Insights from the intellectual history of the Global Environment Outlook (GEO)

The Global Environment Outlook (GEO) is UNEP's flagship publication since the mid-1990s. It is the most comprehensive, regular review of the state and direction of the global environment. It was introduced at a time when governments and other stakeholders lacked a common information basis to develop a broad and comprehensive view of environmental issues, following the 1992 Rio Conference on Environment and Development. Over the past quarter century, six global editions have been published. GEO is produced in a global process. Its underlying approach of integrated environment assessment (IEA) served as inspiration for countless assessment and reporting processes globally, as well as at regional, national and local levels around the world. Over and above providing analyses on the state and trends of the environment, GEO systematizes and frames its analysis in the context of environment and development.

The observations below are distilled from early results of an independent research project conducted since 2016 by five veterans of global IEAs into UNEP's Global Environment Outlook (GEO). It is aimed at a book documenting and critically analyzing the intellectual history of GEO as the most comprehensive IEA system of the global environment ever undertaken by the international community. It is driven by recognition that the need for understanding the global environmental and sustainability dilemma is more urgent than ever. The book is to appear in late 2019. As the research is ongoing, this is an early summary based on work still in progress.

The resulting book will cover the evolution of the GEO processes and products over 25 years; that is, from experimental pieces in the early 1990s to the current GEO-6. It documents for the first time:

- the full, and unexpectedly extensive, range of GEO outputs;
- its widely adopted conceptual framework, underpinning comprehensive content development;
- the participatory approach and multiple support systems ensuring broad stakeholder involvement;
- scenario-based outlooks; and
- GEO's outreach and impacts, including a strengthened IEA capacity.

The authors have jointly participated in 25 years of GEO history. For this upcoming book, we relied on many sources, including our own memory and archives. These included, for example, GEO outputs, methodological guidance documents and internal and external evaluation reports. A special and inspiring wealth of information was derived from interviews with nearly 40 individuals having involvement over at least two editions of GEO. They spoke from a variety of roles including as users, regional champions, former heads of UNEP, project managers and lead authors, as well as government representatives.

One important motive for writing this book is that the authors think that navigating the increasingly complex landscape of risks associated with multiple, interacting forces of global change requires assessment mechanisms designed to take on the full spectrum of issues that arise. This is also the main consideration for the book's timing. GEO's history can provide relevant, previously undocumented insight and save valuable time to those who will commission, design and conduct, as well as critique and improve, such environment-development assessments in the next decade. This is the audience that the upcoming book, and the current summary, is meant for.

Summary

A. GEO is as much a process as it is a set of reports.

All respectable global assessments on environment and sustainable development now usefully adhere to this, whereas GEO invented it. The book traces key discussions and decisions that set this course. The GEO way of doing a global assessment – process *and* product – has never been set in stone. But in retrospect, its essential formula has been remarkably consistent:

1. GEO from the start has covered a broad spectrum of issues, including socio-economic aspects. GEO looks at environment and development as a whole and identifies issues at this interface that would not come out of thematically focused assessments. It offers integrated analysis in what nowadays would be called a sustainable development context.

2. It adopts regional as well as global perspectives throughout, with cross-scale perspectives also in mind. Global environmental issues are framed in their regional context in terms of actual policy environments, vulnerabilities and development issues.

3. The GEO process is collaborative and participatory. It has built and intrinsically benefits from a constantly mutating network of participating individuals and institutions.

4. Its position has always been science-based and policy relevant. In its process and conceptual framework it balances flexibility and structure.

5. The GEO analyses, from the very beginning, have covered past, present and future. This has drawn on the work of distinct circuits of data and expertise, namely history, monitoring, modeling and political science. As such it incorporates the critically needed aspects of learning from the past, understanding the present and looking into the future.

6. GEO includes an assessment of policies, without being policy-prescriptive. This aspect in particular has evolved over the years.

In addition, the spirit of GEO has been to "learn-by-doing". There has always been an element of experimentation. This has served a triple purpose. First, GEO editions were not supposed to wait until the perfect methodology and data were available. That would have taken too long while the environment was changing rapidly. Second, "learning by doing" meant the practical involvement of many varied teams, especially regional teams, in successive editions of GEO. This has been one of the keys to UNEP's sustained efforts to build capacity for conducting IEA processes. Third, a learning approach was also essential for tackling the constantly changing landscape of science, policy and socio-economic issues related to environment and sustainable development.

