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Classification of environmental activities

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Abstract: *The SEEA CF research agenda has two interrelated items about the definition of resource management and implementation of the classification of environmental activities (CEA). Eurostat, as the lead agency for those two items, is engaged into a project to review them. This project has a long time schedule because international classifications involve statisticians beyond environmental accountants and require more coordination and discussion. This might be achieved in late 2021 or early 2022 with the approval of a revised CEA as international classification by UN Statistical Committee.*

In parallel, and with shorter delivery date, European compilers need guidelines about implementation of the CEPA and CReMA classifications used in current data collections. A Eurostat task force of European compilers is updating explanatory notes for CEPA and developing them for CReMA. The goal is to provide guidance to European compilers ideally for data collections taking place in 2019. This task force is also providing input to the long term review of CEA in particular by considering options for an integrated classification of environmental protection and resource management activities.

This document reports progress on this work and seeks a discussion by the London Group of experts about some questions identified by the Eurostat task force.

1. Introduction

The SEEA CF research agenda includes two separate items related to the classification of environmental activities and resource management, as follows:

- **Definition of resource management.** The SEEA CF research agenda explains: *'The finalization of the definition of resource management activity for the purposes of the Central Framework was complicated by a lack of clarity on the ideal scope of the resources that should be considered. In some circumstances, limiting consideration only to natural resources seemed appropriate, while in other cases, the inclusion of cultivated resources seemed relevant.'*
- **Implementation issues related to the classifications of environmental activities (CEA).** CEA is presented in Annex 1 of the SEEA CF. There are three types of issues. First, for some environmental activities it is not directly clear whether they belong to environmental protection (EP) or resource management (RM), addressed respectively in the classifications CEPA and CReMA. An example is climate change related activities which are related both to CEPA1 and CReMA 13. Secondly, since 2012, when SEEA CF was approved, there has been progress in Europe about CReMA as it is used in existing data collections. Based on this practical experience CReMA has moved away from the classification in SEEA CF Annex 1. It is time to take stock from these lessons. Thirdly, more work is needed to ensure that CEA has the status of international classification.

These two issues are interrelated because the scope of resource management determines the range of categories covered in the classification of resource management (CReMA), and vice versa.

Even though the functional classification devised for environmental protection activities (Classification of Environmental Protection Activities and Expenditure; CEPA) is a well-established classification, compatible with other functional classifications (e.g. COFOG), and recognised by all international statistical agencies, the definition of resource management and classification of related activities necessitates further development and discussion within the statistical community. For this reason, the status of the classification of the environmental activities relating to resource management has been indicated as '*interim*' in SEEA CF and the two matters have been added to the SEEA CF research agenda.

Eurostat, being the lead agency for those two items in the research agenda, is engaged in a process to review the CEA with a view to address outstanding conceptual issues and, ideally, to achieve for CEA the status of international classification. This is a long-term goal which requires the engagement of statisticians beyond the SEEA community, namely classification statisticians, and the approval of the UN Statistical Committee.

In addition to those long-term developments, Eurostat has an interest in a shorter-term, yet also demanding objective, namely to provide guidance to European countries in their current data collections on EP and RM activities. There are two mandatory data collections in Europe - EGSS (which uses CEPA and CReMA) and EPEA (which uses CEPA) - and there is interest to launch a pilot ReMEA data collection (which uses CReMA). Experience over a number of years of (pilot) compilation of EGSS and EPEA in European countries shows that existing guidance needs further development, in particular on the treatment of borderline cases between CEPA and CReMA, borderline cases within CEPA and on the scope of both resource management activities and environmental protection activities. Ultimately this work may also serve a broader purpose and inform compilers beyond the EU.

