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DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS
STATISTICS DIVISION
UNITED NATIONS

**Development of Global Databases for the SEEA (Area C)
Summary of activities**

Paper prepared by the Secretariat and Members of the Area C Working Group

(for discussion)

Area C: Developing Global Databases

17th UNCEEA Meeting, 27-28 June 2022

1. Introduction

This note reports on the current activities and roadmap of Area C. Continuing the practice introduced during the last two years, the Area C group maintains the attached two tables (see annex). Annex 1 is **the Status of SEEA Global Databases** (covering 12 SEEA accounts), and Annex 2 is the roadmap for 2021-2025, summarizing current and upcoming work on the Area C priorities.

The next section of this report is a summary of current activities and recent progress for the Area C roadmap. Section 3 reviews priorities and objectives through 2025. All of the details are included in the two annexed tables. This report concludes with questions for discussion by the UNCEEA.

2. Progress on Current Programme of Work

Air Emission Accounts (AEAs) and Energy accounts

The coverage of countries with AEAs, or pilot AEAs, from official sources is expanding. The OECD recently added Colombia and Indonesia to the list of countries compiling official AEAs.

The IMF, OECD, IEA, Eurostat and UNSD have established a partnership to develop and release quarterly air emission (Q-AEA) estimates based on the annual AEAs, with the aim of increasing not only the frequency but also the timeliness of existing data. The most recent annual data currently cover the period up until 2020, although in many instances the coverage is still limited to 2019, particularly outside Europe. The aim of this project is to provide quarterly accounts within 120 days after the end of the quarter, relatively close to the release of quarterly economic accounts.

The Q-AEA partners have agreed on a common methodological approach and developed a single set of estimates that are shared among the international organisations. This partnership is expected to accelerate the delivery of the estimates, avoid duplication of efforts, and improve the quality of the estimates and their usefulness to users. The project has built upon existing and well established econometric techniques currently employed by national statistical offices to benchmark and temporally disaggregate official statistics, as well as existing guidelines on the compilation of official AEAs and the OECD methodology for deriving SEEA-based annual greenhouse gas estimates from UNFCCC inventories. By the end of 2021, Eurostat and IMF had released their first experimental quarterly estimates for greenhouse gases by (ISIC) sectors of economic activities, with the IMF producing seasonally adjusted data aggregated to macro regions. Eurostat is currently focusing exclusively on non-seasonally adjusted data and is able to release also national estimates for total greenhouse gases. The OECD plans to disseminate its initial estimates of Q-AEAs for the OECD area as a whole in the second half of 2022. The organisations involved intend to regularly disseminate the estimates and to further improve the methodology on calendar and seasonal adjustment as well as correction for unusual weather conditions.

In parallel with work to produce quarterly estimates from annual AEAs, the OECD is also working to develop monthly emissions estimates for CO₂ emissions from international transport activities. So far, a monthly database with global coverage on CO₂ emissions from air transport, available both on SEEA and UNFCCC inventories basis, are available [online](#) along with the underlying [methodology](#). Work is ongoing during 2022 by the OECD to develop a similar database for maritime transport.

In addition, Eurostat publishes SEEA-based carbon footprints every year, which are used for monitoring the SDGs in the European Union, in particular so-called 'spillover effects'. Existing carbon footprints have increasing visibility in the context of the SDGs.

Regarding the international compilation of energy accounts, there is similarly an approach with two work streams: one compiling officially reported national data and another work stream producing estimates. Eurostat compiles the accounts from national statistical systems in Europe. In addition, UNSD has an excel-based tool which can help countries estimate energy accounts based on IEA balances.

The OECD and UNSD have developed questionnaire templates for AEAs and physical energy flow accounts. Both templates have been pilot tested with a selection of countries, including those that have recently started to compile air emission or physical energy accounts on a regular or pilot basis. Following previous recommendations from UNCEEA, the templates were developed containing multiple tiers of aggregation for economic activities and different sets of substances (greenhouse gases and air pollutants) to accommodate different levels of data availability in countries and resources at national statistics offices. The questionnaires were tested in a diverse group of countries with differing levels of data availability and SEEA experience (Australia, Canada, Colombia, Costa Rica, Indonesia, Kenya, Mexico, New Zealand). The questionnaires were adapted from the existing Eurostat questionnaire with some minor adjustments to the mapping to the SEEA SDMX standards. Pilot testing was recently completed with the objective of compiling feedback on the structure and content of the questionnaires and for assessing feasibility of using the templates for collection from countries. The results of the pilot test and final questionnaires will be reviewed by the SEEA Central Framework Technical Committee and submitted to the UNCEEA for approval. In addition, the questionnaire will be presented to G20 Data Gaps Initiative (DGI) participants on a virtual workshop in the fall.

