United Nations Environment Programme

Terminal Evaluation of the Project Fifth Global Environmental Outlook: Integrated Environmental Assessment

by

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Disclaimer:

The views expressed in this report are those of the evaluators and do not necessarily reflect the views or policies of UNEP, or of any individual or organization consulted.

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List of Acronyms

AR5	-	IPCC Fifth Assessment Report
CPR	-	Committee of Permanent Representatives
DEWA	-	Division for Early Warning and Assessment
EA	-	Expected Accomplishment
EO	-	Evaluation Office
ERG	-	Evaluation Reference Group
GA	-	General Assembly
GC	-	Governing Council
GEA	-	Global Environmental Assessments
GEO	-	Global Environment Outlook
GRID	-	Global Resource Information Database
HDI	-	Human Development Index
HLIGP	-	High Level Intergovernmental Panel
IMIS	-	Integrated Management Information Systems
IPCC	-	Intergovernmental Panel on Climate Change
MCC	-	Mercator Research Institute on Global Commons and Climate Change
MDG	-	Millennium Development Goals
MTS	-	Medium Term Strategy
NGO	-	Non-governmental Organization
PIMS	-	Programme Information Management System
PoW	-	Programme of Work
SPAB	-	Science and Policy Advisory Board
SPM	-	Summary for Policy Makers
STEM	-	Science, Technology, Engineering and Medical fields
ToC	-	Theory of Change
UN	-	United Nations
UNCSD	-	United Nations Conference on Sustainable Development
UNEP	-	United Nations Environment Programme
UNDP	-	United Nations Development Programme
UNGA	-	General Assembly of the United Nations
US$	-	U.S. Dollar (currency)
WSSD	-	World Summit on Sustainable Development

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Project identification table

Table 1. Project identification summary

UNEP PIMS ID:	2954	**IMIS number:**	2C33
Sub-programme:	Environmental Governance	**Expected Accomplishment:**	EA(d)
		PoW Outputs:	2010/11-441 2012/13-441 2014/15-712
Expected Start Date:	1 October 2009	**UNEP approval date:**	19 May 2010
Actual start date:	10 March 2010	**Planned duration:**	45 months
Intended completion date:	31 December 2012	**Actual completion date:**	31 December 2014
Planned project budget at approval:	US$9,288,600.00	**Secured budget:**	US$7,032,600
UNEP contribution:	US$1,536,751	**Co-financing:**	Norway US$3.9M Sweden US$1.02M Switzerland US$0.29M Korea US$0.28 Canada US$0.01 **Total US$5.5M**
Mid-term review/eval. (planned date):	June 2011	**Terminal Evaluation (actual date):**	December 2013 – September 2014
Mid-term review/eval. (actual date):	Mid-term Review by the Science and Policy Advisory Board: April 2011 Final Review by the SPAB: June 2012*	**No. of revisions:**	2
Date of last Steering Committee meeting:	N/A	**Date of last Revision:**	18 March 2014

* These were assessments of the implementation of the guidelines for scientific credibility and policy relevance prepared by the SPAB.

Source: GEO-5 Project documents, including Project 44-P1 Annex: Project Document Supplement (Signed: 28/03/2014)

Executive summary

1. The United Nations Environment Programme (UNEP) has the unique mandate within the United Nations (UN) system to keep the world environmental situation under review to ensure that emerging environmental problems of wide international significance are prioritized and receive appropriate consideration by governments. In line with this mandate, in 2009, the UNEP Governing Council (GC) requested the UNEP Executive Director to undertake the fifth Global Environmental Outlook (GEO-5).

2. Between February and October 2014, the UNEP Evaluation Office conducted an independent evaluation of the GEO-5 project to provide a basis for accountability towards the UNEP GC, donors and other stakeholders, and draw lessons for future GEOs and similar large-scale environmental assessments. The evaluation used a combination of qualitative and quantitative methods for data collection and analysis adopting a largely participatory approach in the process. Specifically, four information gathering approaches were used: administrative data review; electronic surveys with (a) the GEO-5 core team and regional focal points and (b) with authors and reviewers contributing to the assessment; interviews (including face-to-face, Skype and personal interviews); and extensive review of documents relevant to the project and evaluation of GEAs.

3. GEO-5 was timed to launch in June 2012 in time for the United Nations Conference on Sustainable Development in Rio de Janeiro (Rio+20); meaning that from the start of the process in March 2010 with the Intergovernmental and Multi-stakeholder consultation, GEO-5 was largely completed in 27 months. This was a tight time frame but proved workable. The revised budget for GEO-5 at approximately US$6 million was about 21 percent short of the estimated assessment cost at design.

4. The GEO-5 effort was successful in satisfying the request of the GC. In the judgment of the evaluation, it contributed to the Rio+20 Conference and the discussions on SDGs, and it enhanced the stature of UNEP. GEO-5 pursued an approach that is considered best practice by the literature on global environmental assessments, providing good prospects for use of the assessment by strongly engaging key decision makers and stakeholders in the assessment process. The GEO-5 assessment achieved a high level of credibility while being completed in time for consideration at the Rio+20 Conference and benefitting from strong communication efforts. These elements were deemed critical to the success of the GEO-5 effort at the global level.

5. The evaluation considered the GEO-5 project's performance guided by seven criteria: i) Strategic relevance, ii) Achievement of outputs, iii) Effectiveness: attainment of objectives and planned results, iv) Sustainability and replication, v) Efficiency, and vi) Factors and processes affecting project performance. Evaluation findings for each of these criteria are summarized as follows:

Strategic relevance

6. UNEP is mandated to be the voice for the environment within the United Nations system. This status was reaffirmed in paragraph 88 of the Rio+20 Conference Outcome Document *The Future We Want*. UNEP acts as a catalyst, advocate, educator and facilitator to promote the wise use and sustainable development of the global environment[1]. The GEO-5 project was in line with at least two of the five areas of UNEP's mandate in the UNEP Medium-term Strategy for 2010-2013: (a) Keeping the world environmental situation under review; and (c) Providing policy advice and early warning information, based upon sound science and assessments[2]. The GEO-5 project also directly responded to a UNEP Governing Council Decision (25/2) requesting UNEP to provide a global assessment of the state of the environment. The project was presented as a concept under one of the 2010-2011 Programme Frameworks of the Environmental Governance Sub-programme. The GEO-5 process was also designed to follow relevant guidelines articulated in UNEP's Science Strategy, international best practices for conducting Integrated Environmental Assessments, and the Bali Strategic Plan for Technology Support and Capacity-Building.

