This integrative approach is an example in several ways:

- It is a new statistical product, based on environmental accounts, developed to answer a policy question;
- It integrates environmental accounts with non-accounting information, to deliver an improved picture;
- The integration improves the quality of the estimates that would be obtained as independent, partial information sets;
- Integration allows to derive indirect estimates of flows not observable (measurable) or very hard to observe.

Figure: Sankey diagram of material flows in the EU, 2021



PROGRESS ACHIEVED WITH THE ESEA 2019-2023

The European strategy for the period 2019-2023, provided the necessary focus to deliver progress. The main achievements are the following:

Improved timeliness of estimates and other technical updates to keep relevance. The Commission adopted Commission Delegated Regulation (EU) 2022/125 of 19 November 2021 amending Annexes I to V to Regulation (EU) No 691/2011. This Delegated Regulation updates the technical specifications of 5 of the 6 existing modules, listed in the previous section, with a view to produce faster information (shorter transmission deadlines) and to update the lists of characteristics. In particular, there are additional breakdowns of CO2 taxes, additional environmental purpose breakdowns for the environmental sector and environmental expenditure, information about the total environmental sector (as opposed to the market part of the environmental sector), updates of lists of material flows and air emission gases, simplifying reporting requirements on the economic industries of the environmental sector and imports & exports of materials.

Timeliness of the estimates was also improved with the release of quarterly estimates of greenhouse

gas emissions. The data validation takes shorter time every year and data are published a few weeks earlier.

There are more and better estimates of carbon footprints and material footprints.

Eurostat launched a voluntary data collection on potentially environmentally damaging subsidies in late 2022. The guidance notes will be revised for the second voluntary data collection to be launched in late 2023. Voluntary variables on resource management have been added in EPEA.

Quality is reinforced with validation rules adopted by Member States and Eurostat in the working groups. Eurostat applies those rules in its validation of national transmissions. The questionnaires are compliant with the international transmission standard SDMX. There are global SEEA Data system structures necessary for global databases.

Classifications are maintained. PRODCOM and NACE Rev.2.1 include extra detail useful for the environmental accounts. The multi-year work to update classifications CEPA and CReMA with a new overhauled international classification of environmental functions is at UN level in the process of finalisation for UNSC adoption.

Other sound technical solutions on methodological areas further continued, in particular about the allocation of road transport to NACE/households, the update of the indicative compendium for EGSS, resident adjustments for international transport, as well as LULUCF reporting.

As regards use for decision making, indicators based on environmental accounts are increasingly used in monitoring frameworks, including 6 indicators in the Eurostat report for SDGs, 4 indicators in the 8EAP monitoring framework and 5 indicators in the upcoming, revised circular economy monitoring framework.

There is preparatory work for more European environmental accounts. On 11 July 2022 the Commission adopted the proposal for a Regulation of the European Parliament and of the Council (COM(2022)329)[2] amending Regulation (EU) 691/2011 as regards introducing new environmental accounts modules on the topics: forest accounts, environmental subsidies and similar transfers accounts, ecosystem accounts. In particular, there has been a tremendous progress on ecosystem accounts, before, during and after the adoption of the SEEA ecosystem accounts by the UN Statistical Commission in 2021. A Eurostat task force is developing guidance notes for ecosystem extent, condition and services. The EU project INCA[3] continues with the maintenance of data for the EU.

Work on environmental accounting has also further progressed at international level. Eurostat and Member States contribute to the implementation of SEEA in the UNECE region, and to the development of global SEEA databases, in particular with OECD, UN Statistical Division, UN Environment and the International Resource Panel. The strategy has contributed to world-wide initiatives related to resource efficiency, green economy/green growth/green jobs, natural capital and the SDGs. European countries and Eurostat have had a leading role in the implementation of SEEA and the development of its research agendas, also through the London Group on environmental accounting.

