

Economic Commission for Europe

Committee on Environmental Policy

Working Group on Environmental Monitoring and Assessment

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Reporting on the Shared Environmental Information System to support a regular process of environmental assessment

Revised assessment framework of the Shared Environmental Information System: Options for the Performance Score

Note by the secretariat

I. Introduction

1. At its sixteenth session (Istanbul, 16–17 April 2015), the Working Group on Environmental Monitoring and Assessment considered the reporting of performance in establishing and operating the Shared Environmental Information System (SEIS),¹ including a concept for a reporting tool and targets for monitoring progress for each pillar (content, institutional cooperation and infrastructure) of SEIS (ECE/CEP/AC.10/2015/2).

2. Following a discussion on targets and performance indicators for measuring progress in developing SEIS throughout 2015, both through the Working Group and the Group of Friends of SEIS, a first practical attempt to calculate national performance scores was carried out for the report on progress in establishing SEIS in support of regular reporting in the pan-European region (ECE/CEP/AC.10/2015/5). This ultimately provided the basis for the performance scores given in the 2016 progress report presented to ministers during the Eighth Environment for Europe Ministerial Conference (Batumi, Georgia, 8–10 June 2016)

3. Considering lessons learned from the review process in 2015, the Working Group at its eighteenth session (28–29 June 2016) made several decisions regarding reporting on progress in establishing SEIS (ECE/CEP/AC.10/2016/2). It was agreed that the secretariat would revise the review criteria and integrate a quality component as part of the assessment framework. This resulted in a revised assessment framework for the mid-term review of SEIS, including a new approach for calculating the performance score (ECE/CEP/AC.10/2018/5).

4. At the fifteenth session of the Joint Task Force on Environmental Statistics and Indicators (25–26 October 2018), it was agreed that it would be necessary to once again review the assessment framework and the approach taken to calculate the performance scores. The revised SEIS assessment framework sets out the steps that have been taken to

¹ See http://www.unece.org/fileadmin/DAM/env/europe/monitoring/16thMeeting/Official/Proposal_for_the_SEIS_reporting_tool_ENG_fin.pdf.

develop a new framework for reviewing progress in establishing SEIS in Europe and Central Asia (ECE/CEP/AC.10/2019/5).

5. Having this background in mind, as well as the final assessment of the implementation of SEIS for 2021, the Working Group needs to decide on a final approach regarding the performance scores as part of the review process.

II. Developing a performance score for the Shared Environmental Information System

6. To report on progress in the establishment of SEIS, in line with the Batumi Conference mandates and outcomes of the twentieth session of the Working Group (3–4 September 2018), the assessment framework has been reviewed and revised to improve the mechanism to monitor countries' performance (ECE/CEP/AC.10/2019/5). It was also revised in preparation of the next progress report, to be presented to environmental ministers during the Ninth Environment for Europe Ministerial Conference in 2021.

7. The revised SEIS assessment framework was, amongst other things, changed following comments received during the fifteenth session of the Joint Task Force, in a technical workshop between the secretariat, the European Environment Agency and UNEP (Copenhagen, 6–7 December 2018) and by a small group involved in the revision process set up by the Working Group.

8. While the revised assessment framework presents an updated questionnaire to be considered by the Working Group, it does not discuss the need to revise the performance score utilized to measure progress towards establishing SEIS. Below are therefore four possible options for scoring to be discussed by the Working Group during its twenty-first session. The objective will be select one approach that can be integrated into the final version of the assessment framework.

A. Option I: The Batumi Performance Score

9. It would be possible, with some minor amendments, to return to the original approach taken in the 2016 progress report. The benefit of this approach would be that it allows for comparison over time. However, while the performance score was successfully applied to the 2016 progress report, the Working Group also deemed this approach to be inadequate (ECE/CEP/AC.10/2017/5). More specifically, it was recognized that the criteria for review were not adequate to reflect data quality considerations and comparability. Furthermore, the process only allowed for the review of data flows that were accessible online, which meant that the reported national and thematic performance scores only reflected online accessibility.

10. The approach taken in 2016 was that all data flows were rated according to the five criteria for review as proposed by the secretariat in its concept for a reporting mechanism. The rating process was achieved by evaluating the collected material and asking simple dichotomous (yes/no) questions in line with each review criteria. The rating depended on whether the requirements for each review criterion were or were not met. This generated an overall performance score that ranged between 0 and 5 for each data flow.

