DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS
STATISTICS DIVISION
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System of Environmental Economic Accounting

SEEA Central Framework 2028 update

Draft Guidance Note

C2: Integrated framework for environmental activity accounts

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1 Introduction

1. The aim of this note is to provide guidance on the treatment of issue C2: "Inclusion of the Integrated framework for monetary accounts (in the SEEA Central Framework)" in the update of the SEEA CF.

2. Since the SEEA CF is designed to be consistent with the SNA, it is important to recall first a few key accounting concepts of the SNA 2025 including the notion of "integrated framework".

3. The System of National Accounts provides a comprehensive description of the economic system. Key elements in the description are: strong roots in economic theory, the use of an accounting structure, the calculation of balancing items derived from the accounts and the links between the accounts that make them a system. These elements are clearly described in the manual: "Fundamental to the SNA is the identity that goods and services produced in the economy must be consumed, used for capital formation or exported while all goods and services used within the economy must be produced in the economy or imported. From this, once suitable allowance is made for the effect on prices of taxes and subsidies on products, the goods and services account is derived and thence GDP. This basic identity is elaborated within the SNA into a sequence of interconnected flow accounts linked to different types of economic activity taking place within a given period of time, together with balance sheets that record the values of the stocks of assets and liabilities held by institutional units or sectors at the beginning and end of the period. Each flow relates to a particular kind of activity such as production, or the generation, distribution, redistribution or use of income. Each account shows the revenues of the institutional units and the expenditures made. An account is balanced by introducing a balancing item defined residually as the difference between the total revenues recorded on one side of the account and the total expenditures recorded on the other side. The balancing item from one account is carried forward as the first item in the following account, on the opposite side, thereby making the set of accounts an articulated whole. The balancing items are economic constructs of considerable interest and analytical significance. Examples of balancing items include value added, disposable income and saving. There is also a strong link between the flow accounts and the balance sheets, as all the changes occurring over time that affect the assets or liabilities held by institutional units or sectors are systematically recorded in one or another of the flow accounts. The set of accounts just described is referred to as the "sequence of economic accounts". (SNA 2025 §1.22-1.24)

4. In addition to the individual accounts and their interconnected sequence, the description of the economic system also relies on "other accounts or tables that either contain information that cannot be included in the main accounts or present information in alternative ways, such as matrices, that may be more appropriate for certain types of analysis."(SNA 2025 §1.33)

5. Supply and use tables are one of the additional accounting elements. They are "matrices that record how supplies of different kinds of goods and services originate from domestic industries and imports and how those supplies are allocated between various intermediate or final uses, including exports." (SNA 2025 §1.34)

6. The sequence of economic accounts and the other accounts or tables, covering but not limited to supply and use tables, define the *integrated framework of national accounts*.

7. In the field of environmental accounts, the representation of the interaction between the environment and the economy in monetary terms, offered by the current version of the SEEA central framework, is mainly based on individual accounts and does not include an overall integrated framework for monetary accounts.

8. It is widely recognised that a single conceptual framework, providing a comprehensive picture of the actions and activities by economic operators for environmental purposes, would bring benefits both from the producers' and the users' perspective.

9. In order to bridge the identified gap, a proposal for an integrated framework, encompassing different aspects of monetary environmental accounts, was proposed by Eurostat in 2018 and endorsed by the SEEA CF Technical Committee. Under this proposal, an integrated framework for monetary environmental accounts would be, according to Eurostat's definition "… constituted by several accounts, each one being a module independent from the others but fitting tightly together. 'Fitting tightly' means that the modules are part of a single, bigger conceptual framework that is embedded and fully consistent with the SNA; variables and aggregates produced for one account can be re-used in another account …". [Eurostat, 2018]

10. Taking into account the existence of previous work and considering the high conceptual improvement deriving from this kind of tool, the development of an integrated framework for monetary environmental accounts has priority level '0' within the SEEA CF research agenda, i.e., it is one of the "Must-do" issues. These are defined as being fundamental to the SEEA CF, having high policy demand or issues for which work has already been done and needs to be reflected in the updated SEEA Central Framework. Comments from the global consultation on the initial list of issues were considered in the preparation of the Guidance note.

11. The following process was used to prepare and finalise the GN (This will be drafted by UNSD for inclusion ahead of Global Consultation).

12. The remainder of this Guidance note covers:

    - Review of existing measurement and research
    - Conceptual options and treatments
    - Recommendations on conceptual treatments
    - Other considerations in advancing the issue

2 Review of existing measurement and research

13. This section of the Guidance Note analyses whether the current version of the SEEA CF covers an integrated framework for monetary accounts. Hence, out of the three main areas covered by the CF – namely (a) physical flows of materials and energy within the economy and between the economy and the environment, (b) the stocks of environmental assets and changes in these stocks; and (c) economic activity and transactions related to the environment (SEEA CF § 2.6) – the focus of this Guidance Note will be on the latter.