[1] UNEP website - http://www.unep.org/Documents.multilingual/Default.asp?DocumentID=43&ArticleID=3301&l=en
[2] UNEP MTS (2010-2013), paragraph 15

Achievement of outputs

7. GEO-5 applied contemporary good knowledge about promoting use and influence of GEAs. Use and influence have been shown to be associated with engagement of decision makers and key stakeholder organizations with domain experts in a social knowledge process leading up to and following the reports. This is the main driver of use and is determined by six key attributes of the knowledge process portrayed in the Theory of Change of the GEO-5 project. These key attributes are that decision makers and key stakeholders regard the assessment process and products as 1) credible, 2) legitimate and 3) addressing salient issues and questions, and that 4) the assessment is timely i.e. available when there are openings for use in decisions, and 5) there is sufficient capacity to use and apply the assessment knowledge. In addition, the assessment findings need to be 6) adequately communicated and disseminated. These six attributes result from how the assessment process is undertaken, and are formative in the use of the assessment in global and national and (sub-)regional policies and environmental decisions. The outputs of the GEO-5 project were geared explicitly at achieving these key attributes of the GEO-5 assessment process and products.

8. Credibility - Credibility understood as using appropriate sources and methods and exploring alternative explanations was a primary focus of GEO-5. Procedures to foster credibility were developed and implemented by the Chapters with oversight provided by the Chapter Coordinators and reviewed twice by the GEO-5 Science and Policy Advisory Board (SPAB), whose reviews were both positive and sources of advice to GEO-5. GEO-5 contributors had the capacity to undertake the assessment and authors and reviewers all judged that, overall, their credibility standards were met. The evaluation judged that credibility was achieved at a highly satisfactory level.

9. Legitimacy - GEO-5 prioritized legitimacy from the perspective of global uses of the assessment targeting Rio+20 as a launching venue. This was a strategic decision that appears to have been successful – GEO-5 contributors suited the global priorities and collectively provided considerable breadth of disciplines, despite some shortcomings in the capacity of contributors. UNEP is regarded as a fully legitimate convener for a global environmental assessment which contributes to the legitimacy of GEOs. However, GEO-5 had mixed performance on gender: while it had a strong female presence amongst contributors at all levels and on the GEO-5 team, the substantive representation of gender issues in the assessment was muted. The emphasis on credibility likely meant that much of the sources providing gender-differentiated data and analysis were judged not appropriate for GEO-5. Also the assessment process did not include the diversity of interests and stakeholders that was implied by the GC Decision and requested by the Global Intergovernmental and Multi-stakeholder Consultation, and the majority of contributors was drawn from countries with a high level of development. These observations are somewhat mitigated by considering that interests contributing to GEO-5 were more appropriate for the context of global decisions, and that GEO-5 fared better than the Fifth Assessment Report by the Intergovernmental Panel for Climate Change and the Millennium Ecosystem Assessment when comparing the level of development of the countries of origin of contributors. Overall, for its strategic global pursuit, legitimacy of GEO-5 can be considered satisfactory.

10. Salience – For GEO-5 salience was synonymous with policy relevance. The primary objective of the GEO-5 project was "to conduct a global integrated environmental assessment that is legitimate, scientifically credible and results in policy relevant options that help inform decision-making at multiple scales". GEO-5 proved to be salient for global uses aligning constructively with the global discussions on sustainable development and the new sustainable development goals. It was less salient for national/(sub-)regional scales of use, which was understandable given the high priority of intended use at global levels. However, national and sub-regional and even sub-national are the scales where mitigation and adaptation decisions are made that are most closely linked to behavioural change and environmental impacts. GEO-5 took a top-down approach to policy starting from globally agreed environmental goals which suited the global priorities of the assessment. Policy guidance was assembled in regional chapters for GEO-5. However, the "region" is still too high a scale for usable policy options or useful policy guidance because of the variability in environmental and development settings and differences in the range, intensity and nature of factors that enable or discourage policy. In the view of the evaluation, achieving salience at lower scales including for countries was important, but would have required a much stronger bottom-up approach.

11. The general approach for GEAs still applies, and indeed GEO-5 has validated the effectiveness of that model, but in the future it will be important to increase the weight of legitimacy and salience relative to

credibility by ensuring that key interests are part of the assessment process including gender, sustainable development, and the full range of UNEP Major Groups and Stakeholders[3]. The logistical issues will be challenging, but with contemporary technology and boundary spanning approaches the next GEO could achieve a high level of salience and legitimacy for all affected interests and still be regarded as credible by them and other key stakeholders. It is also necessary to provide new ways to undertake some of the thorny data issues for an assessment, in particular to think about and assess credibility of data in new ways beyond peer reviewed literature. Standards need to be developed that ensure sufficient credibility but allow data from multiple sources, many of which will not be peer reviewed, to usefully inform policy options at much smaller scales. This is an urgent undertaking because the voices of the most vulnerable groups, such as women and less developed nations, and also of those who most affect the environment, such as private entrepreneurs and local authorities, are unlikely to be heard in the scientific information that is currently admitted to GEAs.