Questions to the London Group:

- In your view, how should we proceed to improve guidance on the use of the main purpose criterion (paper section 3.1): should further work focus on specific examples of how the main purpose criterion is to be applied or rather focus on refining overall conceptual questions?
- Do you have knowledge of analyses of a) boundary cases between environmental domains, or b) challenges in determining scopes of environmental domains as presented in section 3.2?
- Do you have a view about extending the scope of CReMA (and specifically CReMA 11) to include also cultivated natural resources, in particular considering arguments presented in section 3.2?
- Do you have experience with the implementation of the concept of substitution of natural resources when compiling CReMA (section 3.2)? If so, how do you apply it?
- In your opinion, is it important to retain the distinction between environmental protection and resource management environmental activities, from the perspective of a) conceptual clarity and b) users' needs (section 3.3)?
- Do you see other options, than the two considered by the Task Force to proceed in developing an integrated system of classification of environmental activities (section 3.3), namely either 1) a small revision enhancing CReMA as a classification of RM to complement CEPA, keeping CEPA largely untouched; or 2) a new classification system merging CEPA and CReMA and redefining classes across EP and RM?

2. The Eurostat task force

In the second half of 2017 Eurostat set up a task force to review the existing classifications of environmental activities based on hands-on experience in Europe. The task force also aims to discuss and propose a uniform structure for the environmental protection and resource management parts of the functional classification for monetary environmental accounts. The Task Force supports Eurostat's work on the clarification of guidance for the recording and reporting of environmental activities and products in the existing data collections about EGSS and EPEA, in particular:

- Taking stock of experience in Europe with the use of existing classifications, related methodological work and outstanding practical data-compilation issues,
- Setting and clarifying general classification principles e.g. definition and application of main purpose criterion (technical nature), scope restricted to non-produced natural assets, comparability across countries vs customisation per country,
- Updating and improving the descriptions in the explanatory notes for CEPA and CReMA for use in Europe,
- Proposing a specific recording conventions whenever necessary, facilitating cross-country comparability of relevant statistical data,

- Clarifying links with related classifications, e.g. NACE (i.e. the European version of ISIC) and COFOG,
- Reviewing the relevance of breakdowns used for environmental policy priorities e.g. sustainability, resource efficiency, circular economy, climate change (mitigation).

Moreover, the Task Force undertakes the following activities to pave the way to advancing the SEEA research agenda on the issues of CEA classification and definition of RM:

- Reviewing the structure and definitions of CEPA, CReMA and the SEEA CEA, identifying areas for further development,
- Discussing the scope of environmental activities, clarifying possible borderline cases with related activities, e.g., resource extraction, resource use,
- Clarifying the scope of resource management activities in relation to environmental protection activities, pointing out and putting forward suggestions for the treatment of borderline cases EP-RM,
- Reviewing the structure of the RM part of the classification, in particular what the leading classification principle should be: (i) a resource to be protected or (ii) an overall purpose of a resource management activity (a transversal approach)
- Assisting Eurostat in a global consultation and approval process, involving the London Group on environmental accounting, the UN Committee of Experts on Environmental-Economic Accounting (UNCEEA) and the UNSD.

The following countries contribute to the task force: Germany, Spain, France, Luxembourg, the Netherlands, Austria, Sweden, Italy and Portugal. The task force met so far in September 2017 and in June 2018. Another meeting will take place in late November 2018. In addition, tele/videoconferences may become a regular feature of the work of the Task Force in between meetings.

At its first meeting, the Task Force discussed difficulties in the use of the existing classifications of environmental activities for data collection, compilation, reporting and dissemination, requirements that the future integrated classification should satisfy to serve properly all its purposes and the scope of the future work of the Task Force. The following specific issues were discussed:

- A list of open classification cases or boundary issues for which the guidance is not yet available or of which practical implementation is not feasible;
- Information about specific problems encountered with application of the main purpose criterion rule when (cross-)classifying the environmental accounts data by environmental domain and (provisional) solutions followed/considered (if any) for the data compilation;

At the second meeting of the Task Force, discussions focused on a number of points central to short-term improvements of the quality of monetary environmental accounts data, including:

- Various data compilation practices and their impacts on cross-country data comparability,
- Specific boundary cases and scope issues,

- Information about what is actually reported in the categories CEPA 9 and CReMA 16 , which are other/n.e.c. categories, and/or how the residuals are calculated,
- A review of CEPA and CReMA explanatory notes.

Apart from that, the Task Force discussed eight sketched versions of an integrated classification of environmental activities put forward by its members.

3. Main issues identified by the task force

The following subsections provide a brief summary of main issues, conclusions and further steps discussed and reached at the last meeting of the Task Force.