A balance of the implementation of the action plan for ESEA 2019-2023 is presented in Annex 3. The action plan consisted of 19 actions. Overall, the implementation was as follows:

- 14 activities fully achieved: improve timeliness, assure quality of transmissions, footprints estimates, enhance communication (footprints, early estimates), identify key policy areas for the accounts, amendment Regulation (EU) 691/2011, sustainable finance (CMFB task

[2] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2022:329:FIN

[3] **Integrated system of Natural Capital and ecosystem services Accounting, see project description and final report phase 1.**

force, green bonds, follow up taxonomy), develop new areas (ReMEA, water, PEDS), training, share experiences in working group, provide compilation tools, grants, contribute to global standards, support implementation of SEEA outside the EU

- 3 activities partially achieved: maintain classifications (the update of classifications CEPA&CReMA will be achieved in March 2024 with the adoption by UNSC of the new classification on environmental purposes), develop sound technical solutions, maintain Eurostat handbooks (pending handbook on physical energy flow accounts)
- 2 activities not achieved: produce longer time series, improve dissemination accounts with clearer links across modules. The latter is carried forward to the ESEA 2024.

MAIN EU POLICY NEEDS

Environmental accounts have developed fast in recent years in line with the policy need for data on the interlinkages between the economy and the environment. It is essential that environmental accounts have the necessary flexibility to adapt.

The European Green Deal is the Commission growth strategy boosting climate neutrality and resource efficiency. In view of meeting these ambitious targets, and measuring what matters, it is important to measure systemic changes in the economic production and in terms of society consumption. Therefore, there is an increasing need to measure the pressures of the economic sectors in terms of use of materials and energy used, emissions to air, water and land. It is also important to monitor the monetary variables associated to the different economic sectors (e.g. market-based instruments like environmental taxes and environmental positive and harmful subsidies).

These accounting areas are also important for measuring progress towards the objectives of the 8th Environmental Action Programme[4], in particular the 2030 objectives to diminish environmental and climate pressures related to EU production and consumption, the enabling conditions and the 2050 vision of living well within the planetary boundaries.

The EU is also committed to the 2030 agenda and meeting the EU SDGs. The Commission annually reports on progress towards the SDGs in the European context with the EU SDG indicators, some of these rely on environmental accounts. There is scope to develop new SDG indicators, when more modules are available, in particular on ecosystem accounts, and forest accounts and to measure sustainability of sectors.

Setting and reporting on ecosystem accounts will allow to better monitor the implementation and progress of the objectives of the Biodiversity strategy[5], the Nature Restoration Law[6] and the new Pollinators initiative[7]. In addition forest accounts and land accounts can increase the knowledge needed for the EU Forest strategy[8] for 2030 and the EU Soil Strategy[9] for 2030 and the future Soil Health Law.

[4] 8th Environment Action Programme (europa.eu)

[5] https://environment.ec.europa.eu/strategy/biodiversity-strategy-2030_en

[6] https://environment.ec.europa.eu/topics/nature-and-biodiversity/nature-restoration-law_en

[7] https://environment.ec.europa.eu/topics/nature-and-biodiversity/pollinators_en

[8] https://commission.europa.eu/document/cf3294e1-8358-4c93-8de4-3e1503b95201_en

[9] EU soil strategy for 2030 (europa.eu)

WORK FOR THE PERIOD 2024-2028

ESEA proposes five strategic objectives for the period 2024 to 2028 as follows:

	Objectives
1	Improve the communication and use of existing environmental accounts modules
2	Prepare implementation of the three new modules: forests, ecosystems, environmental subsidies.
3	Cooperate with other data producers
4	Explore new data sources
5	Establish a research agenda

The next sub-sections further explain and develop each one of the five objectives. The list of activities for implementation is found in Annex 1.

Objective 1: Improve the communication and use of existing environmental accounts modules

The European environmental accounts modules are successfully established as European statistics with high quality. However, there is untapped potential for use by institutional users, and common users. This is for several reasons.

First, it is necessary to ensure that the environmental accounts are informative for policy purposes and provide clear information in the Eurostat and NSIs websites. This objective may also be achieved with more timely data, visualisations and presentations, etc. This objective also includes further use of indicators based on environmental accounts. It may also include raising awareness and informing of data already available.

Certain data improvements may make the data more useful to users. In particular, more timely data can improve the use of the environmental accounts data, and furthermore provide a leading edge compared to other environmental information which are less timely.