12. Capacity building – Adequate capacity both for contributing to and for making use of an assessment is critical to allow stakeholders to make full use of an assessment process and findings. The GC directed GEO-5 to provide capacity building for developing countries and this was re-emphasized in the Statement by the Global Intergovernmental and Multi-stakeholder Consultation. The Project Document explicitly planned for capacity building through training modules, regional trainings and the Fellowship Programme, but also expected capacity building to occur through participation in the GEO-5 process. Except for the Fellowship Programme, which successfully engaged at least 20 young scientists from across the world and different disciplines, capacity building efforts during GEO-5 were very limited due to time and budget constraints. While it is entirely likely that capacity of participants was enhanced through the cross-disciplinary undertaking to produce the chapters, developing countries were less represented among the chapter contributors. Overall capacity building by GEO-5 was judged moderately unsatisfactory.

13. Timeliness - GEO-5 was completed in time to be launched before the Rio+20 Earth Summit in June 2012 and governments were given the opportunity to comment on draft versions of the report as early as June 2011. Negotiation and endorsement of the Summary for Policy Makers was concluded by the end of January 2012. Two side-products of the GEO-5 were also pitched at, and prepared well before, the Summit (the booklets Keeping Track of our changing Environment: From Rio to Rio+20 and Measuring Progress: Environmental Goals & Gaps) and were widely disseminated through the UNEP Committee of Permanent Representatives, at UN Headquarters and meetings leading up to the Summit. Considering that GEO-5 was initiated March 2010 this constituted highly satisfactory performance on timeliness.

14. Communications - Communication and dissemination was primarily targeted at global and national governments, and very well planned and implemented using multiple media to reach a variety of audiences and was also judged highly satisfactory.

Attainment of project objectives and results

15. The evaluation judged the level of attainment of project objectives and results satisfactory. The priority for GEO-5 was to contribute to the global level deliberations at Rio+20 and the SDGs. In this it succeeded. GEO-5 was well received and the status of both the GEO and UNEP was advanced. More importantly, the status of the environment was enhanced in these sustainable development deliberations. While the evaluation was not able to trace a direct line between GEO-5 and the decisions, there is a strong and wide-spread perception by GEO-5 stakeholders and plentiful supporting information that provide confidence that GEO-5 did contribute positively to the discussions and decisions.

16. At lower scales such as at national levels the evaluation found several instances where use of the assessment knowledge or methods is already occurring, as one of many elements contributing to environmental and policy decisions.

Sustainability and replication

17. Supported by the mention of GEO in the Rio+20 Outcome Document and the consecutive United Nations General Assembly Resolution 67/213, UNEP has already managed to secure UN Regular Budget funding for roughly 20 percent of the total estimated cost of future GEOs. This contributes significantly to the financial sustainability of the GEO flagship in UNEP and is a considerable improvement over GEO-5. GEO-5

[3] http://www.unep.org/civil-society/MajorGroups/tabid/52184/Default.aspx

demonstrated the ability of UNEP to deliver a credible GEO that successfully achieved the priority contributions to global environmental policy and decisions in a relatively rapid timeframe and with constrained budgets. However, this placed considerable strain on DEWA staff and managers and was likely not a sustainable approach.

18. A GEO is a large (and growing, both in scope and complexity) investment that, over time, needs to be considered against the stream of benefits. Some benefits do not appear to diminish even as the GEO becomes dated, for instance older GEOs are still frequently downloaded and referenced. However, as environmental and sustainable development issues are pushed to the fore through the SDGs and more generally, the need for GEO approaches that are applicable across widely differing scales and temporal periods will increase. It is difficult to envision how this could be sustained with the current approach to GEO with a large effort every few years to provide an assessment. Options such as updating State and Trends and sectors periodically and as needed could better integrate GEO into regular work and budget cycles and provide a ready frame to respond to emerging priorities and issues in a more timely manner – whether a newly emerging topic, or newly emerging geographies of importance, or important emerging decision opportunities. This new setting can significantly alter how GEOs are used at different scales.

19. The rating of moderately likely for sustainability reflects the strong internal and external political support and a more secure budget for future GEOs, but also the need to adapt the overall approach of conducting GEOs to better meet environmental information and analysis requirements at widely differing scales and temporal periods, to match the changing profile of environmental issues, in recognition of the connectivity of sustainable development and the environment, and in light of increased technical capacities for data management, analysis and dissemination.

Efficiency

20. GEO-5 was successful in meeting the challenging 27 month timeline from start to launch. The evaluation has been unable to determine the exact actual costs of GEO-5; however they are expected to be somewhat higher than the revised budget of US$6 million and in line with comparable global assessments. GEO-5 was designed to rely on existing relationships and partnerships between UNEP and academic, research and governmental organisations and individuals. Overall, efficiency of the project was rated satisfactory.

Factors and processes affecting project performance

21. The evaluation considered a number of factors that could affect project performance including preparation and readiness (satisfactory); project implementation and management (satisfactory); stakeholder participation and public awareness (moderately satisfactory); country ownership and driven-ness (moderately satisfactory); financial planning and management (moderately unsatisfactory); supervision, guidance and technical backstopping (satisfactory); and monitoring and evaluation (moderately satisfactory).

Overall assessment

22. Overall, the evaluation found GEO-5 to have been a success and understands the challenges GEO-5 faced in achieving aspects judged less successful. Considering the high strategic relevance of the project, its satisfactory delivery of outputs and successful achievement of global use, and its satisfactory efficiency, but also its limited contribution to capacity for use of the assessment at national and (sub-)regional scales the evaluation rated the GEO-5 project overall satisfactory. Table ES1 below summarizes the main evaluation ratings.