3.1. Main purpose criterion¹

The concept of the main or primary purpose is central to the compilation of environmental economic accounts. SEEA CF introduces it to determine whether an activity falls under the definition of environmental activity and if so, in which environmental domain it is to be allocated. The main purpose criterion has been elaborated on more in-depth in Eurostat's handbooks on EPEA and EGSS². These elaborations recognize that a certain degree of subjectivity exists and the goal is to limit the subjectivity. These analyses served as a starting point for the discussion of the Task Force.

Some of the points and arguments discussed by the Task Force to date are as follows:

- Interpretation of the term "technical nature" (technical nature of the manufacturing process or the technical features of the product?) and difficulties associated with their description or identification, requiring a detailed understanding of a broad range of technological processes,
- Using technical nature as a criterion may have implications by extending the scope of environmental activities, including activities with beneficial impact on the environment irrespective of whether motivated by environmental concerns or e.g. by economic considerations; on the other hand, using technical nature as a criterion may clarify the treatment of cases where pure environmental purpose was often difficult to justify (e.g. energy-saving activities being probably more motivated by reducing energy bills),
- Treatment of activities with ambiguous impacts, i.e. serving certain environmental purpose with a detrimental effect on other environmental assets (e.g. hydropower producing energy from a renewable source (CReMA 13A), yet often having adverse effects on biodiversity (CEPA 6),

¹ https://circabc.europa.eu/sd/a/2441d189-138e-4ff4-8e5c-d30a35d0fe3f/2TF_CEA_4_Main%20Purpose%20Criterion.pdf

² For consistency and comparability across countries, the EGSS Handbook has proposed the technical nature of the activity to be the criterion to be used by European compilers "whatever the stated motivations and presumed (assumed environmental consequences of an activity or action) or real (objectively proven consequences on the environment of an activity or action) effects are."

- Treatment of activities serving two or more environmental purposes simultaneously e.g., energy saving (CReMA 13B) and noise abatement (CEPA 5).

An important finding from the work yet is that compilers are generally interested in specific compilation issues and examples rather than broad theoretical guidance. This indicates that any further conceptual work on the main purpose criterion must focus on specific cases and applications. One of the possible ways forward identified was a development of specific classification criteria or a decision tree to facilitate the application of the main purpose criterion, taking into consideration the EGSS operational list as an existing set of conventions and specific cases.

The topic of main purpose criterion could not be concluded yet and it remains on the agenda for the future work of the Task Force.

- ***Question for the LG:** In your view, how should we proceed to improve guidance on the use of the main purpose criterion: should further work focus on specific examples of how the main purpose criterion is to be applied or rather focus on refining conceptual questions?*

3.2. Boundary cases³

At the first meeting (September 2017), the Task Force brainstormed on boundary cases. A list was made and the following ones were discussed more in-depth at the second meeting of the Task Force (June 2018):

- Case 1: Electric and resource efficient vehicles
- Case 2: Low energy consumption (passive) buildings
- Case 3: Dismantling of wrecks
- Case 4: Snow and ice removal
- Case 5: Aquaculture and organic aquaculture
- Case 6: Boundary cases CEPA 6 v CReMA 12
- Case 7: Scope of CReMA 11
- Case 8: Boundary case: materials recovery
- Case 9: Substitution of natural resources, materials and products
- Case 10: Demolition waste
- Case 11: Replenishment of water resources

The Task Force agreed that this format of well-structured discussions on specific classification issues was an efficient working method.

- ***Question to the LG:** Do you have knowledge of similar detailed analyses of a) boundary cases between environmental domains, or b) challenges in determining*

³ https://circabc.europa.eu/sd/a/254340ee-274e-44c5-afdb-b409696282a2/2TF_CEA_5_Pending%20scope%20and%20boundary%20cases%20for%20discussion.pdf;
https://circabc.europa.eu/sd/a/35c83728-1669-4fea-932f-2321c15118aa/2TF_CEA_5_Pending%20scope%20and%20boundary%20cases%20Annexes%201%20to%2011.pdf

scopes of environmental domains that could be used as input into the work of the Task Force and to advance the SEEA CF research agenda?

The rest of this section reports on cases 7 – "The scope of CReMA 11" and 9 "Substitution of natural resources, materials and products" and asks specific questions.