14. However, the initial part of the assessment can also benefit from briefly reviewing the issue with reference to physical flow accounts. In the SEEA central framework, the representation of the interaction between the environment and the economy in physical flows is largely based on a conceptual framework consistent with one of the frameworks used in the SNA, namely physical supply and use tables (PSUT). PSUT retain the supply and use identity that holds in monetary terms and, in addition, are based on a second identity that "requires that the total flows into the economy, or an enterprise or household, over an accounting period, either are returned to the environment or accumulate in the economy." (SEEA CF §2.45) PSUT provide a comprehensive description of the interaction between the economy and the environment covering flows of material and energy <u>between</u> the two dimensions as well as flows <u>within</u> the economy.

Specifically, flows from the environment to the economy are natural inputs provided by the environment to the economy, flows within the economy are materials and energy products being transformed and consumed and flows from the economy to the environment are residuals (e.g. air emissions) leaving the economy and being returned to the environment.

15. Unlike physical flows, the representation of flows relating to environmental activity in monetary terms, exclusively concerns flows within the economy. Specifically, of interest are transactions between economic units – i.e., output, intermediate consumption, final consumption, investments, imports, exports –that may be considered environmental. "Generally, these transactions concern activity undertaken to preserve and protect the environment. Further, there are a range of transactions, such as taxes and subsidies, that reflect efforts by governments, on behalf of society, to influence the behaviour of producers and consumers with respect to the environment." (SEEA CF §4.1). In all cases, this guidance note deals exclusively with actions that have a potential (as it is non measured statistically) beneficial effect on the environment. They are the so-called "responses" in terms of the DPSIR (Driving forces, Pressures, State, Impact, Responses) framework as they describe efforts of the economy to reduce Pressures exerted by the economy itself to the environment or to improve bad environmental conditions (State in the DPSIR). By contrast, possible negative interactions between the economy and the environment are out of scope in this guidance note, but will be elaborated in C3, C6 and C7. Also in the current version of the SEEA CF, monetary accounts do not represent possible negative interactions between the economy and the environment. Those are confined to the physical accounts (dealing with Driving Forces and Pressures in the DPSIR categorization). However, the SEEA-CF refers conceptually to this kind of interaction in § 4.147: "Another perspective that may be taken is whether the size and structure of payments from governments are environmentally beneficial or environmentally damaging. A measure reflecting this perspective is the potentially environmentally damaging subsidy (PEDS), encompassing subsidies and similar transfers that support activities that are considered environmentally damaging. In some definitions, this measure also includes so-called implicit (or indirect) subsidies, such as preferential tax rates. A definition of PEDS is not included in the SEEA." Similarly to taxes, PEDS come into the picture because they can provide an incentive to use products or to undertake activities that damage the environment through the effect they exert on relative prices and regardless the motivation for introducing them, thus adding monetary incentives as Driving forces or Pressures.
16. Environmental activity accounts belong to functional accounts, as they focus on economic activities undertaken for a particular function or purpose. (SEEA CF Chapter 4). In order to define specifically the scope of environmental transactions, the SEEA CF adopts a functional classification – the Classification of Environmental Activities (CEA) (See Table below). Selecting transactions consistent with the CEA out of those recorded within the core national accounts framework, allows to identify an environmental component within the key aggregates of the SNA. In addition to defining the CEA classification, the SEEA CF also introduces relevant concepts and terms for the accounting description of the domain of interest.

Table C2 - 1 - Classification of Environmental Activities: overview of groups and classes

Group	Classes
I: Environmental protection (EP)	1 Protection of ambient air and climate
	2 Wastewater management
	3 Waste management
	4 Protection and remediation of soil, groundwater and surface water
	5 Noise and vibration abatement (excluding workplace protection)
	6 Protection of biodiversity and landscapes
	7 Protection against radiation (excluding external safety)
	8 Research and development for environmental protection
	9 Other environmental protection activities
II: Resource management (RM)	10 Management of mineral and energy resources
	11 Management of timber resources
	12 Management of aquatic resources
	13 Management of other biological resources (excluding timber and aquatic resources)
	14 Management of water resources
	15 Research and development activities for resource management
	16 Other resource management activities

Source: Table 4.1 SEEA CF

17. The SEEA CF covers two accounts based on CEA, the Environmental Protection Expenditure Account (EPEA) and the Environmental Goods and Services Sector account (EGSS), both being consistent with national accounts with some specificities related to the domain of interest. EPEA provides information on the output of environmental protection specific services produced across the economy and on the expenditure of resident units on all goods and services for environmental protection purposes. EGSS provides data on the supply of environmental goods and services for environmental protection and resource management purposes.