Table ES1. Summary of evaluation ratings by criterion

Strategic relevance	Highly Satisfactory
Achievement of outputs	Satisfactory
Credibility	Highly Satisfactory
Legitimacy	Satisfactory
Salience	Satisfactory
Capacity building	Moderately Unsatisfactory
Timeliness	Highly Satisfactory
Communication	Highly Satisfactory
Effectiveness: Attainment of objectives and planned results	Satisfactory
Achievement of direct outcomes (as per the Theory of Change)	Satisfactory

Capacity gains from GEO-5	Moderately Satisfactory
GEO-5 assessments used for environmental decision making on global goals and agreements	Satisfactory
GEO-5 assessments are used for environmental decision making at national, (sub-)regional and sectoral levels	Satisfactory
Use of GEO-5 within UNEP for strategic planning	Not rated
Use of GEO-5 in research and academia	Not rated
Likelihood of impact	Not Rated
Sustainability and replication	Moderately Likely
Efficiency	Satisfactory
Preparation and readiness	Satisfactory
Project implementation and management	Satisfactory
Stakeholder participation and public awareness	Moderately Satisfactory
Country ownership and driven-ness	Moderately Satisfactory
Financial planning and management	Moderately Unsatisfactory
Supervision, guidance and technical backstopping	Satisfactory
Monitoring and evaluation	Moderately Satisfactory
Overall rating for the project	Satisfactory

Recommendations

23. The evaluation makes five recommendations for future GEOs:

- **Recommendation 1: The utility of future GEOs will be enhanced by reaching lower scales and addressing stakeholder interests directly affected by/affecting environmental change.** Therefore, future GEOs need to:

  a) Find ways to engage in the knowledge process an appropriate range of contributors who represent the interests who are affected by or at the origin of environmental problems;

  b) Ensure that the assessment is salient at these smaller scales by addressing questions that are relevant to these interests;

  c) Ensure that the questions can be addressed at these scales (e.g. national) and for these diverse interests (e.g. women, SMEs) by finding ways to more appropriately balance scientific credibility with other information sources and assessments. This will require better knowledge of how to achieve appropriate and transparent quality in assessments and will require going beyond heavy reliance on established approaches to scientific credibility;

  d) Consider a more continuous assessment process with periodic summaries of information and analysis at relevant geographic scales and new "chapters" addressing emerging issues, when there are ripe opportunities for use of the assessment for environmental decision making. This would require a different platform for a more adaptable GEO undertaking; and

  e) Make full use of new technologies for users, even at the most local levels, to access the assessment without having to go through a printed or online report. At the same time, explore how boundary spanning approaches can provide workable bridges from the assessment to users.

- **Recommendation 2: With the shifting needs and new challenges of GEAs, appropriate planning and management will be critically important to develop and implement a plausible outcome based approach and use that to monitor progress and identify improvements and problems. The next GEOs will need to be much more adaptive than the previous ones, and prospects for success will be affected by the quality of planning, resourcing and on results focused management.** Therefore:

  a) An adapted GEO approach moving onto challenging territories will absolutely require an outcome-focused planning framework including a plausible program theory. One can read similar recommendations in many evaluations; the persistent lack of attention to sound intervention

planning processes clearly indicates that senior management attention will be required. Almost always planning timelines and resources are in short supply; this is something that is within the reach of senior managers to address.

b) Formative and developmental monitoring and evaluation can contribute to an effective learning and improvement process from more innovative and ground breaking future approaches which by their nature will likely entail considerable ambiguity and uncertainty.

- **Recommendation 3: Future GEOs should continue to address policy but using improved approaches and resulting in information that is relevant at different scales and for major issues.** It is recommended that:

a) Policy assessment and development should move closer to the points of use and scales of use. This suggests that where external experts are needed or helpful, that their role includes working with key interests and local experts to assess and develop policies and build local capacities as part of the process. A future GEO should go beyond expert-validated policy options and actively seek local and national, sectoral and issue-specific policies and actions;

b) Policy assessment and development should document and share: the conditions that are being addressed, important external and internal factors that could affect success of the policy, costs and expected benefits, and other information that will help others understand the rationale, context and character of policies so that they can consider efficacy of these for their own use. Users should have a decision tree or similar decision tool that will aid them in seeking to match their environmental problems, scale, context, and other matters of importance with proposed policy options;

c) Stronger partnerships should be established with the appropriate organisations to address the challenges of developing the needed policy understanding and to span the boundaries between where policy is analysed and where decisions are made. UNEP Regional Offices and Collaborating Centres could play an important role in this regard. Successful efforts by the for-profit sector should also be included but an appropriate balance needs to be achieved between credibility and confidentiality of information from these organisations, perhaps using public-private intellectual partnership vehicles.; and

d) GEO or an associated undertaking such as UNEP Live should develop a trusted and useful mechanism where the knowledge from policy assessment, development and implementation can be collected, stored, discussed and accessed.

- **Recommendation 4: Directed efforts to build the capacity of key stakeholders to take an active part in the joint knowledge production process, and to make the best possible use of GEO information and analyses are required at smaller scale points of use.** Therefore:

a) Capacity building of stakeholders to contribute to the assessment and to make meaningful use of assessment findings and recommendations should be an explicit objective and component of any future GEO. It should use an appropriate mix of approaches using multiple media and linking theory to practice. This critical capacity building component, in both its dimensions, should never be reduced for time or budget reasons.

b) Capacity building to contribute to the assessment should be targeted as a priority to the expanded range of stakeholders at multiple scales that need to be involved in the assessment process to ensure its legitimacy (e.g. civil society, but also the for-profit sector) and policy relevance (e.g. government advisors in developing countries). Policy analysis should be a main topic of capacity building for assessment contributors.

c) Capacity building to use the assessment should be targeted primarily to environmental decision makers including government policy advisors at multiple scales and the business sector, but should also target the broadcasters of the assessment (e.g. the popular media), ensuring wide-

spread, appropriate communication of the most relevant assessment findings and feasible solutions at multiple scales.

- **Recommendation 5: Future GEOs should secure adequate staff and financial resources before the project is initiated and put in place more rigorous financial management and oversight systems.** It is therefore recommended that:

  a) Future GEO projects should be planned with a realistic duration and activities should be started on time to reduce time pressures on staff and partners/stakeholders involved in the process.

  b) Funding allocation decisions should be made in advance of project implementation to enable the team to do adequate financial planning, start activities on time and meet the set milestones in a timely fashion.

  c) Activity/output-based financial records should be kept in the course of the project and periodic activity/output-based financial reporting should be required.

  d) An appropriate financial oversight mechanism should be put in place to approve periodic budgets and verify periodic financial reports.

  e) A UNEP undertaking of the stature of the GEOs should have access to the most suited UNEP staff for the assessment including from other divisions. Staff time allocation and budgetary implications need to be agreed well in advance between divisions to enable successful interdivisional collaboration.