Case 7: The scope of CReMA 11 (Management of timber resources)

SEEA CF describes resource management activities as "*those activities whose primary purpose is preserving and maintaining the stock of natural resources and hence safeguarding against depletion.*" In addition, SEEA CF aims to make a clear distinction between natural and cultivated resources; although recognizing that separation of the two in practice might be difficult. In principle, cultivated natural resources, and therefore, cultivated forests⁴, are excluded from the scope of CReMA 11.

The main issue with the scope of CReMA 11 discussed by the Task Force was this limitation of the scope of this domain to non-cultivated forests. Upon a careful consideration, it appears that many of the activities explicitly stated in the Eurostat EGSS handbook to be recorded under CReMA 11A, i.e. forest management, are probably extremely rare in non-cultivated forests or forests not available for wood supply, in a European context. These include reforestation and afforestation, control of weeds, diseases and other pests, activities aiming at measuring and monitoring forest areas and timber stocks. In fact, there is a contradiction between the definition of "non-cultivated forest" and proposed RM activities that are supposed to take place in "non-cultivated forest", as planting and pest control constitute cultivation.

The same issue appears to apply to CReMA 11B, i.e. minimisation of the intake of forest resources. It is not clear how activities included in CReMA 11B relate to forests non-available for wood supply (or non-cultivated forests). Forest resources, in the European context represented by wood, are an outputs from forests available for wood supply and the minimisation of their intake through e.g. recycling, protects wood resources in forests available for wood supply (i.e. those forests supposedly outside the scope of CReMA 11), not resources in forests not available for wood supply

The Task Force has agreed that it was not practical to limit the scope of CReMA 11 to forests not available for wood supply and this item will be elaborated on further by the Task Force later this year examining in detail activities that countries report under CReMA 11A and 11B and proposing ways forward based on their experience.

- ***Question to the LG: Do you have a view on extending the scope of CReMA (and specifically CReMA 11) to include also cultivated natural resources?***

⁴ Experience from European countries suggests that this distinction between cultivated and non-cultivated resources is in many cases not applicable or practical for European forests, given the history of forestry in many European countries and a gradient of the "intensity of cultivation" practised in European forests. For the compilation of the RM part of EGSS, European compilers are recommended to use "forest available for wood supply" as a proxy for cultivated forest and "forest not available for wood supply" as a proxy for non-cultivated forest, and the EGSS handbook and the publicly available draft ReMEA handbook provide an overview of how this conclusion was reached by expert groups.

Case 9: Substitution of natural resources, materials and products

SEEA CF states that RM activities "*include, but are not limited to, reducing the withdrawals of natural resources (including through the recovery, reuse, recycling and substitution of natural resources)...*" and the Eurostat EGSS handbook makes reference to substitution, as means of RM, in the following domains:

- CReMA 10 ("*reduction of the intake by substituting the resource with alternative resources*")
- CReMA 11B ("*the substitution of forest products with other materials and substances*")
- CReMA 13C ("*Production of substitute for fossil fuels based materials: it includes production of bio materials, bio plastics, etc.*")
- CReMA 14 ("*Production of substitute for minerals based materials: manufacturing of vegetal substitutes for cement, stone and plaster*")

Main issues discussed by the Task Force on this matter included the following:

- Lack of clarity as to which substance or activity could be used as a substitute for water, given that, while precious and essential for industrial processes, water is one of the most ubiquitous natural resources on Earth, hence making it difficult to find examples of substance that could replace it,
- Substitution of natural resources to be included in CReMA domains 11B, 13C and 14 appears to include an element of circularity. To address this, a rationale/hierarchic set of principles (considering whether the material comes from renewable sources, non-renewable but easily-recoverable/recyclable sources or non-renewable sources the recycling of which is more difficult) were discussed at the Task Force meeting,
- How substitution is to be valued,
- Possible detrimental impact of the excessive use of materials from renewable sources, to be used as a substitute for other material, on the environment and the treatment of such cases,
- When attempting to extend the set of principles from types of materials to types of products (e.g. single use vs. multiple use ones) the matter becomes rather complex and requires much more thought to achieve internal coherence,
- Another relevant question touched on was substitution of technologies, as opposed to substitution of products or materials, with more environment-friendly ones.

