

## **Module 5 – Peer Review**

### **Overview**

This module highlights the importance of peer review in Integrated Environmental Assessment and reporting (IEA), particularly in ensuring scientific credibility, policy relevance and legitimacy. By the end of the module, you will have learned about:

- The definition of peer review in the context of the AEO process
- Objectives of peer review
- Why peer review is critical to environmental assessment and reporting
- Peer reviewers (PRs)

## **5.1 Introduction**

Scientific, technical and policy review has always been a key component of the AEO or any other environmental assessment reporting process, involving hundreds of stakeholders in and outside government structures. Such peer review takes different forms – from informal and non-official to formal and official. Activities have included formal sub-regional and regional review consultation meetings, CC network meetings, targeted expert review and input. For the AEO (or any environmental assessment report), draft sections are sent to scientists and government experts for review and comprehensive comment. The draft material is also reviewed during sub-regional and regional consultations to ensure good quality and accuracy.

## **5.2 Objectives of peer review**

The objectives of the peer review is to check for, among others,:

- Adherence by the authors to the TORs provided by the coordinating agency at the start of the assignment
- Reliability and appropriateness of scientific basis of the analyses
- Reliability and appropriateness of the data and information used in the analyses
- Provide relevant and up-to-date data and information to enrich the analyses
- Reliability of the sources of information as well as citations used in the material
- Regional and sub-regional coverage of the issues
- Appropriateness of the conclusions/findings of the analyses
- Relevance and soundness of the selected indicators used in the analyses

## **5.3 The peer review process**

Comments provided by the expert PRs are documented, with every input being logged in a comprehensive database for follow up, and assigned to different authors and staff to address. Where conflict between review comments arises, coordinators contact the experts to discuss and determine an acceptable compromise.

In terms of the AEO process, peer review builds upon previous activities by widening the review process to include more scientific input. This is in response to the outcomes of the UNEP-DEWA Science Initiative Consultations in January 2004 as well as other related consultation processes since then.

Participants to the Scientific and Technical Meeting on strengthening the scientific base of the United Nations Environment Programme, which was held in January 2004, recommended among others, the "need to harmonize methodologies (and) to improve and expand the peer review system and UNEP networks" (UNEP 2004b).

In terms of recommendations, the scientific community was explicit in terms of peer review, stating in **Recommendation 3**:

GEO should be subject to an expanded and extensive peer-review process among science institutions, experts, international organizations and governments. This could be overseen by an independent review board or board of editors, which would increase the scientific credibility of GEO and ensure more ownership from the scientific community. Such a process could be applied to improve quality on regional inputs. There should be a clear strategy of the peer-review process, for example, in terms of how to deal with contrasting views. It was suggested that the establishment of a scientific advisory panel could assist in those matters (UNEP 2004b).

An Intergovernmental Consultation on Strengthening the Scientific base of the United Nations Environment Programme, also held in January 2004 soon after the science and technical meeting, reinforced the need for UNEP to further strengthen the scientific peer review process for GEO (UNEP 2004a).

The AEO peer review process has, therefore, become more systematic, adapting experiences from other processes. To quote the United States Environmental Protection Agency (EPA)'s *Peer Review Handbook* (2000), peer review of major scientific and technical work such as AEO reports and associated products "should not be looked upon as another hurdle" but a strategic input to widen the report's appeal across many different stakeholders.

#### **5.4 Peer review definition**

Peer review is a process for enhancing AEO reports so that the decisions or position taken by policymakers, based on the report, has a sound, credible basis (EPA 2000).

Peer review is a documented critical review of the AEO report. It is conducted by qualified individuals and organizations who/which are collectively equivalent in technical expertise (i.e. peers) to the experts who draft the contents of the report. The peer review is conducted to ensure that research and conclusions of the report are technically adequate, competently performed, properly documented, and satisfy established quality requirements.

The AEO peer review is an in-depth assessment of the assumptions, calculations, extrapolations, alternate interpretations, methodology, acceptance criteria, and conclusions of AEO reports and of the documentation that supports them.

The peer review process is characterized by a limited number of interactions by PRs. Peer review is undertaken during the whole AEO process, including method selection, research, and drafting to ensure that the report is scientifically and technically sound. Both internal and external experts to the AEO process are involved in peer review, as appropriate.