Land accounts

The existing ISO Standard on Land Cover (ISO 19144-2 Land Cover Meta Language) was reviewed at the end of 2019. The standard on land cover was intended to address primarily the physiognomic aspects of land cover. A new standard on land use (ISO 19144-3) has been initiated to complement the existing ISO 19144-2. Thus, the Land Cover Land Use Advisory Group (AG13) has been established to advise ISO/TC 211 on the application and implementation of the ISO/TC 211 standards on land cover land use in the UN and other transnational organizations and to coordinate within the context of broader UN initiatives for this purpose. In this context, FAO, in collaboration with many other international organisations, launched a questionnaire with an objective to describe the diversity of approaches to document and apply land cover and land use classifications and statistics. In addition, FAO has developed a Land Cover Legend Registry (LCLR) in 2021 for FAO use and is also publicly available ([site](#)). The main purpose of this registry (web-catalogue) is to provide new and/or existing land cover legends at global, regional, national, and subnational level. Land cover legends are based on ISO-19144-2 LCML to support the interoperability, consistency, and comparability between land cover legends. The land cover legends are multi-linguistic and are provided in different file formats to ensure the adaptability of the registry to local systems. FAO under AG13 conducted Land Cover Land Use user need studies on use of land use land cover statistics for policy and for sustainable development indicators ([questionnaire](#)).

Several meetings were held to progress with global land cover databases. A technical expert meeting on global land cover databases was organised on 13 December 2021 to better understand the different international databases on land cover and their strengths and weaknesses with respect to the SEEA. It brought together experts from UNSD, the Basque Centre for Climate Change, OECD, FAO, Eurostat and UNCCD. The discussions helped identify areas in which further work is required to achieve greater international harmonisation and to advance the establishment of a global SEEA land cover database with country vetted official statistics. These include:

- **Classifications**: there is a need for a common list and a common hierarchy of land cover (LC) classes that combine the elements from different classifications and show how individual elements and their aggregates relate to each other. A proposed way forward is to (i) develop an ontology of LC classes that would help meet the various information needs, while promoting harmonization; and (ii) identify a minimum common list of classes that would be agreeable for all IGOs involved (bottom line) and that could be further expanded and adapted to specific needs in line with an agreed hierarchy. For establishing a global SEEA database, the number of LC classes to be covered will need to be limited to ensure that transition matrices remain manageable and readable. There is also a need for linking LC to land use.
- **Country boundaries**: With the discontinuation of the FAO's Global Administrative Unit Layers (GAUL), there is a need for an institutionalised official database that could serve as a global reference for country boundaries. A clarification is also needed on how to deal with disputed boundaries/ territories and whether different resolutions could be used for different countries.

Other issues identified include the reconciliation of data series from different generations of global LC products so as to obtain time series that are long enough to be relevant (at least 20 years), and the reconciliation of global and national time series so as to provide a consolidated data set for international use.

UNSD is exploring the inclusion of the ISO Land Cover Meta Language (LCML) used by FAO into the ARIES for SEEA Explorer. To move forward, UNSD, in partnership with FAO and OECD, will organize a follow-up expert meeting in Q4 2022 to discuss the development of a reporting template, and related issues like land cover classes and country boundaries.

Material Flow Accounts (MFAs):

The [Global Manual on Economy Wide Material Flow Accounting](#), prepared by UNEP and the International Resource Panel (UNEP-IRP), jointly with Eurostat, UNSD and OECD, was published in 2021. The global EW-MFA manual builds on the experience of the Eurostat Economy-wide material flow accounts handbook, with some extensions, such as addressing the specific issues of resource-extractive economies and subsistence economic activities that are more prevalent in middle and low income countries. By the end of 2021, UNEP-IRP provided estimated MFA data for 193 countries for 1970-2019. The UNEP database is a major step forward for MFA statistics availability, and more broadly for measurement of circular economy. Committee members are encouraged to visit the link: <https://wesr.unep.org/downloader>. In early 2022, UNEP developed a questionnaire for countries to validate estimated MFA data. The pre-filled questionnaire was sent to countries requesting them to revise the data and replace it with national data if possible or necessary, with responses expected by the end of June 2022. UNEP is planning to replace the global estimates with country data by request from the country.