11. Table 1 below provides the criteria for review as agreed by the Working Group in 2015.

Table 1
Criteria for Review

<i>Rating Element</i>	<i>Description</i>
Online accessibility	The data flow can be easily accessed by anybody at any time online.
Update regularity	The data flow is updated with figures of the latest agreed production period.
Production methodology ^a	Detailed information on standard methodologies and calculation methods for the production of the data flow is provided. The detailed information further confirms that the applied methodology is in accordance with the agreed standard methodology for the production of the particular data flow.
Data interpretation and use ^a	The data flow is supported by information about what it presents and how to understand the changes in data flows over time. Information is also provided on how the collected data was interpreted and used (e.g., for state-of-the-environment reporting or to support environmental policymaking). Information is furthermore provided in the national language and in an international language – English and/or Russian – to be accessible to the national and international community.
Data sources ^a	The institution responsible for the production of the data flow, its source, and contact details are available.

Note: As accepted at the seventeenth session of the Working Group and advanced by the development sub-group for a reporting mechanism (see ECE/CEP/AC.10/2015/4).

^a During the validation process it was recognized that the meaning of the criteria for review had to be clarified.

12. Each criterion for review was given equal weight when assessing the effective production and sharing of the data flows. Added together the answers gave the overall performance score, which was presented as a quantitative measurement in per cent, referring to the pan-European countries' progress in developing SEIS.

13. More information on the approach taken during the 2016 progress report can be found in document ECE/BATUMI.CONF/2016/8. See also the targets and performance indicators for measuring progress in developing SEIS across the pan-European region (ECE/CEP/2014/8).

B. Option II: The Mid-term Review Performance Score

14. The assessment framework for the mid-term review was developed in line with SEIS principles. It included an assessment framework questionnaire, as a self-assessment, to be undertaken by the countries using the available reporting tools. It also included a performance score for the regional assessment of progress in establishing SEIS at the pan-European level. A similar approach could be taken for the next progress report as well.

15. Table 2 below provides the categories for review as agreed by the Working Group in 2017.

Table 2
Categories for review

<i>Category</i>	<i>Description</i>
Relevance	The degree to which the information meets the real or perceived needs of users (e.g., in terms of coverage, content and detail).
Accuracy	The degree to which the information correctly describes the phenomena it was intended to measure.
Timeliness and punctuality	Timeliness describes the length of time between data availability and the event or phenomenon they describe. Punctuality describes the time lag between the actual delivery of the data and the target date when it should have been delivered.
Accessibility	The ease with which users are able to access at any time the data and its supporting information online.
Clarity	The degree to which information is presented in a clear and understandable form and released in a suitable and convenient manner, with supporting metadata and guidance.
Comparability	The extent to which differences between statistics can be attributed to differences between the true values of the statistical characteristic, or to methodological differences. Comparability includes: (a) comparability over time — the extent to which data from different points in time can be compared; (b) comparability through space — the extent to which data from different countries and/or regions can be compared (the application of international standards is particularly important here); and (c) comparability between domains — the extent to which data from different statistical domains can be compared.
Institutional and organizational arrangements	The degree to which institutional and organizational arrangements are in place to ensure regular production and sharing of environmental indicators, data and information.

Note: The categories are loosely based on those set out in the Eurostat “Quality Assurance Framework of the European Statistical System” (see version 1.2, adopted May 2015, available from <http://ec.europa.eu/eurostat/web/quality>).

16. The following elements guided the development of the performance score at the time:

- (a) Not all aspects of the SEIS assessment framework could be considered of equal importance when determining a performance score, so a weighting scheme was needed;
- (b) Many of the questions in the questionnaire were assigned a score (0–1);
- (c) All questions with a score were weighted equally;
- (d) Each of the seven categories (review criteria) of the questionnaire was assigned a percentage weight;

- (e) The weights of all categories summed to 100 per cent;
- (f) Each data flow received an overall performance score (0–100 per cent);
- (g) Each environmental indicator could be reported alongside an average of the scores assigned to the data flows underlying the indicator;
- (h) The average of all performance scores for data flows gave the overall performance score;
- (i) Performance scores was presented in four bands:
 - 0–50 per cent: Requires improvement
 - 51–75 per cent: Moderate performance
 - 76–95 per cent: Good performance
 - 96–100 per cent: Very good performance.

17. When calculating the performance score, each question on a data flow was given a score between 0 and 1. If the question was not answered, the score would be 0. Open questions did not receive a score. The questions to which the answer was a simple “yes” or “no” were scored 1 for a positive response (which meant “no” in some instances, such as when the question was whether there are limitations or breaks in data series) and 0 for a negative response. Where a response of “partly” was allowed, a score of 0.5 was given. Other questions, for example, with the possibility of ticking boxes were scored in a tailored way.