Secondly, users have specific information needs, and frequently environmental accounts do not have exactly that answer but provide for something similar. In those cases, environmental accounts only provide a half-way solution. Environmental accounts could be considered statistical infrastructure, readily available, to quickly develop 'last mile solutions' for the users whenever a new request arrives. This facilitates a faster and less costly statistical response to new data needs.

This means that statisticians must develop solutions for the 'last mile' based on the environmental accounts infrastructure. For instance this may be a new indicator. Past examples are the indicator 'circular material use rate' and more recently 'effective carbon rates'. More of such indicators are needed.

Other 'last mile solutions' regard the application of the accounts to policy areas such as climate change mitigation, circular economy, Bioeconomy, etc. This is not straightforward because the classifications used in environmental accounts do not have breakdowns for climate change, circular economy, etc.

A final area of great importance is the integration of environmental accounts. This is where the accounts have a leading advantage compared to other information sources. One example of integration is the Sankey diagram in the previous section. Environmental footprints combine environmental accounts with input-output modelling. Indicators of productivity/intensity/decoupling combine metrics of economic activity with use of natural resources. Very important is the integration of physical and monetary environmental accounts; one

example is effective carbon rates, combining ETEA and AEA. Such integration can be done responding to specific policy needs in ad-hoc applications. There are also potential integrations of environmental accounts with other statistical sources, such as surveys, for instance social surveys, to create indicators on social aspects of the green transition, or with energy data, or with business data. For example, the 'Statistics on the European Green Deal' includes an indicator 'Greenhouse gas emissions intensity of employment' to understand which countries face bigger challenges due to the transition towards climate neutrality.

More such solutions are needed for new policy applications, for instance to communicate the environmental pressures from key economic sectors and the taxes/environmental protection expenditures paid by the same sectors.

Solutions for users must be disseminated in clear and accessible dissemination products using simple terms and language, sparing non-expert users of the technicalities of the accounts. Analysing and interpreting the results is essential. Visual tools and interactive tools for dissemination can make a big difference to make the accounts understandable. A few priority topics for policymakers must be identified as to develop combined analyses e.g. using data from different accounts in indicators and modelling together.

Finally, in few cases, there may not be yet sufficient awareness about the environmental accounts and how they can be used. Raising awareness about the results to common users would help. This means that ESS members reach out to national users, Eurostat reaches out to EU users, and that users looking for accounts data for new purposes can easily ask for them.

Exchanges of best practices in the working group are possible, in particular exploring how Member States use the environmental accounts to design and monitor economic, financial and environmental policies.

Objective 2: Prepare implementation of the three new modules: forests, ecosystems, environmental subsidies

This is about transforming the voluntary data collections (for forest accounts and environmental subsidies) into mandatory collections, preparation of handbooks and methodologies, etc. In the case of the ecosystem accounts, there is no voluntary data collection yet and thus more work needs to be done. A running task force can continue developing methodologies for ecosystem accounts. Eurostat will continue offering grants and ESTP courses. Validation rules and procedures must be established, etc.

Objective 3: Cooperate with other data producers

This concerns both cooperation with other parts of the statistical system (such as energy statistics, or social statistics, with a view to develop measures of sustainability broader than environmental sustainability) and with other producers outside the statistical system (such as environmental agencies, the research community or ministries). Cooperation with national accounts is of importance, given the relation between SNA and SEEA and the potential of SEEA data for 'beyond GDP' initiatives. The upcoming 2025 revision of SNA and revision of COFOG classification are also relevant initiatives.

Objective 4: Explore new data sources

New data sources are essential to develop new solutions for users, to improve quality of our estimates, to reduce costs and to remain relevant in a changing context. Those new data sources may or may not be statistics. One example of new data source is Earth observation, which has a lot of potential for ecosystem accounts (extent, condition, services) and forest accounts. Other

examples may be administrative sources for waste statistics, modelling of time series to produce more timely data (as was done for the quarterly greenhouse gas emissions estimates), biophysical modelling for ecosystem accounts, etc. There are other new non-statistical data sources becoming available, such as the taxonomy for sustainable finance. Environmental accountants must follow up developments in those sources and devise solutions to feed them into environmental accounts. There is also a clear link to the ESS innovation strategy. Ecosystem accounts is a lighthouse initiative of that strategy, because of its use of biophysical modelling, Earth observation and integration of non-statisticians with complementary skills, such as the research community.