18. Of the two, only the EPEA is presented in a full accounting format. Specifically, EPEA is structured in four main, interlinked tables: a combined production and generation of earned income account (previously named generation of income), which presents information on the production of environmental protection specific services by resident producers; a supply and use table for these specific services; a table allowing the calculation of the main aggregate: *national expenditure on environmental protection - NEEP*; a table designed to present the financing of national expenditure on environmental protection. (SEEA CF §§ 4.49-4.50)

19. In addition to EPEA and EGSS, the SEEA CF also covers other transactions of interest, particularly environmental taxes and subsidies.

20. As concerns environmental taxes, their identification is based on a list of environmentally harmful products. They are of interest because, through their impact on prices, they have the potential to influence the behaviour of producers and consumers with respect to the environment, regardless of the intent of the legislator [1].

[1] The consideration of the tax base in the determination of the environmental status of a tax is an exception to the general approach to defining the environmental status on the basis of the purpose of the transaction. (SEEA CF § 4.152).

21. While acknowledging the value of the individual structures of EPEA and EGSS as well as the supply and use and other integrated accounts already covered by EPEA for environmental protection services, the accounting, research and users' community has long highlighted the value added of an overall conceptual framework encompassing all products and environmental purposes.

22. The desired comprehensive monetary environmental accounting framework cannot be immediately derived from the existing EPEA and EGSS accounts, due to the differences among them concerning the accounting structure, scope, coverage of environmental activities and products. This is clarified in the Table below.

Table C2 - 2 - Comparison of SEEA CF EPEA and EGSS

Area of difference	EPEA	EGSS
Accounting structure	Full functional accounts	Table of production related statistics
Coverage of environmental activities	Environmental protection characteristic activities	Production of goods and services used for environmental protection and resource management
Coverage of goods and services	All environmental protection goods and services and expenditure on other goods and services for environmental protection purposes	All environmental protection and resource management goods and services
Coverage of environmental producers	Producers included only in relation to environmental protection specific services	Producers included in relation to all environmental goods and services
Valuation of adapted goods	Net/extra cost only	Full value (at basic prices)
Coverage relating to international trade	Imports included in aggregate measures of expenditure	Exports included in aggregate measures of production
Treatment of taxes and subsidies	Valuation of expenditure at purchasers' prices	Valuation of output at basic prices

Source: Table 4.7 SEEA CF

23. Work on the integrated framework for monetary accounts, is linked to the following SEEA CF update issues: C1 – Inclusion of the Classification of Environmental Purposes (revised CEA), C3 – Extended scope environmental activities and C4 on primary and secondary purpose.

24. The main reference on the issue of developing an integrated framework for monetary environmental accounts is the proposal presented by Eurostat in 2018 and endorsed by the SEEA CF Technical Committee. It includes a set of Supply and Use Tables (SUT), and two flows accounts: Production and Expenditure. In order to build the accounts in the integrated framework on a common basis, the proposal also covers a set of concepts and definitions as well as a set of specific features, namely scope, variables, valuation rules and classifications used.

25. Section 3 below draws extensively from the existing proposal while also considering relevant developments that occurred in the meantime, such as the adoption of the new Classification of Environmental Purposes (CEP) as an international statistical classification.

26. Suggestions and recommendations deriving from pilot studies carried out to build an experimental integrated framework for monetary accounts will also be considered.

27. Concepts relevant for the discussion of Issue C2 might also be covered by International Working Groups. This is the case, for example, of the G20 Data Gaps Initiative - Recommendation 6 and 7 that aim at developing comparable indicators respectively on climate-sustaining and climate-

damaging subsidies and on climate mitigation and adaptation expenditure. Section 3 below considers possible relevant definitions and discussions emerged in that context.

3 Conceptual options and treatments

28. This section is mainly devoted to recall the content of the original proposal by Eurostat (2018) already endorsed by the SEEA CF. The layout of the integrated Framework includes a set of Supply and Use Tables (SUT) and two flow accounts: Production and Expenditure. To build the accounts in the integrated framework on a common basis, the proposal also covers a set of concepts and definitions as well as a set of specific features, namely scope, variables, valuation rules and main classifications used. Finally, the proposal analyses the extent to which current SEEA CF activity accounts allow to populate the integrated framework tables and proposes some changes to the status quo. The sections below summarise the proposal, presenting in turn: the integrated framework accounts, the main concepts and methodological features. Changes proposed to individual SEEA CF accounts are described in Section 4.

29. The proposed layout of the integrated Framework presented here covers: SUT, Production Accounts and Expenditure Accounts.