18. For each data flow, all questions with a score under one category were used to calculate an average score for the respective category. The category score was multiplied by the weighting for that category (see table 3). The weighted scores of the categories for a data flow were summed, giving a total score of up to 100 per cent for each data flow. The data flow scores could be further averaged to give an overall performance score for an environmental indicator, theme or nationally.

Table 3
Weighting of categories

<i>Category</i>	<i>Weighting (%)</i>
Relevance	20
Accuracy	10
Timeliness and punctuality	10
Accessibility	20
Clarity	10
Comparability	20
Institutional and organizational arrangements	10

Note: Taken from the assessment framework for the mid-term review of SEIS (ECE/CEP/AC.10/2018/5)

19. There have been some changes to the self-assessment questionnaire (e.g., questions are now layered and asked at the macro, thematic and data flow levels), which would mean that this approach would have to be adjusted for future use. Consideration would have to be given to the weighting of questions at the respective levels.

20. More information on the approach taken for the mid-term review report on the establishment of SEIS can be found in document ECE/CEP/2019/7. See also the assessment framework for the mid-term review of SEIS (ECE/CEP/AC.10/2018/5).

C. Option III: Pillar-based Performance Scores

21. Having in mind the two-preceding tried and tested options, the third approach represents a novel mix of the two, although with a stronger emphasis on the pillars (content, institutional cooperation and infrastructure) of SEIS. In other word, trying to make the approach more advanced and relevant, as compared to option I, while not getting lost in a complicated weighting scheme, as applied in option II.

22. The idea behind a pillar-based performance score would be to group relevant questions from the self-assessment questionnaire under the respective pillars of SEIS (see table 4) as based on the revised assessment framework (ECE/CEP/AC.10/2019/5). The score for each question would be calculated in the same way as for option II (see para. 17). However, no distinction would be made between the categories in terms of weighing (as in table 3). This moreover implies that there would be one performance score per pillar and that the three pillar scores could then be used to produce an aggregated national performance score where each pillar is equally weighted.

Table 4
Categories for review

<i>Pillar</i>	<i>Self-assessment questionnaire</i>
Content	Question(s): e.g., 3.1. Do you produce any integrated reports covering several thematic areas?
Institutional Cooperation	Question(s): e.g., 26.1. Are there any legal or institutional arrangements for regular production and sharing of data between various institutions at national level in place?
Infrastructure	Question(s): e.g., 4.1. Is there an integrated portal in place for environmental information and data?

Note: See the revised SEIS assessment framework for information on the questions included in the self-assessment questionnaire (ECE/CEP/AC.10/2019/5).

23. One important element that would need consideration is whether questions are asked on the macro, thematic or data flow level. This is an issue for all the options presented in this document and would need to be resolved by the Working Group. In this instance, the questions could be weighted equally within each pillar. However, this would also imply that questions from the data flow level would be over represented in the overall calculation of the performance score. In this case, to address this imbalance between levels, the proposal could be to introduce some weighing but to keep it simple. More specifically, in cases where questions are asked at either the thematic or data flow level, meaning the same question is asked several times, these scores would be aggregated equally on their respective levels.

24. This would also mean that macro questions would have more weight and the thematic questions would be have greater weight than those asked at the dataflow level. Greater balance could be achieved by, for example, having a 50–30–20 per cent division between the levels and across the pillars (see table 5).

Table 5
Weighting of categories

<i>Pillar</i>	<i>Level</i>	<i>Weighting (%)</i>
Content	1. Macro: Only asked once	20 %
	2. Thematic: Asked for each thematic area.	30 %
	3. Data flow: Asked for each dataflow.	50 %

D. Option IV: No Performance Score

25. The benefit of a performance score would reside in its ability to enhance or add value to the establishment of SEIS in Europe and Central. It can do this by, for example, highlighting areas in need of improvement. It can also serve as a communication tool that demonstrates the importance of shared environmental information in the region. However, unless the performance score and its underlying review can be used to find out what needs to be improved, or serve as a useful and strategic communication tool for SEIS, it may be better to take a different approach.

26. Given the increased complexity of the self-assessment questionnaire, the final option would be that national performance scores are not calculated for the next progress report in 2021. Instead, a more qualitative approach would be applied, whereby results from the self-assessment questionnaire are presented and analysed for each country, but no comparable performance scores are calculated. The benefit of this approach would be that the open questions would become more important and this would enrich the overall analysis.

III. Issues for consideration

27. The following questions are proposed for consideration by the Working Group:

(a) Are there other approaches or options for calculating a performance score, in addition to those presented above?

(b) Which option for the performance score should be selected to underpin the self-assessment questionnaire as part of the process to facilitate reporting on the establishment of SEIS in Europe and Central Asia in 2021?

(c) What should be the process and deadlines for finalizing the SEIS assessment framework, including the performance score, in 2019?