Work by the OECD, UNEP and Eurostat on an internationally harmonised methodology for estimating demand-based materials continues (input-output based approach). A summary report with methodological guidance and an updated roadmap and measurement agenda will be available by end 2022.

At the end of 2021, globally estimated MFA data were published by UNEP for 193 countries for 1970-2019 on the UNEP website. UNEP data collection for MFA is formally established to a regular schedule every two years.

Eurostat has published estimates for demand-based (footprint) material flows for the EU as whole and for EU member states. The UNEP-IRP updated its estimated material footprints for 157 countries; the time series for 1970-2019 were published on the UNEP website.

Water accounts

Pilot work to populate core water accounts was delayed due to the COVID-19 pandemic and changing priorities in 2020-21. It builds on country replies to the Eurostat/OECD questionnaire section on inland waters and the coordinated UNSD/UN Environment water statistics questionnaire. These questionnaires ensure a quasi-global country coverage and are broadly aligned with the SEEA Central Framework and related Water Accounts. They are complemented by the FAO Aquastat questionnaire. Differences and synergies were reviewed in 2019-20 and discussed among the four partner organisations - OECD, Eurostat, UNSD and FAO. Some of the differences identified are addressed through amendments in the questionnaire. Other differences remain and are explained and highlighted. The next data collection on water will be carried out in October-December this year. Work to evaluate the structure of the questionnaire tables and the variables needed to populate core water accounts as proposed in the SEEA Technical Note on Water Accounting, and to find ways to integrate data from other sources to fill gaps (e.g. earth observation, ARIES for SEEA water accounts) will subsequently resume. The outcomes will be presented to the UNCEEA in 2023.

3. Area C Strategic Priorities

The objective of Area C is to establish a set of global SEEA core databases to provide users with SEEA compliant data sets for integrated policy development and analysis, including the SDGs. This is done by coordinating and supporting the development of such databases at international level, by facilitating the exchange of related data among international organisations, and by providing direct access to existing SEEA databases through the

websites of the IOs and ultimately through the UNSD SEEA portal. During 2021-22, the Area C group continued to make progress on priorities and actions as outlined in the Area C roadmap (Annex 2) for the five priority accounts (air emissions, energy, material flows, land and water) identified at the Eleventh Meeting of UNCEEA in 2016, as well as for other emerging international SEEA compilations. A major priority for the next five years, as elaborated in last year's report, is to improve the relevance of SEEA priority accounts under Area C. The priority accounts should be aligned with the demands of sustainability policy analysis and monitoring, in terms of appropriate granularity of information and timeliness.

Continuous improvements to the existing databases are a part of the ongoing regular work of the responsible organisations. Recent activities have focused on a) **data quality**, b) the automation of the procedures for efficient **data exchange**, and c) **dissemination** of statistics from the accounts. In this context, efforts are being made among the area C group, and by national sources, to **expand geographic coverage** so that a greater number of countries can be included in the analyses using SEEA databases.

The Area C group also continuously seeks out opportunities to link up with related initiatives, such as the G20 Data Gaps Initiative (DGI). The DGI was originally established in 2009 by the G20 Finance Ministers and Central Bank Governors (FMCBG) as a set of recommendations to support enhanced policy analysis of emerging risks and close the data gaps identified following the global financial crisis. A new third phase of the DGI is expected to be approved in July. The DGI has four pillars—climate change, household distributional information, fintech and financial inclusion, and access to private and administrative data and data sharing. SEEA-related recommendations fall into the climate change pillar. Development of questionnaire templates for air emission and energy accounts could be included in recommendations for the DGI (Phase 3). There are also proposed recommendations on the carbon footprint of foreign direct investment, government climate-impacting subsidies, and mitigation and adaptation current and capital expenditures.

The Committee is invited to comment on the updated roadmap and status of tables, including details shown in Annex 2. In addition to progress on the five Area C priority accounts, new opportunities investing in environmental accounting are emerging for the other non-priority accounts like ecosystem accounting and the monetary accounts on environmental activities, goods and services, and taxes and subsidies. The remainder of this report includes a summary of highlights from the roadmap, and some questions for discussion by UNCEEA.