Introduction

1. The United Nations Environment Programme (UNEP) has the unique mandate within the United Nations (UN) system to keep the world environmental situation under review to ensure that emerging environmental problems of wide international significance are prioritized and receive appropriate consideration by governments[4]. In line with this mandate, in 1995, the UNEP Governing Council in its Decision 18/27 requested UNEP's Executive Director to prepare a comprehensive report on the state of the world environment, including possible response measures. This resulted in the initiation of the Global Environmental Outlooks (GEOs), now considered one of the "flagships[5]" of the organisation.

2. The Global Environmental Outlook (GEO) is both a *process* - conducting a global integrated environmental assessment (GEA) - and a range of *products* - a series of reports and side products, mapping the state and trends of the environment at global and regional scales. The GEOs are expected to bring the best available scientific knowledge to policy makers, bridging the science and policy spheres to enable better informed decision making. UNEP has produced five GEO reports, and a range of regional and thematic GEO products that build on the IEA methodology.

3. The "Fifth Global Environmental Outlook: Integrated Environmental Assessment (Project 44-P1)" - herein referred to as the GEO-5 project - launched its principle product the *GEO-5: Environment for the future we want* assessment in June 2012, on World Environment Day, two weeks prior to the United Nations Conference on Sustainable Development (Rio+20) in Rio de Janeiro, marking the 40th anniversary of the United Nations Conference on the Human Environment (Stockholm, 1972) and 20th anniversary of the United Nations Conference on Sustainable Development (Rio de Janeiro, 1992).

4. The US$ 6 million[6] project was led by the UNEP Division for Early Warning and Assessment (DEWA) with contributions from all other divisions of UNEP. UNEP also worked with member states and over 30 institutional partners worldwide (see Annex 9) in the process and production of GEO-5. The project commenced in October 2009 and was originally scheduled for closure in December 2012[7], after a period of 33 months. However the project closure was revised to December 2013[8] and finally to December 2014[9] to accommodate *inter alia* the UNEP Yearbooks for 2013 and 2014, the design of the UNEP Live and GEO-6 projects, and the GEO for Small Island Developing States.

5. The *Terminal Evaluation of the UNEP project Fifth Global Environmental Outlook: Integrated Environmental Assessment (Project 44-P1*) was undertaken in response to accountability requirements in line with the UNEP Evaluation Policy to assess project performance (relevance, effectiveness and efficiency) and determine actual and potential impacts stemming from the project, including their sustainability. The evaluation was to promote learning, feedback, and knowledge sharing through results and lessons learned among UNEP and GEO-5 partners.

6. The evaluation was conducted by two independent consultants, under the overall responsibility and management of the UNEP Evaluations Office (EO). It was conducted in consultation with the GEO-5 Head and members of the core production team and benefited from technical and strategic advice and direction from an Evaluation Reference Group (ERG).

[4] UNGA Resolution 2997 (XXVII) of 15 December 1972
[5] Flagship - a high visibility project, programme or publication, usually mobilizing a significant number of staff and resources from the organisation, and widely cited by UNEP's senior management as a major contribution of UNEP to meeting global environmental goals.
[6] As detailed in the 2014 Project Revision: Project 44-P1 Annex: Project Document Supplement (Signed: 28/03/2014)
[7] Project 44-P1; The Fifth Global Environment Outlook (GEO-5): Integrated Environmental Assessment, pg. 4
[8] Project 44-P1 Annex: Project Document Supplement (Signed: 31/10/2012)
[9] Project 44-P1 Annex: Project Document Supplement (Signed: 28/03/2014)

The Evaluation

1.1 Background of the Evaluation

7. The evaluation was initiated by the UNEP Evaluation office (EO) in line with UNEP Evaluation Policy[10] and the UNEP Evaluation Manual[11], The Fifth Global Environment Outlook (GEO-5): Integrated Environmental Assessment was subjected to a terminal evaluation as set out in the Project Document to assess the project performance (relevance, effectiveness and efficiency) and to determine actual and potential impacts stemming from the project, including their sustainability.

8. The evaluation was conducted between February and September 2014 by two independent consultants[12] led by Dr. Andy Rowe of ARCeconomics and supported by Ms. Norah Ng'eny under the overall responsibility and management of the UNEP Evaluation Office with invaluable support and contributions from Mr. Michael Carbon of EO. The evaluation was also conducted in consultation with the GEO-5 Head and members of the core GEO-5 production team. A budget of US$65,000 was allocated for the evaluation.

1.2 Evaluation Approach

9. The evaluation had two primary purposes: (i) to provide evidence of results to meet accountability requirements, and (ii) to promote learning, feedback, and knowledge-sharing through results and lessons learned among UNEP and GEO-5 partners. As such, the evaluation was expected to identify lessons of operational relevance for all aspects of design and implementation of similar projects, especially for the future GEO-6 project and the complementary UNEP Live project.

10. The approach of the evaluation was determined by the Terms of Reference (Annex 11) and the evaluation criteria specified therein to evaluate the GEO-5 project's performance: i) Strategic relevance, ii) Achievement of outputs, iii) Effectiveness: attainment of objectives and planned results, iv) Sustainability and replication, v) Efficiency, and vi) Factors and processes affecting project performance. These criteria were rated on a six-point scale[13]. Nine key evaluation questions were tailored to address and focus the evaluation on the project's intended outcomes, reflecting the evaluation criteria and the project's theory of change. For each core question, a set of sub-questions were developed (see Annex 2). The nine key questions were:

a. To what extent was the GEO-5 a legitimate process that involved the appropriate stakeholders (scientists and decision-makers) in the design, conduct, up-scale and use of the assessment?

b. How well did the project ensure scientific credibility of the report (and its by-products) by following accepted procedures and involving scientific experts, scientific peer reviews and using scientifically credible and authoritative sources?

c. To what extent did the project generate salient (timely and relevant) decision-making options at multiple scales/levels (primarily global and national/sub-regional)[14]?

d. Is there any early evidence of GEO-5 influence on decisions? What were the most effective strategies used by the project and what were the key drivers and assumptions required to influence decision-making?

e. How well were the GEO-5 process and products brought to scale to reach all target audiences?

f. To what extent did the project contribute to establishing the capacity of participants and targeted users to conduct assessments and to formulate policy on various levels?