GEO provides:

- the world's authoritative, science-based and policy conscious assessment on environment and development since 1997
- regional as well as global perspectives
- analysis of past, present and future
- a view across themes and sectors, offering insights beyond thematic reporting
- inspiration and a common approach for many regional and local assessments
- a participatory process that is policy relevant, not policy-prescriptive
- considerable leverage to UNEP's resources by widespread in-kind contributions

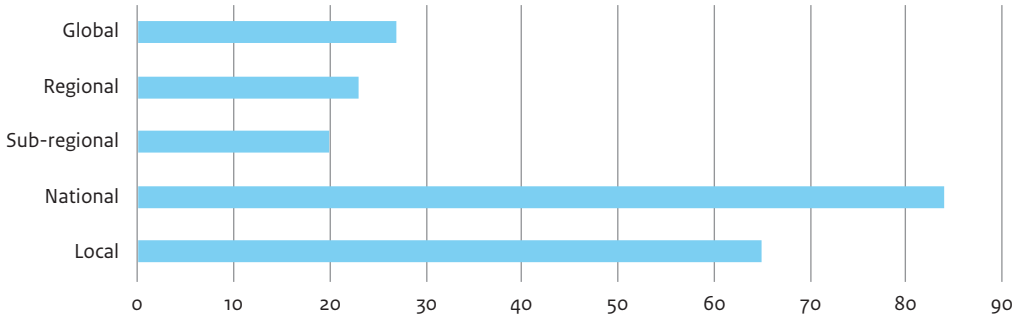
B. As an IEA model the Global Environment Outlook has been a major success.

GEO is perhaps best known for its signature global reports on the state and trends of the global environment. That, however, is less than half of its story. From establishing a globally coordinated but regionally engaged process, GEO became an assessment ***system***: its methods, practices and brand have been adopted at other levels world-wide. In terms of richness of processes and reports, its most prolific period stretched from the late 1990s to the early 2010s. Research for the book revealed that many more regional, national and local GEO-inspired or GEO-labeled IEAs were produced than previously realized.

If being mimicked is an **indicator of impact**, GEO has a superb record. Research for this book identified hundreds of 'GEOs' and GEO-inspired assessment initiatives linked directly or indirectly to the global process. These initiatives were taken especially in Latin America and the Caribbean, Africa and Asia and the Pacific. Some early examples include the first Caribbean Environment Outlook (1999), the first GEO for Chile (2000), the first GEO for Latin America and the Caribbean (2000), the first Africa Environment Outlook (2002) and the first Asia & Pacific Environment Outlook (1997!) and, later, dozens of GEOs for individual countries and cities. These follow-on regional, national and local GEOs constituted a wave of initiatives between the late 1990s to the mid 2010s, with some further ones thereafter. These assessments aimed at establishing a firm factual basis *plus* broadening local and national environment-related policies *plus* strengthening foresight in policy-making.

Through systematic research for the book, numerous additional GEO-inspired assessments came to light, including many that the authors did not know of before. At the time of writing of this summary, a total of nearly 300 have been identified. This treasure trove of IEA/GEOs and related reports is carefully documented in an annex to the upcoming book.

Figure 1 Number and scope of GEO Reports, 1997-2018*



* Provisional numbers
Note: Numbers in this chart do not include either meeting or technical reports stemming from GEO processes. Numbers for global reports include GEO Year Books and manuals.

C. GEO has achieved a diverse set of additional outcomes and impacts.

In broad terms, the project identified **three interconnected types of impacts** from the GEO process:

- Translating a nuanced and science-based integrated assessment approach to environment and development into methods, language and practices that resonated across geographies and cultures. The proof - aside from the contents of the global reports - is that the GEO model was adopted in many instances and often with great autonomy. GEO was a trailblazer for high-profile assessments that considered the management of natural resources in a systemic framework that included agriculture, biodiversity, land and water, among others.

- A large enhancement of the capacity to conduct modern state-of-the-environment reporting, married with foresight and an integrated environment *and* development perspective; and consequently a contribution to enhanced capacity for policy-making. Although plagued by discontinuities, a community of practice in IEA was effectively fostered by UNEP from the late 1990s until at least 2012. Practice, through involvement in actual assessments, was central in this.

- A strengthening of the treatment of the linkages between environment, development and systems thinking in higher education through contribution to university curricula and capacity building. This is a spin-off impact, as it was not planned. Cases mentioned to the authors relate to universities in Asia, Latin America, the Arab world/West Asia and Europe.