#### **5.5 Peer reviewers**

Peer reviewers should:

- have technical expertise in the subject matter for which they have been selected to peer review.

- agree to read all materials, participate fully, and protect confidential information. They shall not share any AEO material to a third party.
- maintain the confidentiality of the AEO report, perform the review within the set deadlines, and be unbiased and objective. They should notify the head of the GEO section should they encounter any problems in finalizing the peer review process.

## **5.6 Some peer review activities**

- Advise on the treatment of the issues across the chapters, commenting on the key issues as highlighted.
- Point out other key issues which have not been highlighted but would be considered a serious omission if they were left out in the final environmental assessment report. Where such omissions are highlighted, the reviewer should present within a paragraph or two the issues, including the relevant full references.
- Indicate other sources of relevant data.
- Ensure that trend data have been presented in all chapters.
- Ensure that key indicators of the state of the environment and environmental policy performance are properly tracked.
- Pay special attention to the interlinkages between trends and policies (both specific to the issue under each chapter and more general policies that impinge on the issue), demonstrating the environment as a driver of policy and vice versa, and evaluating policy in terms of environmental impact (effective, ineffective, unexpected, etc.)
- Provide additional information and data, including boxes and other illustrations to enrich the sections, if necessary.
- Point out inconsistencies and/or contradictions of facts/data within and across the chapters and regional perspectives.
- Highlight the major messages from the state of the environment both at the regional and sub-regional levels.
- Provide a list of the major messages emanating from the state of the environment both at the regional and sub-regional levels.
- Highlight the major policy weaknesses clearly evident from both the regional and sub-regional thematic sections.
- Highlight the major policy strengths clearly evident from both the regional and sub-regional thematic sections.
- Provide a list of both the strengths and weakness emanating from the state of the environment both at the regional and sub-regional levels.

- Advise on possible alternative policy initiatives that should be considered to ensure effective environmental management at both regional and sub-regional levels.
- Indicate any priority and emerging issues, or areas of outstanding vulnerability related to the issue as analysed.
- Provide an assessment of the treatment of IEA both between the chapters, regional sections and across them.
- Provide detailed comments on all the points listed above. Reviewers should avoid sending questions on the sections but rather provide substantive comments, which can be considered during revision of the sections.

### **5.7 Finding peer reviewers and determining the Peer Review schedule**

These can be recommended by government ministries/departments, scientific institutions, universities, CCs, and other stakeholders. The Peer Review schedule is a critical feature of the AEO process. The schedule shall take into account the availability of quality draft material, availability of appropriate experts, time available to use the review comments, deadlines for the AEO report, and logistics.

### **5.8 Documents to send peer reviewers**

- Most recent and quality copy of the draft environmental assessment report. This could be the whole report or a section of it.
- Clear terms of reference, including specific activities and deadlines.
- Clear statement on how comments should be provided
- Clear reporting hierarchy

## **5.9 Questions for discussion**

Q: What is a peer review process and why is it necessary in environmental assessment and reporting?

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Q: Who is involved in the peer review process and why?

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Q: Can you please highlight a situation where peer review is unnecessary in Integrated Environmental Assessment and reporting (IEA)?

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Q: At what stage of environmental assessment and reporting should a peer review process be undertaken?

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Q: Taking your own sub-region or country as an example, how has a peer review process been undertaken and how successful was it?

A:

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## **5.10 References**

EPA (2000). *Peer Review Handbook: 2nd Edition*. U.S. Environmental Protection Agency, Washington, D.C. <http://www.epa.gov/peerreview/pdfs/prhandbk.pdf>

UNEP (2004a). Report of the intergovernmental consultation on strengthening the scientific base of the United Nations Environment Programme. UNEP/SI/IGC/3. Intergovernmental consultation on strengthening the scientific base of the United Nations Environment Programme  
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UNEP (2004b). Report of the scientific and technical meeting on strengthening the scientific base of the United Nations Environment Programme. UNEP/SI/STM/1. Scientific and technical meeting on strengthening the scientific base of the United Nations Environment Programme, Nairobi, Kenya, 12-13 January 2004. United Nations Environment Programme, Nairobi. [http://science.unep.org/UNEP SI ST E Report.doc](http://science.unep.org/UNEP_SI_ST_E_Report.doc)