Objective 5: Establish a research agenda for European environmental-economic accounts

It is proposed to establish a research agenda similar to the SNA one for national accounts and the SEEA CF and SEEA EA research agendas for environmental accounts at UN level. The research agenda for European environmental-economic accounts will be the place to further develop new modules, pilots, establish methodologies, etc. This is not only to develop new environmental accounts, but also to improve methodologies for better quality estimates as well as to develop new indicators and data solutions. The EU research agenda will address the environmental accounts data needs of the EU and it will be coordinated with the research agendas of SEEA CF, SEEA EA and SNA (the latter as regards environmental aspects). The research agenda will have an open time horizon going beyond 2028, thus providing for developments needing longer than 5 years, and ensuring continuity with the next European strategy.

ANNEX 1: ACTION PLAN FOR ESEA 2024-2028

This is a list of activities to implement and achieve the strategic objectives. These actions are to be developed over a 5 year period, with workload shared among partners. All activities in the action plan are meant to be collectively performed by the European Statistical System; however not all national statistical offices need to engage in all activities. Some activities are for Eurostat only. The activities in the action plan are voluntary, except whenever there is an underlying legal obligation such as reporting under Regulation (EU) 691/2011. The activities are numbered for identification. There are no priorities among those activities.

	Statistical initiative	Timing	Responsible
Objective 1: Improve the communication and use of existing environmental accounts modules			
1	Agree on at least **three key policy areas** as priority for serving them with the existing European environmental accounts, e.g., climate change mitigation (based on AEA, PEFA, ETEA, ESST, PEDS, etc.), biodiversity strategy (based on ecosystem accounts), circular economy, etc.	End 2024	Eurostat and Member States
2	**Develop new solution for policy areas.** Develop one or more new solutions for each of the identified policy areas in previous activity. Developing integrated applications of the existing modules may be necessary. The solution may be one new indicator, or one information system integrating the existing modules, or an integrated presentation.	2026	Eurostat and Member States
3	**Maintain and develop new communication tools, visualisation solutions** (e.g. Sankey diagrams) and analyses based on environmental accounts. Eurostat to share tools/code for Sankey diagrams	Continuous until 2028	Eurostat and Member States
4	Release a new generation of **environmental footprints** (carbon footprints, air pollution footprints, material footprints, energy footprints) with better quality methods and improved consistency with estimates by other international organisations. Eurostat to continue offering calculation tools to NSIs.	2028	Eurostat in the lead, associated Member States
5	**Improve timeliness for main aggregates and key annual indicators for at least 2 accounts.** Those 2 accounts are to be identified. This improvement will not be achieved by shortening the reporting deadlines in Regulation (EU) 691/2011 but with (model-based) solutions using existing Regulation (EU) 691/2011 data and auxiliary external information. The early annual estimates for MFA are one example.	End 2024 to identify 2 accounts End 2028 to find solutions improving timeliness	Eurostat in the lead, associated Member States
6	**Maintain bilateral meetings between producers of environmental accounts and (national, EU) institutional users**, to better serve them with environmental accounts. Eurostat already meets key institutional users every year ('Hearings')	Every year or second year	Eurostat at EU level NSIs at national level
Objective 2: Prepare implementation of the three new modules: forests, ecosystems, environmental subsidies			