30. The **Supply Table** provides the value of available environmental products (resources) either produced within the economy (by groups of economic activity) or imported. Non environmental products are not covered by the Table. In detail the following variables are included in the Supply Table:

    - Output at basic prices, by ISIC (International Standard Industry Classification) categories
    - Imports
    - Taxes and subsidies on products
    - Trade and transport margins
    - Total supply at purchaser's prices (sum of the previous components)

31. In the original proposal each variable is cross classified by classes (or groups of classes) of the Classification of Environmental Protection Activities (CEPA) and the Classification of Resource Management Activities (CReMA) and by kind of product (specific and cleaner/resource efficient products). Due to the adoption of the CEP as an international classification, in the simplified Supply Table presented below reference is made to an individual CEP group [2]

Table C2 - 3 - Simplified Supply Table for an individual CEP group

Products	**Output by ISIC industry** *(basic prices)*				**Imports**	**Taxes less subsidies on products**	**Trade and transport margins**	**Total supply** *(purchaser's prices)*
specific products								
cleaner/resource efficient products								

32. The **Use Table** describes who uses the environmental products made available and for what kind of use (intermediate consumption, final consumption, investments, exports). Non environmental products are not covered by the Table. In detail the following variables are included in the Use Table:

[2] In the CEP, groups correspond to the second level of the classification. They allow to maintain the correspondence with the two main types of SEEA environmental activities, namely environmental protection and resource management (with the exception of CEP 08 Cross-cutting and other environmental purposes).

- Intermediate consumption, by ISIC category
- Final Consumption, by General Government (GG) and Households
- Gross capital formation by General Government, specialized/secondary and ancillary producers
- Exports
- Total use at purchaser's prices (sum of the previous components)

33. In the original proposal each variable is cross classified by classes (or groups of classes) of the CEPA/CReMA and by kind of product (specific and cleaner/resource efficient products). Due to the adoption of the CEP as an international classification, in the simplified Use Table presented below reference is made to an individual CEP group:

Table C2 - 4 - Simplified Use Table for an individual CEP group

	Intermediate consumption by ISIC industry				**Final consumption**		**Gross capital formation**			**Exports**	**Total use** *(purchaser's prices)*
Products					General Gov.	Households	General Gov.	Specialized & secondary producers	Ancillary producers		
specific products											
cleaner/resource efficient products											

34. The **Production Account** presents information on the output of environmental goods and services (EGS) by the economy (in the top part) and how much of this output is available for uses by resident units (in the bottom part). Transactions mainly relate to producers of environmental products broken down by specialist producers, other producers and government producers. For specialist producers the production of environmental products is the principal activity. Other producers cover non-specialist producers, that produce environmental products as secondary output while having a non-environmental principal activity, as well as own-account producers. Output is broken down by market, non-market and own account output. The table also shows non environmental producers and households for the sake of completeness as well as for consistency with the structure of the expenditure account; no transaction in the production account is relevant for these two sectors. The top part of the account is a combined production and generation of earned income account ((previously named generation of income, see also SEEA CF table 4.2). Total output less the sum of intermediate consumption equals value added. The account also shows how gross value added is distributed to the production factors as income. All these variables follow the definitions of SNA and can thus be compared with the corresponding variables from SNA for the whole economy or for each sector. The last row of the Table reports employment related to environmental products, measured in jobs, full-time equivalents or persons employed. The bottom part of the account calculates how much environmental output is available for national uses by adding imports, subtracting exports and making the transition to purchasers' prices, which are used in the expenditure account. In addition to total intermediate consumption of producers of EGS (reported in the first row), the Table also accounts for the intermediate consumption of EGS by environmental producers. As further clarified below in the description of the expenditure account, this amount needs to be excluded from total national expenditure on environmental products, as it is already included in the expenditure of other units purchasing the environmental protection goods and services. For this reason, in addition to EGS available for all uses, the Table also shows EGS net of intermediate consumption by EGS producers, named 'EGS available for uses by resident units other than domestic intermediate consumption for the production of environmental products'. Finally, a correction item allows a

second valuation of output, with cleaner products valued at extra costs[3], as required in the national expenditure aggregate.

35. In the original proposal the production account refers to an individual environmental (CEPA/CREMA) class. Due to the adoption of the CEP as an international classification, the production account presented below refers to an individual CEP group. Please notice that all items concern an individual CEP group with the exception of 'intermediate consumption of EGS (-)' that relates to all CEP groups.

[3] These are the costs necessary to make a product cleaner than its less environmentally friendly alternative, thus making the cleaner product more expensive.