Exploring impacts of the global GEOs in particular (through their evaluation reports, among other things), the authors identified the following modalities of impact:

- awareness raising (through mass media as well as scientific journals);
- consensus building (reducing the risks of political decision-making and action);
- political and policy discourse (revealing alternative policy opportunities);
- agenda setting at global, regional, national and institutional levels;
- guidance for global compacts and resolutions (the SDGs, Rio+20).

D. GEO, over its 25 years of existence, has seen important changes in information needs and policy context.

In addition to air pollution there appeared climate change; in addition to nutrient depletion appeared nutrient overloads; in addition to overfishing appeared plastic waste; post-conflict situations came into focus; urbanization and overconsumption emerged as dominant forces; deforestation widened to encompass all natural resource issues. While societal interest kept shifting, problems often lingered or returned with new dynamics. One example is the nitrogen cycle, with human-made flows now outnumbering the natural flows; another is the return of air pollution as a critical issue for environment and human health in megacities.

Most importantly, during those 25 years, the focus in environment assessment **shifted from issue-framing and agenda-setting to options for action**. While policy options and an estimate of their potential impact figured as early as the very first GEO, a structured overview of local policy initiatives and how they played out was one key innovation of GEO-6. This was also reflected in the changes in scenario analysis from one edition of GEO to another. Lately, this meant a change from active scenario construction to scenario assessment (starting with GEO-5) and, subsequently, a switch from considering 'what if' scenarios to 'pathways to sustainable development' (GEO-6).

E. In contrast with the above, no memory has been built into the current system of GEO.

Even worse, what memory of the experiences with earlier GEOs existed is fading fast. This has been a painful discovery by the authors. The lack of institutional memory has been exacerbated by the inevitable turnover of UNEP staff and staff turnover at many contributing institutions. UNEP Live is not alive and it is not designed to be GEO's memory. While not the main purpose, the importance of creating and maintaining IEA capacity for the future was recognized and built into the system of collaborating centres plus, e.g., the GEO fellows. Either would have worked if rigorously maintained through time.

UNEP's lack of documentation on GEO over time – and thereby lack of transparency on methods, outputs and achievements – is remarkable, even considering the usual shortage of funds of a UN body plus a worldwide trend to dispose of tangible archives. After all, GEO and other UNEP-managed systems are meant to underpin processes to address changes at a planetary scale, and an ability to learn from what was done.

Learning from what was done seems increasingly hindered, for example by the retirement of websites without a proper archiving of their content. The archives at UNEP Headquarters no longer exist in any reasonably accessible way, and the documentation on UNEP's website has become even thinner while it was viewed in researching this book. We find this difficult to justify vis à vis donors, participants and indeed UNEP's main clients and constituents, governments themselves. Moreover, the lack of transparency, openness and loss of institutional memory could prove to be a large handicap in securing stable financing for GEO – as opposed to explaining purpose, impacts and design options to everyone for each new edition.

F. Among all the changes to GEO over the years, one change in particular remains controversial.

Nicknamed the "IPCC-ization" of GEO, the change occurred during GEO-4 and altered the process in three ways: the introduction of a Global Intergovernmental and Multi-stakeholder Consultation at the beginning of each global GEO cycle; a new process for the nomination and selection of experts to participate in GEO; and, a negotiated summary for policy makers (SPM). A consultation with governments at the start of the GEO process agrees on the objectives, scope and process for the upcoming GEO. This is non-controversial. While there was a similar scoping phase in earlier GEOs, the consultation formalizes government involvement.

Prior to these changes, GEO and its associated processes were assisted by a global network of Collaborating Centres. This stemmed from the recognition that the cross-cutting, multi-level and constantly evolving nature of environment and development issues requires the contribution of experts with stable institutional presence, and deeply rooted geographic as well as thematic knowledge. As a result of the IPCC-ization, the network of Collaborating Centres as the basis for preparing GEO all but disappeared. Instead came a system whereby governments and other stakeholders nominated individual experts who were then selected to undertake various roles in the process. While all GEOs have included a summary of policy-relevant findings, those for the earlier reports were prepared and agreed by the assessment's authors and UNEP. In contrast, from GEO-4 onward the SPM was made subject to line-by-line negotiation and approval by policy makers. This gave governments a much more active involvement in crafting the main messages of GEOs 4-5-6 compared to GEOs 1-2-3. It also meant that an overall summary of the whole assessment by its authors was no longer available.