7	**Maintain voluntary data collections for the three new modules, until mandatory transmissions start.** Set up voluntary data collections for ecosystems extent, condition and services. Further improve existing data collections for forest accounts and environmental subsidies.	Starting already in 2023, according to WG planning	Eurostat to set up Member States to participate
8	**Write/maintain handbooks and guidelines, compilation tools.** Produce new handbooks for ecosystem accounts and forest accounts. Produce an updated edition of the handbook on environmental subsidies and similar transfers. Maintain and update older handbooks for environmental accounts in the Regulation.	End 2024	Eurostat
9	**Organise online workshops for NSIs** to exchange experiences in preparing the production and communication of the three new modules.	End 2026	Eurostat
10	**Quality assurance: quality reports, validation procedures.** Implement quality reports in ESS-Metadata handler for all mandatory modules. Agree validation rules in the working group and apply them in the voluntary data collections. Implement SDMX-compatible questionnaires for the new modules on ecosystem accounts, forest accounts and environmental subsidies.	By end 2026	Eurostat and Member States.
Objective 3: Cooperate with other data producers			
11	**Relations with environmental agencies and research community**. Cooperate with producers of source data for environmental accounts is necessary to influence those sources for mutual benefits. Exchange of best practices in working groups.	Continuous until 2028	Eurostat at EU level NSIs at national level
12	**Cooperate with social statistics to develop applications about social aspects of the green transition**, e.g. about income, social aspects of climate change, social aspects of jobs in the circular economy, etc.	Continuous until 2028	Eurostat and Member States
13	**Contribute to the 2025 SNA review and COFOG.** Environmental accountants should also influence standard classifications when the opportunity arises.	According to time table for 2025 SNA update and COFOG revision	Eurostat and Member States
14	**Assist Central Banks, financial and budget authorities** in their development of sustainable finance and green budgeting. Assess possible use of those data sets as sources for environmental accounts modules such as EPEA, EGSS, etc.	According to time table of sustainable finance initiatives	Eurostat and Member States
15	**Contribute to developing SEEA global standards and methodology.** Eurostat and many European countries are members of the UNCEEA, SEEA technical committees and the London Group on environmental accounting. Continue supporting activities by UNSD and UNECE to implement SEEA. Contribute to the revision of the SEEA Central Framework.	Continuous until 2028	Eurostat and Member States
Objective 4: Explore new data sources			
16	**Earth observation.** Continue developing applications/tools for ecosystem accounts. Further explore	By 2028	Eurostat and Member States

	possible applications for environmental accounts other than ecosystem accounts.		
17	**Develop solutions for PEFA and AEA bridging items** based on international transport databases, following the lead work of the OECD	By 2028	Eurostat (together with OECD and other international organisations)
Research agenda			
18	**Establish a research agenda** for European environmental accounts consisting of a list of topics, lead agency and indicative time schedule. The development of topics may be lead by Eurostat or NSIs. The research of the topics in the agenda will start according to the time schedule.	End 2024: establish list of topics Continuous by 2028: Progress on research agenda topics	Eurostat and Member States

ANNEX 2: IMPLEMENTATION OF ESEA 2019-2023

Objective 1 'Continue improving the quality of the current accounts'

	Statistical initiative	Responsible	Status
1	Produce longer time series, in particular for main aggregates and key indicators with a focus in the following modules and variables: physical energy flow accounts (PEFA): time series 2012 onwards	Voluntary Member States Eurostat to continue offering grants	Not achieved. Eurostat offered grants but few countries used them for this purpose. Some countries provided longer time series but collectively the target was not met.
2	Improve timeliness of estimates Implement the new, shorter reporting deadlines in the Delegated Commission Regulation Countries are encouraged to deliver datasets earlier than the reporting deadlines Early estimates. Eurostat to maintain production of early estimates for the modules where they exist. Countries to develop procedures at national level, on voluntary basis. Currently, Eurostat is not proposing that Member States send extra transmissions for early estimates.	Member States Voluntary Member States Eurostat and voluntary Member States	Achieved Commission Delegated Regulation (EU) 2022/125 improved the timeliness of modules MFA, ETEA and EGSS. Eurostat and some countries produce quarterly estimates of greenhouse gases emissions accounts that improve significantly the timeliness. Validation of data transmissions takes shorter every year and Eurostat releases data a few weeks earlier.
3	Assure the quality of transmitted data through improved validation procedures Validation rules for all the modules agreed in the working groups by 2022 Further harmonisation and use of the ESS metadata handler. Further sharing of quality reports Gradually deploy the statistical standard SDMX for data transmissions under the Regulation.	Working groups Eurostat and Member States Eurostat and Member States	Achieved The working group has adopted validation rules for all the mandatory modules in Regulation (EU) 691/2011. Eurostat applies those rules in its validation of national transmissions. Validations rules are extended and up-dated continuously with each data collection cycle. The Eurostat questionnaires are SDMX compliant (pending PEFA questionnaire will be done in 2023, EGSS and EPEA questionnaires will be available in 2024) There are global SEEA DSD for transmissions between international agencies
4	Maintain classifications Finalise the long-term revision of CEPA and CReMA	Eurostat and Member States	Partially achieved. The revision of CEPA and CReMA has continued in the task force, and

