

22 November 2018

**Ref: scientific credibility of the sixth Global Environment Outlook**

Dear Jian Liu,

The Scientific Advisory Panel (SAP) is pleased to present the outcome of our review on the scientific credibility of UN Environment's most recent flagship report, the sixth Global Environment Outlook (GEO-6). The Panel's review has concluded that, overall, the procedures followed to produce GEO-6 were scientifically credible. Compared to previous GEO reports, GEO-6 improved the extent and scope of the peer review process, the geographic and gender balance of the community of authors and advisory groups, and the extent to which the Secretariat adopted the guidance of the advisory bodies.

In conducting our review, the Panel agreed on a set of criteria with which to assess the scientific credibility of the GEO-6 process. Our conclusions based on these criteria are summarized below.

**Overall GEO-6 process:** The process for delivering GEO-6 was conducted in a manner that promoted scientific credibility. Whilst the sequencing of parts A, B and C resulted in the latter sections having less time and opportunity for authors' interactions and review, the SAP recognizes the efforts made by the Secretariat and other participants to accommodate changes to timelines and work plans as dictated by external constraints, and in response to the evolving guidance of the advisory bodies.

**Implementation of SAP Decisions & Guidance:** The SAP's decisions and guidance were implemented in a timely and effective manner and resulted in the strengthening of the scientific credibility of the assessment. However, the SAP records that the initial guidance regarding drafting the SPM was amended by the HLG (see below). In addition, though SAP emphasized its importance from the outset, a comprehensive outreach and communications strategy for GEO-6 is yet to be developed and implemented.

**GEO-6 Resources:** The scientific integrity of the GEO-6 process was secured despite budget constraints. The SAP continually stressed that financial stability and committed resources are essential to the process of developing scientifically credible global assessments.

Strong in-kind support from the GEO expert community, combined with timely financial contributions from some member states, helped to maintain a credible process. These efforts were complemented by adaptive management decisions and adjustments from the Secretariat in close collaboration with the SAP.

**Geographic & Gender Balance:** The geographic and gender distribution of participants (246) in GEO-6 was appropriate for a global assessment. Overall the geographical representation was 56% from developing countries and 44% from developed countries, while the overall gender balance was 55% female and 45% male. The SAP recognizes that this wide participation was achieved through the ongoing efforts of the Secretariat, in consultation with the SAP, at key points in the process.

**Breadth of Expertise:** The SAP determined that the process of nominating and selecting experts followed best practice principles. A total of 117 authors participated in the report drafting process. The SAP notes that it was challenging to recruit a sufficient number of authors representing the breadth of skills and expertise required within the short time allocated. During the drafting period additional experts were brought in to fill skills gaps identified by the SAP, and in consultation with the Secretariat, assessment co-chairs and the coordinating lead authors.

**Peer Review Process:** Overall, a robust peer review process that was transparent, inclusive, and rigorous was undertaken for GEO-6. Credibility was enhanced by following best practice principles adapted from the IPCC process. The SAP recognizes the excellent work of the Review Editors in conducting this robust process, in particular the development of the online Review Editors Analytical Database (READ) tool, which will be useful for other review processes. That being said, the SAP is of the opinion that the traceability of responses by authors could have been strengthened and that the SPM would have benefitted from wider review.

**Drafting of the SPM:** The draft SPM is consistent with the primary document, as evidenced by ‘line-of-sight’ referencing of each statement to its parent sections in the main report. The SPM also provides confidence statements for all the key messages, reflecting the extent of the evidence on which they are based. Before final approval of the negotiated SPM, these key messages and confidence statements must be traceable to their supporting evidence.

Whilst the HLG took leadership of the SPM development from the outset, the SAP provided guidance stressing the necessity for the authors and GEO-6 Co-Chairs to produce the first draft. This approach was agreed at the 3<sup>rd</sup> authors meeting (Guangzhou, October 2017) and from there-on the HLG provided guidance to the assessment co-chairs and authors for further revisions to the draft SPM. The SPM was thus developed and reviewed under the guidance of the HLG, consistent with its own defined approach. The SAP notes that this approach differs from that initially recommended by the SAP, in which co-chairs and authors are solely responsible for the SPM, as in other comparable scientific assessments. However, the SAP recognizes that the GEO is different from the IPCC and IPBES assessment processes, as it brings policymakers on board earlier in the process and also includes them in drafting the Summary for Policy Makers.

**Conclusion:** Overall, based on our involvement and observations throughout the design and development of GEO-6 as well as our final review, the SAP concludes that despite the several challenges and constraints noted above, the GEO-6 process was implemented in a scientifically credible way. In order to maintain the credibility of future GEO processes and to continue to leverage the capacities that have been harnessed to date, it is critical for UN Environment to provide predictable and stable resources for the entirety of future major global assessments. This will allow the Secretariat to further improve the processes which will ensure the scientific credibility of future reports.

Signed on behalf of the GEO-6 SAP

*Nicholas King*



GEO-6 SAP Co-Chairs Prof Nicholas King & Prof Sarah Green