Coverage

In general, a two-pronged strategy is deployed to (a) support countries to implement the priority accounts and (b) develop and implement estimation methodologies for filling the gaps and improving timeliness. An example of such methodologies is the OECD methodology to estimate AEAs for carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O). Another example is UNEP's ongoing work on an EW-MFA compiler to support countries in building these accounts. UNEP is also developing and delivering capacity building using a modular approach to allow UNEP's experts and national statistical offices to establish the EW-MFA. In practice, there can often be synergies between estimation work and development of official statistics as the national level, for example by adding additional granularity to the statistics.

Data quality

Eventually, establishment of global templates for the five priority accounts should contribute significantly to improvements not only in coverage of the accounts but also other qualitative aspects like scope and consistency between organisations. Already, the detailed work to develop and test templates for energy, air emissions, and material flows has contributed to improved experience among stakeholders and coherence and alignment with the SDMX for SEEA standards. The air emissions and energy templates were developed with template systems (up to three templates) with different levels of detail or aggregation in the reporting. The template system can accommodate heterogeneity in level of detail of information available from sources without compromising the coherence between countries and efficiency of data exchange from standard templates.

Data exchange and coordination

Energy accounts and AEAs can be automatically transferred between Eurostat, the OECD and UNSD. UNSD has worked with Eurostat for a transfer of Eurostat's air emissions and energy physical supply and use tables. UNEP

has automated the data exchange of Material Flow Accounts with UNSD for the update of the SDG Global Database; this can also be used to update the OECD MFA database and the SEEA database in future.

UNEP is planning (2022-2023) a project on development of the Global Footprint Tool, which will allow statistical offices to calculate their countries environmental footprints, such as material, energy, carbon, water and land, across several domains at a high quality, commensurate with the requirements of statistical reporting.

The Area C group maintains the two tables: Status of SEEA Global databases (Annex 1), which outlines the currently available international compilations of accounts tables as a public good resource, and the roadmap (Annex 2), containing details on forward-looking plan. These tables serve an important function in keeping international organisations fully abreast and coordinated for each other's work on SEEA databases.

Dissemination

Work on building the dissemination platform is ongoing, with the Basque Centre for Climate Change building the platform through the ARIES for SEEA Explorer, which will appear on the UNSD SEEA website. The platform for the SEEA Central Framework will also be connected to the SEEA Ecosystem Accounting Explorer. It is envisaged that the dissemination platform will be available by the end of the year. The ARIES for SEEA is developing water accounts (from global data sources) and is expected to be completed by the end of the year.

Three of the Area C priority accounts (material flow accounts, energy accounts, air emission accounts) are currently mandatory in the European Union. These databases are maintained by Eurostat. Complementary datasets are maintained by the other Area C members (see details in Annex 1), providing public access to databases with global or quasi global coverage.

Questions remain as to the best way to make the dissemination of global SEEA accounts attractive and user-friendly for different audiences (e.g. interactive graphics, dynamic data visualisations, key indicators and messages).

4. Questions for UNCEEA

The Committee is requested to comment on:

1. Progress made with the priority accounts, the main challenges and the timeliness of their release.
2. The roadmap and the planned activities, including:
 - i. the ongoing development and potential application of reporting templates for priority accounts, and
 - ii. the linkages with international initiatives such as the G20 Data Gaps Initiative (DGI).