Table C2 - 5 - Production Account for an individual CEP group

		Corporations			Government	Households	Rest of the world	TOTAL
		EGS producers		non-EGS producers				
		specialist producers	other producers					
Intermediate consumption of producers of EGS (at purchasers' prices)								
Value added of producers of EGS								
	Compensation of employees							
	(Other) Taxes on production (+)							
	(Other) Subsidies on production (-)							
	Consumption of fixed capital							
	Net operating surplus							
EGS output (basic prices)								
breakdown by type of output								
	market output							
	non-market output							
	own account output							
breakdown by type of product								
	specific products							
	cleaner/resource efficient products							
VAT and other taxes on EGS (+)								
Subsidies on EGS (-)								
Trade and transport margins								
Imports of EGS (+)								
Exports of EGS (-)								
EGS available for uses by resident units (at purchasers' prices)								
Intermediate consumption of EGS (-)								
consumption for the production of EGS **(purchasers' prices)**								
	Correction for valuation of cleaner and resource-efficient products at extra costs (-)							
EGS available for uses by resident units other than domestic intermediate consumption for the production of EGS **(at purchasers' prices; cleaner products valued at extra costs)**								
Supplementary item:	Employment of producers of EGS (jobs or full-time equivalents)							
	= not applicable							

36. The **Expenditure Account** describes how much the institutional sectors of the economy spend for environmental purposes. In the original proposal the expenditure account refers to an individual environmental (CEPA/CREMA) class. Due to the adoption of the CEP as an international classification, the simplified expenditure account presented below refers to an individual CEP group:

Table C2 - 6 - Expenditure Account (at purchaser's prices) for an individual CEP group

	Corporations			Government	Households	Rest of the world	TOTAL
	EGS producers		non-EGS producers				
	specialist producers	other producers					
Intermediate consumption on EGS (amount to be recorded in the NEEP)	n.i.						
specific environmental products	n.i.						
cleaner/resource efficient products	n.i.						
Final consumption on EGS							
specific environmental products							
cleaner/resource efficient products							
Gross fixed capital formation on EGS							
specific environmental products							
cleaner/resource efficient products							
TOTAL use of EGS by resident units							
Gross fixed capital formation (on non-EGS) for EGS production							
Acquisition less disposals of non-financial, non-produced assets for EGS production							
Transfers not included in the total use of EGS							
Transfers to the rest of the world (+)							
Transfers from the rest of the world (-)							
National expenditure on environmental products (1)							
Supplementary item							
Intermediate consumption of EGS by EGS producers (total amount)							
Environmental subsidies on production							
Social contributions and benefits							
Other current transfers							
Capital transfers							
Earmarked taxes							
National expenditure on environmental products (2)							

n.i.=not included

37. The top part of the account reports the different variables that contribute to expenditure on environmental products by resident units, namely intermediate consumption, final consumption, gross fixed capital formation. As noticed in the description of the Production account, some environmental products may be used as intermediate consumption during production processes to create new environmental products, which may reach a final use either as final consumption or as gross fixed capital formation. The value of environmental products purchased for final uses includes the intermediate consumption of EGS. If the NEEP included both the value of EGS used as intermediate consumption AND the value of environmental products in which they are incorporated when purchased as final consumption or gross fixed capital formation, there would be double counting. In order to avoid that, the intermediate consumption in EGS used by EGS producers for the production of EGS should be excluded from NEEP.
38. In general terms, for environmental producers, *a share of* intermediate consumption of environmental products is used for the production of EGS. The share can be equal to 1 in case of producers that only supply environmental products or be <1 in case of environmental producers that supply non-environmental products as well. This share, i.e. the intermediate consumption of environmental products used for producing environmental products, is the amount not to be

accounted for in the NEEP. In the Table above, for specialist producers, intermediate consumption on environmental products contributing to NEEP is reported as 'n.i.' that is 'not included', under the simplifying assumption that, for specialist producers, all intermediate consumption of environmental products is for the production of environmental products (and not for non-environmental products as well), i.e. that the share is 1. For the sake of completeness the full value of intermediate consumption of environmental products by specialist producers is reported in the 'Supplementary item' that does not contribute to NEEP. For other, non-specialist producers, the share of intermediate consumption of environmental products used for producing environmental products is <1. For this reason the amount of intermediate consumption to be recorded in the NEEP (row 1) will be >0 but less than the full amount of intermediate consumption reported in the supplementary item. This occurs because also in the case of non-specialist producers the part of intermediate consumption of EGS used for the production of EGS is already part of the value of the output of environmental products purchased by users and reporting both in the NEEP would lead to double counting. For non-environmental producers, the share of intermediate consumption of environmental products used for producing environmental products is 0 by definition and the entire amount of their intermediate consumption of environmental products contributes to the NEEP (row 1).