[10] http://www.unep.org/eou/StandardsPolicyandPractices/UNEPEvaluationPolicy/tabid/3050/language/en-US/Default.aspx
[11] http://www.unep.org/eou/StandardsPolicyandPractices/UNEPEvaluationManual/tabid/2314/language/en-US/Default.aspx
[12] Consultants CVs attached in Annex 12
[13] The rating scale used was as follows: Highly Satisfactory (HS); Satisfactory (S); Moderately Satisfactory (MS); Moderately Unsatisfactory (MU); Unsatisfactory (U); Highly Unsatisfactory (HU). All criteria were subjected to this scale with the exception of the sustainability that was rated on the six-point scale of: Highly Likely (HL), Likely (L), Moderately Likely (ML), Moderately Unlikely (MU); Unlikely (U); and Highly Unlikely (HU).
[14] Not specified as region-specific or country-specific

g. Did the GEO-5 process recognise and take advantage of opportunities (ripe situations) for use of the assessment findings and policy options?

h. To what extent and at what stages were chapter authors and other scientific members of GEO-5, decision makers and other key stakeholders at global, regional and national levels involved in a joint knowledge process?

i. How effectively and efficiently was the overall project planned, coordinated and monitored? What was the performance of the multiple UNEP divisions and partners involved in the project?

11. The evaluation used a combination of qualitative and quantitative methods for data collection and analysis adopting a largely participatory approach in the process. Specifically, four information gathering approaches were used: administrative data review, electronic surveys, interviews (including face-to-face, Skype and personal interviews) and extensive review of documents relevant to the project and evaluation of GEAs. Clusters of respondents were identified for the surveys and interviews as presented in Annex 6.

- *Administrative data* included many spreadsheets listing and categorizing contributors to GEO-5 and data from UNEP's Division for Communication and Public Information (DCPI) recoding web access to GEO-5 documents. The availability of these and assistance understanding them was a valuable resource for the evaluation. Inevitably, there was some missing data and the GEO-5 team were for the most part very helpful in filling in the gaps. The evaluation used this data to design the surveys and conduct the analysis of legitimacy, one of three central attributes in a GEA. Further information was collected from the survey of GEO-5 contributors. *Interviews with members of the GEO-5 team*, in-person for those located in Nairobi, by Skype or telephone for the remainder. Most members of the GEO-5 team participated in at least one interview, some key members were interviewed several times.

- *Review of programme documents.* An extensive compilation of programme documents was available for the evaluation and, along with interviews, were the principle sources for the Inception Report. They were also used to understand the global deliberations and goals of GEO-5, and to examine the GEO-5 financial arrangements.

- *Surveys.* The evaluation conducted two online surveys central to the evaluation; the first targeted all members of the GEO-5 managing team and all UNEP regional focal points, the second was addressed to all authors and reviewers contributing to GEO-5. Response rates were good for both surveys and no observable sources of bias were identified. Later in the evaluation process, an email survey was conducted addressed to national environment agencies to supplement information about use of GEO-5 at national levels. The email questionnaire was sent to all GEF operational focal points, which are usually the heads of national environment agencies[15]. Not unexpectedly, the response rate for the national email survey was low. Further details on the surveys can be found Table 2 below and in Annex 6.

- *Focus group discussion with members of the UNEP Committee of Permanent Representatives.* The evaluation held an informal meeting with CPR members at UNEP Head Quarters in Nairobi, to better understand the level of country involvement in the process, collect examples, types and level of use at national levels, and obtain views on the main strengths and weaknesses of the GEO-5 process. The discussion was attended by 14 countries. One additional country responded to the discussion topics in writing (See Annex 3).

[15] http://www.thegef.org/gef/focal_points_list

Table 2: Overview of evaluation surveys

Survey	Purpose	Who was included	Population	Responses (usable responses)	Response Rate
Survey of GEO-5 team and UNEP/DEWA regional coordinators	Web survey to gain additional information about how GEO-5 understood and approached the elements in the Theory of Change	GEO-5 team	6	6 (6)	100%
		UNEP regional focal points	5	5 (5)	100%
Survey of author and reviewers contributing to GEO-5	Web survey to gain inputs from GEO-5 contributors on a range of topics including demographics, prior GEA experience, UNEP as an appropriate convenor, use of GEO-5, quality of approach and management, capacity of contributors, credibility of GEO-5, comparison to other GEAs, experience as a Fellow, gains in working relationships with other contributors and suggestions for improvements.	Coordinating lead authors	31	26(26)	84%
		Lead Authors	82	57(56)	70%
		Contributing Authors	106	57(54)	54%
		Fellows	20*	11(11)	73%
		Reviewers	182	90(82)	49%
		Not classified	2	2(2)	100%
		Total	408	243(229)	60%
Survey of national environment agencies	Email survey to obtain views on the likelihood of use and influence of GEO-5 at the national level, the main obstacles for use of GEO-5 at the national level, the balance between different types of information sources, and the main strengths and weaknesses of the GEO process and products.	Member States	182	12	6.6%

Note: The GEO-5 Fellows list posted online counts 25 Fellows, but 5 are missing from the UNEP internal list provided by UNEP/DEWA. Only the 20 Fellows in the UNEP/DEWA list were contacted for the survey.

- *UN Human Development Index (HDI).* An important element of the legitimacy of a GEA is the representativeness of contributors to the assessment in regard to the level of development of their countries of origin. This is because one dimension of legitimacy is about the fair representation of views of countries across the whole development spectrum. The evaluation used the HDI of the country of citizenship of contributors to calculate median HDI values for each category of participants. Citizenship information was obtained through the author and reviewer survey.