	Statistical initiative	Responsible	Status
	Provide input to the upcoming review of NACE Rev. 2 Contribute to updates of other classifications (PRODCOM, CN, etc.) as needed.		a version went through global consultation in late 2022. It is currently in UN for global adoption. Environmental accountants provided input for NACE Rev.2.1 PRODCOM updates in recent years include many secondary raw materials relevant for circular economy
5	Continue developing sound technical solutions on methodological areas needing further work Areas where such work is already ongoing include the allocation of energy consumption and air emissions by road transport to economic activities and the resident adjustment.	Eurostat and Member States	Partially achieved As regards allocation of road transport emissions and energy use to NACE/HH, the ad-hoc Eurostat task force issued a classification of existing country methods in 3 categories A/B/C (best practices, acceptable, not acceptable). Some but not all countries prepared national action plans to ensure all their methods are A or B. Eurostat reported to the WG in 2021 about the countries with action plans. Eurostat offered grants to co-finance implementation of the action plans. As regards resident adjustments for international transport, OECD has created a database of international air transport that countries can use for their national estimates. OECD is working on a similar database for international water transport. Eurostat facilitated the information exchanges. There was also work in other areas such as reporting of LULUCF in air emissions accounts.

Objective 2 'Communicate better'

	Statistical initiative	Responsible	Status
6	Enhance communication of environmental accounts (*activity in the Action plan EGD*). In particular as regards early estimates, environmental footprints and combined presentations of economic and environmental figures	Eurostat and Member States Working groups to share experiences	Achieved. There are more and better estimates of carbon footprints and material footprints. Material footprints are included as indicators in the EU circular economy monitoring framework and EU SDGs. More countries report material flows in raw material equivalents in the EW-MFA questionnaire (19 countries in 2023 data collection).

	Statistical initiative	Responsible	Status
			This is necessary to calculate material footprints (raw material consumption) Eurostat produces material footprint estimates for the countries which do not report them.
7	Improve the dissemination of the accounts, in particular making more and clearer links across modules e.g., joint analysis of different modules such as energy, emissions and taxes.	Eurostat and Member States Working groups to share experiences	Not achieved yet. Not enough was done yet to present the modules in an integrated way. Some illustrations can be done by end 2023.

Objective 3 'Further extensions, applications and indicators based on the current accounts'

	Statistical initiative	Responsible	Status
8	Publish first estimates of material footprints for all Member States, necessary to monitor the circular economy (*activity in the Action plan EGD*) Eurostat to publish first estimates for the few Member States currently not producing footprints. Member States to start producing or improve their material footprints estimates. Eurostat to continue work in the FIGARO project and further international cooperation to harmonise estimates of the EU and its Member States with the rest of the world	Eurostat Volunteer Member States	Achieved (in 2022) Eurostat estimates material footprints for all EU countries not reporting their own estimates. Material footprints are in EU Circular economy monitoring framework and used for the EU SDGs. Carbon footprints are being migrated to FIGARO.
9	**Identify policy areas** which can be served by the current environmental accounts. Emphasise links to social indicators such as income, health, household consumption of water and energy, recycling rates. Determine the strengths of the environmental accounts vis-à-vis other reference data sources for policy making and identify which aspects of the accounts must be developed.	Eurostat and Member States	Achieved. The following areas were identified: • Circular economy, including links with climate change • Biodiversity and natural capital (based on ecosystem accounts) • Climate change investments • Forests strategy, land use