39. The environmental expenditure may concern specific environmental products or cleaner/resource efficient products. For cleaner/resource efficient products, which do not serve a primary environmental protection purpose, the integrated framework is foremost interested in the 'environmental share' of their value, which can be measured by the extra cost of the cleaner/resource efficient product compared to an equivalent normal product. This principle is known as extra costs valuation. Intermediate consumption, final consumption and gross fixed capital formation of cleaner/resource efficient products must be valued at extra costs. Expenditure on specific products is valued at their full costs instead.
40. The second part of the account shows additional items that contribute to National expenditure on environmental products. They are: gross fixed capital formation (Gfcf also known as investments) for the production of environmental products, acquisition less disposals of non-financial non produced assets and the net balance of environmental transfers to and from the rest of the world . Gfcf are investments in all categories of products that are needed for producing environmental products. Since Gfcf concerns by definition fixed assets (i.e. produced assets, such as machinery) a specific entry is devoted to acquisitions less disposals of non-produced assets, i.e. mainly land.
41. Transfers to and from the RoW are financing flows for international cooperation in the environmental field. SNA uses the concept 'transfers' for financing flows, i.e. a transfer is a transaction in which one institutional unit provides a good, service or asset to another unit without receiving from the latter any good, service or asset in return as a direct counterpart. This includes current transfers and capital transfers, the latter involving the change of ownership of an asset. Transfers are recorded only insofar as the expenditure is not already recorded in other items. Transfers can be financed either by the government, international organizations, corporations or by households through non-governmental organizations.
42. The row titled "National expenditure on environmental products (1)" reports the expenditure by institutional sector regardless of who actually bears the costs. The subsequent rows allow to calculate how much each different sector contributes to the financing of the national environmental expenditure. For this reason, the second row titled "National expenditure on environmental products (2)" differs from the first one as regards the distribution by sectors.

43. The item 'Intermediate consumption of EGS by EGS producers (total amount)' is identical to the item 'Intermediate consumption of EGS (-)' in the production account. As stated above, unlike other items that concern products of an individual CEP group, it covers not only products of the same CEP, but also products belonging to other CEPs '.
44. Individual accounts contributing to the integrated framework are, the already mentioned Environmental goods and services sector account (EGSS) and the Environmental protection expenditure account (EPEA) extended to Resource management, and, in addition, the Environmental subsidies and other transfers account (ESST). By contrast, environmental taxes are excluded from the proposal. This is due to the high degree of homogeneity of the three selected accounts in the current version of the SEEA CF and also to the opportunity for further improving their consistency through the introduction of common definitions and concepts as specified in the following sections.

45. The extension of the integrated framework to physical environmental accounts in the SEEA CF is not foreseen at present.

46. A fundamental requisite to build the accounts in the integrated framework on a common basis, is to define a set of concepts and definitions as well as a set of specific features, namely scope, variables, valuation rules. The main definitions are summarised below.

47. **Environmental products.** The original proposal makes a distinction between *environmental products* – covering both products for environmental protection and for resource management – and other, non-environmental products. Furthermore, environmental products can be distinguished according to which is their primary purpose. Products whose only purpose or primary purpose is environmental can be called *primary purpose* environmental products, or *specific* environmental products. *Cleaner/ Resource-efficient* products are those non-specific environmental products which serve a *secondary* environmental purpose because they prevent pollution or environmental degradation/ natural resource depletion compared with equivalent 'normal' products (otherwise said: their secondary purpose is environmental protection/resource management). The secondary purpose products are a specific innovation of the integrated framework. The introductory notes to the CEP classification provide the same definition of environmental products, also with some examples: two examples of specific products are sewerage services and collection, treatment and disposal services for waste, electric vehicles are an example of a cleaner product. This definition can be maintained in the context of this guidance note. Changes ensuring consistency with revisions introduced in the scope need to be considered.

48. **Environmental activities**. SEEA-CF encompasses Environmental protection activities (EP activities) and Resource management activities (RM activities) defined according to SEEA-CF (§§ 4.12 and 4.13) defined as all activities and actions which have as their main purpose respectively the prevention, reduction and elimination of pollution and of any other degradation of the environment, and preserving and maintaining the stock of natural resources. The proposal for an integrated framework specifies that environmental activities encompass both activities that directly serve an environmental purpose (also called characteristic environmental activities) and activities which do not directly serve an environmental purpose but which produce specifically designed products whose use serves an environmental purpose (also called non-characteristic environmental activities). Only the production of a service can be a characteristic activity, because only the production of services can directly serve an environmental purpose. In other words, the output of a characteristic activity is a specific environmental service. The introductory notes to the CEP classification provide the same definition of characteristic and non-characteristic

activities, also clarifying that the latter are not explicitly referred in SEEA CF and correspond to the intuitive concept of secondary purpose activities, but they are formalised without introducing the secondary purpose. Indeed, non-characteristic activities can never have a primary environmental purpose. On the other hand, the output of such activity can be a good with a primary environmental purpose. The introductory notes to the CEP also present an example of characteristic environmental activity, waste management, and of non-characteristic activity, the construction of low-energy buildings. This definition can be maintained in the context of this guidance note. Changes ensuring consistency with revisions introduced in the scope need to be considered.