With the exception of removing the reference to substitution from the explanatory notes of CReMA 10 (Water management), discussions on this item could not be finalized at the meeting of the Task Force and will continue.

- **Question to the LG:** *Do you have experience with the implementation of the concept of substitution of natural resources when compiling CReMA? if so, how do you apply it?*

3.3. Design of the future integrated classification of environmental activities⁵

A core question of the Task Force work towards designing an integrated classification of environmental activities is to what extent the future classification system should retain the elements of existing ones. The Task Force discussed pros and cons of a large revision of existing systems as opposed to a small revision. This discussion was underpinned by a detailed examination of existing (or well-advanced) classifications of environmental activities, from the perspective of both compilation and dissemination.

This first exercise helped the Task Force identify the strength and weaknesses of existing classification systems, define (key) features that the future integrated classification should ideally have, and explore how these are linked to or compromised by other features, e.g. the level of aggregation and the balance between "easy to compile when more aggregated" vs. "information being lost when more aggregated".

The work so far is organised in two streams: one, which retains the structure and classes of CEPA, as a classification of EP activities, and aims to improve CReMA, as a complementary system classifying RM activities (hereafter referred to as "small revision"); and second one, where there are no constraints on retaining any features of the existing classification systems (hereafter referred to as "large revision"). This latter has a number of profound implications, including breaks in historical time series of CEPA data, and future merging of EPEA and ReMEA in one single account. The decision for a scenario "large revision" should not be done lightly and unaware of the consequences.

At the June 2018 meeting, the Task Force discussed eight proposals for the future integrated classification of environmental activities. Seven of these did not follow the distinction between EP and RM ("large revision"), whereas one retained CEPA categories and modified CReMA categories, aiming to address difficulties with the use of existing CReMA ("small revision").

The seven "large revision" classifications shared a number of common features, including:

- Proposed classes often used "a resource" to define them, e.g. "Nature" (including CEPA 6, CReMA 12 and CReMA 11A), "Water" (including CEPA 2 and CReMA 10), etc. as opposed to types of activities used in the current classifications CEPA and CReMA
- "Sea and ocean" were explicitly mentioned;
- The categories "Research and development" (i.e. CEPA 8 and CReMA 15) and "Other" (i.e. CEPA 15 and CReMA 16) were combined into a single "R&D" and "Other" categories covering both EP and RM;
- Some proposals for a finer than current disaggregation (e.g. a distinction of renewable energy by source) to meet users' needs.

⁵ https://circabc.europa.eu/sd/a/5fc24dd7-42c4-4619-a8cd-ef4078b02daa/2TF_CEA_7.1_ECEA%20Evaluation.pdf; https://circabc.europa.eu/sd/a/01e3aa3a-c499-4bd5-a13f-4bffa8943e94/2TF_CEA_7.2rev2_Alternative%20classification%20structure_proposals.pdf

The Task Force agreed that all proposals were an improvement compared to the existing classification structure. Next the Task Force will advance narrowing down the number of versions of the classification system to ideally only two – one retaining the breakdown into EP and RM, updating the latest version for the result of the discussion that took place at the meeting – and one combining EP and RM, thus integrating the seven discussed proposals into a single proposal.

- *Questions for the LG: In your opinion, is it important to retain the distinction between environmental protection and resource management environmental activities, from the perspective of a) conceptual clarity and b) users' needs?*
- *Do you see other options, than the two considered by the Task Force and described above (i.e. the "small revision" and the "large revision") for how to proceed in developing an integrated system of classification of environmental activities?*

4. Conclusions

Eurostat is leading the development of two interrelated SEEA CF research agenda items, namely about the definition of resource management and implementation of the classification of environmental activities (CEA). These two issues demand a long time schedule because international classifications involve statisticians beyond environmental accounts and require more coordination and discussion. In parallel to this long term work, Eurostat has set up a Task Force of European countries to provide guidance on some issues with pressing need of clarification. This Task Force is advancing on several fronts. This document presents a number of questions that were discussed or are being discussed at the Task Force. The London Group is invited to share their views and experiences regarding those questions. This feedback will serve as input to advance in the Task Force work and also the SEEA CF research agenda. The London Group will be kept informed on further progress of this work.