1.3 Evaluation Reference Group

12. An Evaluation Reference Group **(ERG)** was constituted to provide contextual insights and strategic direction that helped shape the evaluation findings and recommendations, and feedback on the evaluation approach, findings and recommendations. The ERG was comprised of five well-respected, senior individuals with a diverse background including three stakeholders in the GEO-5 process (one member of the High Level Intergovernmental Advisory Panel, one member of the Science and Policy Advisory Board, and one senior government official); one scholar who has conducted in-depth research on the use of large-scale environmental assessments; and one professional evaluator belonging to a UN sister agency. Details of the ERG members are provided in Annex 5.

1.4 Limitations of the Evaluation

13. The evaluation was undertaken with a limited budget, which restricted the number of evaluation team members, reduced the consultants' time availability, and constrained the variety of evaluation methods and tools that could be used. The main approaches included use of Project Documents and data, interviews (individual and groups, in person and by telephone) and web-based and email surveys. These approaches were extensive in nature, reaching most who contributed to GEO-5 within the evaluation budget and allotted time. Some evaluation concerns would have benefited from more intensive approaches. For example, use of GEO-5 for policy and environmental decisions was the focus of GEO-5 and the mechanism whereby GEO-5 could contribute to improved environmental conditions. Use is a complex and emergent outcome with many influencing factors and changes across scale and temporal and spatial frames. Achieving use is a difficult undertaking for an intervention such as GEO-5, likewise it is difficult to evaluate. At the global level, the challenge is tracing the complex causal chains leading to and from a decision and ascertaining the contribution of the intervention to these. At national levels use can occur across many different locales and times within one nation, and across many nations it is a tangled web. Furthermore, the challenge to attribute changes to a GEA beyond use for environmental decision making, for example in terms of behavioural changes and, ultimately, impact on the environment and human well-being is enormous. There are very many factors other than environmental policies and decisions that drive lasting positive changes in environmental management, and those changes in management alone are also dependent on many external conditions to have a lasting impact on environmental sustainability and sustainable development. More about this is explained below in the report under 3.8 Reconstructed Theory of Change of the Project.

14. Evaluation case studies could have advanced the understanding of use considerably; direct empirical verification of claimed early uses would have been valuable; and by sampling potential global and national venues for use as part of a highly structured inquiry might have enabled the evaluation to develop estimates of future use. These and other approaches were considered, but were beyond the resources available. Similarly, the evaluation team would have liked to know more about how the balance between legitimacy, credibility and salience actually played out in a representative set of Chapters. This would have enabled a more detailed understanding of how GEO-5 was actually undertaken, what particular challenges were met by the different chapters, and providing insights into how the trade-off played out between the six key assessment attributes. Again, the evaluation did not have the resources for this. The evaluation had to limit the inquiry on use to the GEO-5 main products only and was unable to explore use of several potentially important side-products (see paragraph 32 below). In addition, add-on outputs of the GEO-5 project such as specification for UNEP Live, the UNEP Year Books for 2013 and 2014 and the GEO for Small Island Developing States, were not evaluated as they were not considered part of the GEO-5 assessment process and products. Finally, an evidence-based impact assessment was far beyond the resource and time availabilities of the evaluation. A theoretical approach had to be used to explore likelihood of impact, and no firm conclusion on impact could be reached.

15. GEO is a rapidly changing intervention with plans for GEO-6 being advanced while the evaluation of GEO-5 was being initiated. The evaluation provided an interim briefing of preliminary findings to inform GEO-6 planning. This preliminary findings note was mainly used internally in UNEP as it was not shared with all relevant UNEA participants contrary to the suggestion by the Evaluation Office. However, a briefing note and subsequently the draft evaluation report were shared and discussed at the GEO-6 Global

Intergovernmental and Multi-stakeholder Consultation held in Berlin on October 21th-23th 2014 to enable evaluation findings to feed into the preparations for GEO-6.

16. The evaluation did not have any difficulties accessing UNEP staff involved in GEO-5. The team also did not encounter serious problems securing a reasonable response rate for the survey of contributors. However, efforts to reach potential national users[16] were less successful because they were not directly involved with GEO-5 and so had lower incentives to respond. This limited the evaluation's ability to identify and confirm use of GEO-5 at national levels. Similarly, a staff survey to gauge use of GEO-5 findings and recommendations within UNEP was not conducted and due to a lack of source referencing in UNEP planning documents, the evaluation could not establish with any degree of certainty whether GEO-5 was used for strategic planning within UNEP.

17. Finally, despite sustained efforts to obtain the needed information, the evaluation team was unable to determine the actual expenditures per activity or even per project component. This constrained the evaluation's ability to examine how the project team prioritized the activities and outputs in the GEO-5 assessment.

[16] UNEP CPR members and heads of national environment ministries and agencies.

The Project

1.5 Context

18. Over the last twenty years the world has changed tremendously. Economic production patterns are shifting among regions, and trade volumes are rising steeply. Natural resources are being depleted or degraded at increasing rates as a result of the ever-growing human demand for resources such as water, energy, food, minerals and land, driven by growing populations with rising incomes, while in parallel these resources are increasingly constrained by ecosystem changes and the impacts of climate change.

19. At the same time, the Internet, mobile phones and other information and communications technologies have made the world seem a much smaller place. There are about 2.8 billion Internet users worldwide[17] and some 4.5 billion people have subscribed to mobile phone services[18]. Social media have further increased connectivity in recent years, with Facebook, for example, passing 1.23 billion monthly active users and 757 million daily users[19] since it was launched in 2004. Smartphone users are expected to total 1.75 billion worldwide[20] by the end of 2014.

20. In this rapidly changing world there is a need for up-to-date information on the world environment situation. Policy and decision makers at all levels require timely and credible environmental, social and economic data at different scales to be able to make sound environment-related decisions towards sustainable development. A large number of global, regional and thematic environmental assessments have been produced over the last thirty years or so, with approximately 60 GEAs undertaken during the ten years prior to the commencement of GEO-5 (Mitchell 2006)[21] – including the UNEP Global Environment Outlooks.