Annex 1: Table 1 Priority Accounts

Accounts	Agencies involved	Country coverage	Time coverage	Classifications used	Data sources	Available databases/datasets	Status of methodology (compilation, estimation)
Air emissions	Eurostat, OECD	<u>Reported data:</u> EU, AUS, CAN, CHE, COL, GBR, IDN, ISL, KOR, NOR, NZL, SRB, TUR, UKR, <u>Estimated:</u> JPN, KAZ, RUS, USA	<u>Reported:</u> 2000-2020* <u>Estimated:</u> 2008-2019* (CO ₂ , CH ₄ , N ₂ O) <i>*Annual updates</i>	ISIC Rev4 Households	Country reporting and OECD methodology to estimate accounts using UNFCCC data	<ul style="list-style-type: none"> Eurostat: http://ec.europa.eu/eurostat/data/datab ase, tables env_ac_ainah_r2, env_ac_aibrid_r2, env_ac_aeint_r2, env_ac_io10 OECD: https://doi.org/10.1787/data-00735-en 	Mature Based on <u>Eurostat Manual</u> and <u>OECD Methodology</u> (endorsed by SEEA-CF TC)
Energy	Eurostat, IEA, UNSD	<u>Reported:</u> Eurostat database: EU Member States and many others (e.g., Turkey, Serbia, N. Macedonia, UK, Switzerland, etc.) Several other countries also reporting in national databases/reports. <u>Estimation tool available for country usage</u>	2008-2020	ISIC Rev4 Households Energy sources (IEA)	Country reporting	<ul style="list-style-type: none"> Eurostat: http://ec.europa.eu/eurostat/data/datab ase, tables env_ac_pegasu, env_ac_pegaf04, env_ac_pegaf05 Eurostat questionnaire : https://ec.europa.eu/eurostat/documents/1798247/6191537/Physical+energy+flow+accounts+%28PEFA%29+questionnaire/d47366df-bb76-4404-b2e9-8d6729ae7423 	Mature Based on Eurostat and IEA manuals, and UNSD conversion methodology (to be submitted to SEEA-CF TC)
Economy-wide material flows	Eurostat, UNEP (and IRP), OECD	Global	1970-2019 Eurostat: Annual updates UNEP : every two years	Material groups (no ISIC breakdown)	Country reporting and international databases from Eurostat, UNEP (and OECD building on Eurostat and UNEP)	<ul style="list-style-type: none"> UNEP: https://wesr.unep.org/downloader, under Consumption and Production / Resource efficiency OECD: https://doi.org/10.1787/data-00695-en Eurostat: http://ec.europa.eu/eurostat/data/datab ase, tables: env_ac_mfa, env_ac_mfadpo, env_ac_mfabi, env_ac_mfain, env_ac_rme, env_ac_rmfed & others for derived indicators 	Production-based: Mature Based on Eurostat manual, OECD guide, and UNEP global manual (released in June 2021) Demand-based: under development (OECD with Eurostat and UNEP)
Land (cover)	FAO, OECD UNSD ARIES (EEA, JRC)	Global (countries, macro-regions, metropolitan areas)	1992-2019	Land cover classes (SEEA-CF, FAO, UNCCD)	ESA and Université Catholique de Louvain Geomatics – Climate Change Initiative - Land Cover (via FAO and OECD)	<ul style="list-style-type: none"> FAO: http://www.fao.org/faostat/en/#home: Land Cover Domain: http://www.fao.org/faostat/en/#data/LC OECD: http://stats.oecd.org/Index.aspx?DataSetCode=LAND_COVER https://doi.org/10.1787/72a9e331-en 	FAO: Completed using global data, no country vetting of results OECD: Completed using global data, no country vetting of results (only of method) ARIES/UNSD: Completed using global data, results not yet vetted

Accounts	Agencies involved	Country coverage	Time coverage	Classifications used	Data sources	Available databases/datasets	Status of methodology (compilation, estimation)
Water (resources, use)	Eurostat, OECD, UNSD, UNEP, FAO	<i>Selected countries depending on data availability (EU, OECD, other)</i>	<i>1970-2019 (limited availability for some variables and years)</i>	ISIC industries (limited availability)	Country reporting: OECD/Eurostat coordinated with UNSD/ UNEP (+FAO Aquastat**, +UN-Habitat, WHO (wastewater)) ARIES for SEEA (using global data sources)	..	<i>(cf SEEA water, SEEA CF, and SEEA water Technical note)</i>