49. **Environmental expenditure.** The original proposal for an integrated framework does not provide a specific definition of environmental expenditure although this aggregate is implicitly defined by the items included in the accounts (see particularly the expenditure account table above). The introductory note to the CEP provides a definition, specifying that environmental expenditure consists of two main components: expenditure *on* environmental products e.g. purchase of solar panels; expenditure incurred *for* environmental (production) activities (the latter also covering non-environmental products). The expenditure considered covers both final uses (final consumption, gross fixed capital formation) and intermediate consumption. Expenditure can be incurred by corporations, households or government (the latter frequently aggregated with non-profit institutions serving households - NPISH).

50. **Valuation for cleaner and resource-efficient products**. The proposal presents a double valuation at full costs and extra costs for cleaner and resource-efficient products. This is to facilitate balancing of supply-demand and for different types of analysis.

51. As for related international initiatives in this field, the G20 Data Gap Initiative – Recommendations 6 on climate relevant subsidies and 7 on Measuring Climate Change Mitigation and Adaptation Expenditures are broadly consistent with the definitions above although still in the process of finalising key concepts.

4 Recommendations on conceptual treatments (3-4 pages)

- Propose recommendations to address the issue (based on the options described under section 3). As appropriate, note connections and potential implications for other issues being considered in the update process.

52. On the basis of the proposal presented under section 3, this section provides some recommendations for the revision of SEEA CF with regard to the specific issue "Integrated Framework for environmental activity accounts.

53. **Framework**. It is recommended to include in the SEEA CF the set of four accounting Tables originally presented in the Eurostat proposal with the substitution of the CEPA/CReMA classification with the CEP, namely:

54. Supply Table structured as in Table C2 - 3 by CEP group and product

CEP group and type of product	Output by ISIC industry				Imports	Taxes less subsidies on products	Trade and transport margins	Total supply
CEP 01								
specific products								
cleaner/resource efficient products								
CEP$_i$								
specific products								
cleaner/resource efficient products								
CEP 08								
specific products								
cleaner/resource efficient products								

55. Use Table structured as in Table C2 - 4 by CEP group and product

CEP group and type of product	Intermediate consumption by ISC industry				Final consumption		Gross capital formation			Exports	Total use
					General Gov.	Households	General Gov.	Specialized & secondary producers	Ancillary producers		
CEP 01											
specific products											
cleaner/resource efficient products											
CEP$_i$											
specific products											
cleaner/resource efficient products											
CEP 08											
specific products											
cleaner/resource efficient products											

1. Production Accounts structured as in Table C2 - 5 by CEP group
2. Expenditure Accounts structured as in Table C2 - 6 by CEP group

56. **Concepts and definitions**. It is recommended to adopt the definitions of environmental products, environmental activities, environmental expenditures specified in section 3. Changes ensuring consistency with revisions introduced in the scope need to be considered.

57. **Valuation**. It is recommended to adopt a double valuation – FULL COST and EXTRA COST – for cleaner and resource efficient goods, although in practice the EXTRA COST might be quite hard to determine.

58. **Implications for existing modules**. A full treatment of existing EPEA and EGSS modules goes beyond the scope of this guidance note. In this context it is important to recall that each of the two modules has a clear rationale to justify its specific features and significant amendments are not planned in the context pf the SEEA CF revision. Nevertheless, possible adjustments to the existing modules might be considered in relation to the introduction of the integrated framework.

59. **Bridging items**. It is recommended to introduce bridging items to explain the difference between aggregates in the accounts that might have the same denomination but a different meaning. One example would be 'intermediate consumption' which appears in the use table, in the production and in the use account but does not always reflect the same concept. In addition, bridging items

might be needed to clarify possible differences of coverage between the integrated framework and the individual accounts Epea and Egss. They might concern, for example, the coverage of products, encompassing goods and services in the case of the integrated account and services only in the current structure of Epea. Potential changes in the Epea and Egss coverage and scope need to be considered when structuring the bridging items.

- List the sections/paragraphs of the SEEA CF that need to change or where additional content is required

60. [to be compiled]

- Where possible and appropriate provide proposed text for inclusion in the revised SEEA CF (This content is not required for the initial drafts and, depending on the issue, it may not be possible to propose text ahead of Global Consultation, i.e. until there is more clarity on the option to be incorporated.)