In exploring GEO's history, the authors encountered very different views from interviewees regarding the wisdom of this three-way change. Views differ in particular on the negotiated SPM whereby GEO takes its place alongside other well-known assessment reports. Perhaps the new approach of putting the emphasis on government review and negotiation of the SPM creates a specific moment to acknowledge the strength of evidence underlying GEO statements. Such a specific moment could see the emergence of new 'UN language'; for example, on promising approaches towards environmentally sustainable development. Alternatively, the negotiation of SPMs is quite possibly a misplaced ritual that can only serve to remove potentially controversial elements, but not one that can increase policy relevance. In this view, it carries the risk of sanitizing GEO of findings that, while well supported, may be inconvenient.

G. Finally, the future of GEO is reflected on in the book.

Will GEO – or, more generally, comprehensive global environmental assessment - still have a useful role? Will it still be worth the effort? The authors' reflections are based on the history documented in the upcoming book, on the opinions offered by those we interviewed, and on our impressions of the changing demands on IEA in the 2020s. The authors' related reflections are formatted in a short, final scenario chapter, mimicking the structure of GEO itself.

On balance, the authors are not sure about GEO's future potential. **On the one hand**, multiplicity will characterize the assessment landscape in the 2020s - multiple issue frames, multiple thematic and sectoral assessments in part because of SDG reporting, new and alternative data sources as well as dissemination formats. Budgets will be strained, in part because of the multiple processes that will need to be served. The GEO process has always been stop-and-go, which meant it was difficult for partners to

maintain assessment capacity between assessments. GEO therefore may not be the vehicle of choice to navigate such a complex landscape.

On the other hand, it is clear that due to the increasingly complex, risky and interconnected environmental scene, thematic assessments alone will not be sufficient. In addition to assessments focused on climate change and energy, biodiversity and ecosystems, the circular economy or water, there is a place and an urgent need for drawing these perspectives together, as some of the most significant issues, problems and solutions may emerge at their interface.

Moreover, some of our interviewees spoke passionately of the need for modern, drastically reshaped GEO-like assessment products – aimed at mobilizing resources (technology, finance, corporate engagement) now that the challenges are clearer than ever. Some, especially from the early innovative years of GEO, advocate a drastic rebalancing between GEO's efforts regarding the strategic questions of 'how are we doing' and 'what should we worry about and act on'. On the latter, in their view, GEO should become a rallying point in the 2020s, and could serve as a "chapeau" for knowledge to be gained from the multitude of more focused thematic assessments that are likely to be developed by then. In addition, information technology allows for doing much more than when GEO was set up in the 1990s. That potential has not yet been used strategically. These are potential starting points for redeveloping GEO: more agile, more productively interacting with its intellectual base and with its users, and conceivably in a smarter way than through line-by-line approval.

For a redesigned GEO to become effective in the complex assessment landscape of the 2020s, some successful bits of craftsmanship from GEO's history could be put into action again. This could include, for example, a revival of the light-footed coordination among various global assessments that functioned well in the mid-2000s. It could also include the re-establishment of a lasting network of collaborating institutions that would enable GEO to maintain a good awareness of regional issues in environment and development and bring knowledge gaps and data gaps to the attention of potential funders at the proper moment in their programming cycle and with the right level of substance. Finally, a re-designed GEO could serve as a template and knowledge base to address the specific assessment needs of governments, regional organizations and others in their own contexts.

H. Even if GEO is not continued after GEO-6, the practical, productive lessons from 25 years of Global Environment Outlook will be useful.

After all, the relevant issue is not GEO's future but ultimately the sustainability of our planet and its regions. So where and how can forward-looking integrated assessment of environment contribute? One example of GEO's productive lessons would be its past data infrastructure (a low-cost system of sources, access methods and stable regional definitions). In the 2020s, such an infrastructure could be even more useful to assessment practitioners and users than in the 1990s, given there will be many more global assessments, new data sources and owners, and new publication formats, as well as disputed science.

Twenty-five years after GEO started, there is no shortage of literature on how to do a global (or other geographic level) environment outlook. But the authors find the actual story of the Global Environment Outlook particularly appealing and instructive, as well as encouraging.

Contact / authors in alphabetical order

Jan Bakkes	*jan.bakkes@pbl.nl*
Marion Cheatle	*mecheatle@gmail.com*
Nora Mzavanadze	*nora.mzavanadze@gmail.com*
Laszlo Pinter	*pinterl@ceu.edu*
Ron Witt	*rongwitt54@gmail.com*

Supporting organizations

CEU CENTRAL EUROPEAN UNIVERSITY

www.ceu.edu

PBL Netherlands Environmental Assessment Agency

www.pbl.nl

THE INTEGRATED ASSESSMENT SOCIETY

www.tias-web.info