Annex 1: Table 2 other accounts

Accounts	Agencies involved	Country coverage	Time coverage	Classifications used	Data sources	Available databases/datasets	Status of methodology (compilation, estimation)
Mineral & Energy resources - asset accounts	OECD	Currently covering 9 countries	1960-2020 (availability varies)	14 resources prioritized (same as World Bank)	Country reporting	<ul style="list-style-type: none"> OECD : https://stats.oecd.org/Index.aspx?DataSetCode=NAT_RES 	OECD Green Growth Working paper (2018)
Environmentally-related tax revenue (ERTR)	OECD, Eurostat	Selected countries depending on data availability (EU, OECD, other)	1994-2020	ISIC Rev4, Households Tax bases: energy, transport, pollution, resources. Domains: Total, air pollution, biodiversity, climate change, ocean, etc.	Country reporting: OECD/Eurostat	<ul style="list-style-type: none"> Eurostat: https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=env_ac_taxind2&lang=en OECD: http://stats.oecd.org/Index.aspx?DataSetCode=ERTR_ACC 	Based on Eurostat manual and OECD methodological guidelines
Environmental protection expenditure accounts (EPEA)	OECD, Eurostat	EU countries, selected OECD countries	2006-2019	Final and intermediate consumption, GFCF, imports, output, others. Institutional sector ISIC for some variables, CEPA, CReMA	Country reporting, Eurostat	<ul style="list-style-type: none"> Eurostat: http://ec.europa.eu/eurostat/data/database , tables env_ac_epea and sub tables OECD: http://dotstat.oecd.org/Index.aspx?DataSetCode=EPEA 	SEEA Central Framework EPEA technical note Eurostat manual
Environmental Goods and Services Sector (EGSS)	Eurostat	EU countries	2009-2017	Total, Ancillary, Market, non-market, own final-use ISIC, CEPA, CReMA	Country reporting, Eurostat	<ul style="list-style-type: none"> Eurostat: http://ec.europa.eu/eurostat/data/database , tables : env_ac_egss1 ; env_ac_egss2 ; env_ac_egss3 	SEEA Central Framework EGSS technical note Eurostat manual Eurostat compilation guide
Environmental subsidies and similar transfers	Eurostat	EU countries	No data published yet	Institutional sector ISIC, CEPA, CReMA	Country reporting, Eurostat	No data published yet (pilot data collection)	SEEA Central Framework Eurostat manual
Waste accounts (by industry)	OECD, UNSD, Eurostat	Selected countries depending on data availability (EU, OECD, other)		ISIC	Country reporting OECD/Eurostat coordinated with UNSD	No data published yet. Some data can be derived from existing data collection on waste data.	SEEA Central Framework
Forest accounts	Eurostat	EU countries	2012-2017 (some countries back to 1986)		Country reporting, Eurostat	<ul style="list-style-type: none"> Eurostat: http://ec.europa.eu/eurostat/data/database , table for_eaf 	SEEA Central Framework
Ecosystem accounts	UNSD	Global	1992-2019	ISIC Rev4, Households SEEA CF Land cover interim classification; IUCN Global Ecosystem Typology	Global datasets and models	<ul style="list-style-type: none"> Currently computable; extent, condition (for forest), and select services currently available https://seea.un.org/content/aries-for-seea 	SEEA Ecosystem Accounting

Work elements/ topics	Lead agencies (partner agencies)	Objectives for 2021-2025	Steps toward the 2025 target	Timelines	Links to work in other areas
PRIORITY ACCOUNTS					
Air emissions (GHG, air pollutants)	OECD (with Eurostat and UNSD)	<p>Improve timeliness & frequency: <i>Develop a methodology for quarterly estimation to meet the demand from policy makers.</i></p> <p>Expand geographical coverage: <i>Ensure that (i) all official AEAs are included in the OECD's database / global database; (ii) all AEA related national data are compiled or estimated.</i></p> <p>Improve coverage of emission sources</p> <p>Maintain global OECD database Carry out further research</p>	<ul style="list-style-type: none"> Develop methodology for quarterly AEAs (aiming ultimately at t-2 months' time lag after the end of the reference quarter). Would also lead to early annual emission estimates (collaboration between IMF, OECD, Eurostat, IEA, UNSD) Develop methodology for estimating annual AEAs for non-Annex I countries of UNFCCC. Develop tiered template with minimum set of information to be compiled by countries without SDMX transmission. Establish regular data collection Develop methodology for estimating emissions from international maritime transport, residence basis. Maintain annual updates of global compilation and estimation. Potential further research areas: LULUCF, road transport 	<p>2021-22 Ongoing</p> <p>2022-23</p> <p>2021-22 ongoing 2023</p> <p>2022</p> <p>Ongoing 2023-24(?)</p>	Area A: climate indicators
Energy	UNSD (with Eurostat and OECD)	<p>Finalise the estimation methodology</p> <p>Establish and maintain global database</p>	<p><u>Estimation methodology:</u></p> <ul style="list-style-type: none"> Further exploration of estimation methodologies for accounts derived from energy balances <p><u>SEEA database</u></p> <ul style="list-style-type: none"> Develop common data template for national reporting Establish regular data collection 	<p>Medium term</p> <p>Short term/ Medium term</p>	Area A: climate indicators
Economy-wide material flows (EW-MFA)	UNEP (with Eurostat and OECD)	<p>Maintain and further develop the global database</p> <p>Refine the methodology for demand-based material flows (input-output based approach for use in international work)</p> <p>Implement automatic data transfer among IOs</p> <p>Carry out further research and improve</p>	<p>UNEP/IRP <u>global material flow database</u> (updated Dec. 2021, frequency every two years)</p> <ul style="list-style-type: none"> Progressively integrate national data using a common data template (a pre-filled EW-MFA questionnaire for SDGs, UNEP) Reconcile national data with international estimates (UNEP-IRP) Continue capacity building in countries (UNEP) <p><u>Material footprints</u></p> <ul style="list-style-type: none"> Further develop and test the harmonised estimation method for demand-based material flows (OECD with Eurostat & UNEP) Update the roadmap for required developments & research (OECD with Eurostat & UNEP) <p>Put in place an automatic data transfer and exchange mechanism (using SDMX) between UNEP and other IOs (UNSD, OECD, <i>Eurostat</i>)</p> <ul style="list-style-type: none"> Integrate MF data/accounts with waste statistics/accounts. 	<p>Ongoing Medium term</p> <p>Ongoing</p> <p>2021-22 Ongoing</p> <p>2021-22 Ongoing</p> <p>TBD (as of</p>	<p>Area A: CE indicators</p> <p>Area D1: capacity building</p> <p>Area B1: indicators from I-O analysis</p> <p>Area A: CE indicators</p>