5 Other considerations in advancing the issue

61. **Indicators**. The accounts proposed for the integrated framework allow to derive the indicators listed below. Each indicator can be broken down by CEP group and institutional sector.

62. EGS output – % of total economy output. Output is the result of economic production. Production is an activity, carried out under the responsibility, control and management of an institutional unit, that uses inputs of labour, capital, and goods and services to produce outputs of goods and services. In the integrated framework output relates to environmental activities or environmental products, as defined by the SEEA CF scope.

63. EGS gross value added - % of GDP. Gross value added is the value of output less the value of intermediate consumption. Intermediate consumption are the goods and services used up when producing EGS output. While adding output of producers implies by definition double-counting, this is not the case when adding the gross value added of producers. By construction, the difference between EGS gross value added and output is the intermediate consumption of the environmental producers.

64. EGS employment – % of total economy. EGS employment includes both employees and self-employed persons, engaged in some productive activity that falls within the scope of EGS. If an EGS producer is also engaged in non-environmental activities only the share of employment relating to the environmental production is to be recorded in EGS employment. Employment can in principle be measured in jobs, hours worked or full-time equivalents. The full-time equivalent is the number of full-time equivalent jobs, defined as total hours worked divided by average annual hours worked in full-time jobs. Since environmental activities may be performed on a part-time basis (jobholders may be engaged indistinctively in environmental and non-environmental activities in the same job), full-time equivalent is the suggested unit of measure.

65. National expenditure on environmental products – NEEP - % of GDP. NEEP measures the economic resources devoted to environmental activities by resident units (i.e. net of funding received from the Rest of the world). It is defined as the sum of: purchase of EGS for final consumption or intermediate consumption (excluding intermediate consumption of EGS by specialist producers), gross fixed capital formation and acquisition less disposal of non-financial, non-produced assets for EGS production (i.e. investments for environmental activities on EGS and non-EGS by producers of EGS); gross fixed capital formation on EGS equipment and machinery by

non-EGS producers i.e. corporations investing to reduce the environmental pressure caused by their own production processes; net balance of environmental transfers to and from the rest of the world.

66. Main **key terms and definitions** for inclusion in the SEEA CF Glossary are: environmental products, environmental activities, environmental expenditure, production account, expenditure account, full cost valuation, extra cost valuation. They can be derived from the definitions provided in the Sections above.

67. Some **compilation guidance** for the integrated framework is provided by Eurostat (2018). It needs to be developed in light of recent developments, specifically the adoption of the CEP and the changes proposed in this guidance note in the production and expenditure accounts.

68. The examples of integrated framework Accounts presented in this document make reference to an individual CEP group. Although the integrated framework does not make explicit reference to environmental protection or resource management, the reference of the integrated framework accounts to the group level of CEP allows to single out environmental protection or resource management categories. The only exception is obviously represented by CEP 08 Cross-cutting and other environmental purposes as it refers to activities that are traversal to the whole classification that includes both resource management and environmental protection (namely: administration, management as well as education, training and information). In addition, the integrated framework can also be developed for specific policy issues. One possible starting point is the mapping between CEP and policy issues developed in Eurostat (2024) for the six environmental objectives defined by the EU Taxonomy regulation: climate change mitigation, climate change adaptation, sustainable use and protection of water bodies, circular economy, pollution prevention and control, and protection and restoration of biodiversity and ecosystem. The exercise shows that while some CEP categories are fully included in the aggregates to be estimated for the various policy issues, other CEP categories are partially included and additional calculations are necessary, for instance calculating and applying shares. Moreover, certain activities relevant for an individual policy issue are beyond the current scope of SEEA CF, and thus they are not covered by CEP. This is the case, for example, of climate change mitigation activities related to the production of crops for energy use, to the transmission and distribution of energy or public transport.

6 References

- Eurostat [2018] *Integrated framework for environmental activity accounts*, presented at the 13th meeting of UN Committee of Experts on Environmental-Economic Accounting (UNCEEA), New York, 21-22 June 2018, https://seea.un.org/events/thirteenth-meeting-unceea
- Eurostat [2024] Classification of environmental purposes (CEP). https://unstats.un.org/UNSDWebsite/statcom/session_55/documents/BG-4e-CEP-E.pdf -
- Federal Planning Bureau [2019] Testing EPEA and EGSS in an integrated monetary EEA framework. An application for Belgium. Final Report delivered to Eurostat. https://circabc.europa.eu/ui/group/b01d2930-990e-44fb-9121-a9a6b00a1283/library/20217384-dc5e-4a23-9b45-f7f941abcbc8/details
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