Objective 4 'New environmental accounts areas'

	Statistical initiative	Responsible	Status
10	**Develop a draft amendment of Regulation (EU) 691/2011 to create new environmental accounts data for the European Green Deal (*activity in the Action plan EGD*)** Prepare the new mandatory transmissions with handbooks, methodologies, voluntary transmissions and other technical solutions as needed (*activity in the Action plan EGD as regards environmental subsidies and ecosystem accounts*) as well as with grants.	Eurostat Member States (in the Council WG)	Achieved Proposal for Regulation of the European Parliament and the Council (COM/2022/329 final) Update of the environmental subsidies and similar transfers handbook started in 2023.
11	**Sustainable finance** Eurostat is engaged in discussions with IMF about climate change related investments. Eurostat liaises with Commission DGs for possible statistical applications of the taxonomy.	Eurostat	Achieved Eurostat co-chaired a CMFB TF on the statistics on sustainable finance and climate related risks (see final report) The ESS had a voluntary data collection on the stock of debt issued by the Member States and Eurostat published the results in statistics on green bonds within general government debt. Eurostat follows the developments of the European Commission about sustainable finance. This is a potential data source for environmental accounts.
12	**Develop other areas, in particular resource management expenditure, water and environmentally harmful subsidies** (this work will have lower priority than the preparation of mandatory modules)	Eurostat and volunteer Member States	Achieved. Eurostat launched a voluntary data collection on potentially environmentally damaging subsidies in late 2022. Guidance notes will be revised for the second voluntary data collection in late 2023 Voluntary variables on resource management added in EPEA

Objective 5 'Support activities'

	Statistical initiative	Responsible	Status
13	**Ensure training** of national experts and maintenance of staff skills with the European Statistical Training Programme.	Eurostat	Achieved. Took place all the years in spite of covid crisis

	Statistical initiative	Responsible	Status
14	**Share experiences** in the working groups Environmental accounts and Monetary environmental statistics. Identify best practices in all priority areas.	Working groups	Achieved. Took place all the years in spite of covid crisis
15	Eurostat to continue providing **compilation tools** to Member States (PEFA builder, footprint tools) whenever developing tools at EU level is more efficient.	Eurostat	Achieved. Compilation tools for PEFA and footprints produced and made available
16	Eurostat to continue promoting **pilot studies** and quality improvements in Member States, also supported with financial assistance in the form of grants, subject to availability of resources.	Eurostat to provide grants and Member States to produce pilot studies	Achieved. Took place all the years in spite of covid crisis
17	**Maintain explanatory notes and handbooks**. Explanatory notes may be updated every year as needed. New versions of handbooks can be issued whenever there are leaps forward of methodology, after say 5 to 8 years.	Eurostat	Partially achieved. Handbooks on PEFA and European forest accounts not finalised. Work is ongoing. Update of the ETEA handbook in early 2024.
18	Contribute to develop global standards and methodology. Eurostat and many European countries are members of the UNCEEA, SEEA technical committees and the London Group on environmental accounting. Europe is finding solutions to pending issues and documenting them in *technical notes* which can feed directly in the next revision of the SEEA Central Framework (and of the SNA). Such notes were issued e.g. regarding air emissions and energy use of real estate activities, electric transport equipment and energy efficient buildings, and other such notes will follow.	Eurostat and volunteer Member States	Achieved. Many contributions by Eurostat and NSIs to the UNCEEA, SEEA CF technical committee, London Group, task forces UNECE and OECD on circular economy and joint seminar OECD/UNECE.
19	**Support the implementation of SEEA outside the EU** with examples of best practices, sharing handbooks, training and tools already available. Continue supporting activities by UNSD and UNECE to implement SEEA. Contribute to the use of environmental accounts for the UN 2030 Agenda for Sustainable development and its Sustainable Development Goals.	Eurostat and volunteer Member States	Achieved. Many contributions by Eurostat and NSIs to the UNCEEA, SEEA CF technical committee, London Group, task forces UNECE and OECD on circular economy and joint seminar OECD/UNECE.