Work elements/ topics	Lead agencies (partner agencies)	Objectives for 2021-2025	Steps toward the 2025 target	Timelines	Links to work in other areas
		relevance for circular economy policies	<ul style="list-style-type: none"> Explore links with product statistics, and EGGS and tax revenue accounts. 	2023)	Area B1: classifications
Land (cover)	UNSD and FAO (with OECD, UNCCD and others)	Develop international consensus on estimation methodology to use Maintain global database with regular updates, agree on practical co-operation arrangements among IOs, and implement an automatic data exchange between IOs	<u>Estimation methodology:</u> <ul style="list-style-type: none"> Integrate LCML into ARIES for SEEA <u>Next steps:</u> <ul style="list-style-type: none"> Review coherence between existing data databases and collection – FAO, OECD, UNCCD: structure and content, data sources, methodology Develop an agreed hierarchy and ontology of LC classes that meet various information needs, while promoting harmonization. Develop a common data template for national reporting on land accounts: expert review meeting Establish regular data collection [validation by countries] 	Long-term Ongoing	Area B2: ecosystem accounts
Water (resources; use)	OECD (with Eurostat) <i>in cooperation with UNSD-UNEP, FAO</i>	Populate simple SEEA core water accounts (pilot)	<ul style="list-style-type: none"> Develop and agree on tiered reporting templates for core water accounts building on the SEEA Technical Note (OECD, Eurostat) Test the use of country replies to the OECD/Eurostat questionnaire on inland waters for populating the standard template (OECD, Eurostat) Establish a database on SEEA water accounts (starting with EU countries and OECD member and partner countries) 	2022-23 2022-23 tbd	Area B2: ecosystem accounts Area A: CE indicators
OTHER DEVELOPMENTS					
Additional priority accounts	All involved	Identify a small set of future priority accounts	<ul style="list-style-type: none"> Discuss the potential of other accounts to become priority accounts at UNCEEA meeting Review the status of the selected accounts, identify the developments required and related arrangements among IOs Decide upon future priority accounts and roadmap at UNCEEA meeting 	TBD, as of 2023 ongoing	
Integrated database	OECD, Eurostat (tbc)	Work towards combining SEEA accounts (integrated db)	<i>To be discussed</i> Integrated environment-economy db(<i>could start with air emissions, including GHG, energy and tax revenue-not yet a priority account</i>). <i>Integrated circular economy db (feasibility to be assessed)</i>	TBD As of 2023-24	Area A: CE, climate, ...
Overall coordination and governance	OECD (all involved)	(pending tasks)			
Responsibilities for quality assurance and validation		Reach a consensus and agreement on the sharing of responsibilities	Sharing of responsibilities for data collection from national sources, and for data quality assurance and validation (subsidiarity principle). <i>to be discussed; arrangements will differ depending on the account considered</i>	ongoing	
Dissemination of priority accounts	UNSD (all involved)	Establish a SEEA dissemination portal	Establish a portal on the ARIES platform providing access to SEEA databases and links to accounts hosted by lead (and partner) agencies.	2021-22	
Data ownership and copyright		Clarify & agree on data ownership/ copyrights	<i>To be discussed</i>	TBD	