21. GEO-5 is the fifth assessment produced in the Global Environment Outlook (GEO) series undertaken by UNEP to assess the state of the environment as mandated by the UNEP Governing Council. The first GEO was produced in 1997 providing a snapshot of the world environment by region. The second GEO named GEO 2000 and published in 1999, introduced Collaborating Centres at the core of the GEO process. GEO 2000 expanded regional inputs to the process thereby providing a balance between top-down scientific assessment and bottom-up regional inputs. GEO-3, published in 2002, provided a longer overview of environmental change reaching back 30 years - since the United Nations General Assembly (UNGA) resolution in 1972 - and included analysis of how social, economic and other factors contributed to these changes. GEO-3 also looked thirty years into the future, using four scenarios incorporating changes in a range of areas including population, economics, technology and development, with particular attention to linkages between the environment and human well-being. GEO-3 introduced the Driving forces-Pressures-State-Impacts-Responses (DPSIR) framework to the GEOs giving more attention to social processes shaping human activities that affect the environment (driving forces) and effects of the changing environment on human well-being (impacts) that motivate most of the responses. GEO-4, published in 2007, built on GEO-3 by linking environment and development using the Millennium Development Goals (MDGs), the World Commission on Environment and Development (Brundtland Commission) and other international environmental declarations and agreements. GEO-4 provided a comprehensive overview of the state and trends of the environment based on priority issues identified by regions.

22. In 2009, the UNEP Governing Council requested[22] the UNEP Executive Director to undertake a comprehensive integrated global assessment, the fifth GEO, which would inform, as appropriate, the strategic directions of UNEP. The GC specifically invited "the Executive Director to organize a GEO-5

[17] http://www.internetworldstats.com/stats.htm
[18] http://mobiforge.com/research-analysis/global-mobile-statistics-2014-part-a-mobile-subscribers-handset-market-share-mobile-operators#uniquesubscribers
[19] http://thenextweb.com/facebook/2014/01/29/facebook-passes-1-23-billion-monthly-active-users-945-million-mobile-users-757-million-daily-users/
[20] http://www.emarketer.com/Article/Smartphone-Users-Worldwide-Will-Total-175-Billion-2014/1010536
[21] The list was adopted and revised from Mitchell, R. B. (2006). Global environmental assessments: information and influence, MIT Press. Pg. 5, Figure 1.1.
[22] GC Decision 25/2: http://www.unep.org/GC/GC25/Docs/GC25-DRAFTDECISION.pdf

process in which the scope, objectives and process of the Global Environment Outlook are finalized and adopted at a global intergovernmental and multi-stakeholder consultation".

23. The GC Decision also requested the Executive Director to engage all relevant stakeholders in conducting global environmental assessments to support and further strengthen their scientific credibility, policy relevance and legitimacy. The GC requested that the policy relevance of GEO-5 be strengthened by including an analysis of appropriate policy options and their indicative costs and benefits; that intergovernmental and multi-stakeholder consultation be increased in the design of the process and the development of a Summary for Policy Makers; and that capacity-building for developing countries be given priority as a component of the assessment processes.

24. In terms of assessment scope, while GEO-5 would continue to provide a state and trends analysis of the global environment and include an outlook component, the assessment would also assess existing solutions. It would provide a scientific analysis of selected environmental challenges and the solutions (in the form of actionable policy options) available to address them - including their economic, environmental, and social costs and benefits and associated trade-offs. GEO-5 was also expected to have a strong regional focus, highlighting regional specificities in how key environmental challenges are addressed and the feasibility of applying particular solutions.

25. Capacity building was designed as an integral part of the project. The capacity of collaborating institutions and individual experts was to be developed as they conducted the GEO-5 assessment - through interactions with other assessment partners from different disciplines; and through the analysis of environmental and economic data and information. The project would also enhance training modules on Integrated Environmental Assessment practice, policy analyses and methodology, which would be made available to all GEO-5 participants within and outside UNEP as well as to UNEP's broader stakeholder community.

26. The *GEO-5 Report* was launched on World Environment Day, 2 weeks prior to the United Nations Conference for Sustainable Development in June 2012 (Rio+20), marking the 20-year anniversary of the Earth Summit; the 10-year anniversary of WSSD; and the 40-year anniversary of the Stockholm Conference, which established UNEP. Prior to the launch of the full report, a number of intermediate products were produced to support the Rio+20 preparatory processes. The *Summary for Policy Makers* provided UNEP the opportunity to bring the findings of the assessment to bear on decision-making. It was published in January 2012, after it had been negotiated and endorsed by an intergovernmental consultation. Other side-products were prepared after the Rio+20 Summit.

1.6 Project objectives and components

27. As stated in the Project Document[23], the primary objective of the GEO-5 project was "to conduct a global integrated environmental assessment that is legitimate, scientifically credible and results in policy relevant options that help inform decision-making at multiple scales.[24]"

28. The GEO-5 Report was (and still is) expected to inform relevant global international policy processes, agreements and declarations, as well as the future strategic directions for UNEP programmes. More specifically:

i. To ensure *legitimacy* - the GEO-5 process would involve stakeholders from different relevant disciplines in the design, implementation and review stages of the assessment. It would also involve national/regional experts in the conduct of the assessment;

ii. To ensure strengthened *scientific credibility* - the GEO-5 process was to use the best available science, credible experts, quality data, and to carry out a sound peer-review process;

iii. To ensure *policy-relevance* - the GEO-5 process would involve governmental and non-governmental actors in the design and conduct of the assessment, with the aim to understand the needs of the different stakeholders and to attempt to adequately address them. The process was expected to generate products that would give decision-makers policy-relevant options for action

[23] GEO-5 Project document - Project 44-P1
[24] GEO-5 Project document - Project 44-P1, Pg. 7

as well as create the opportunity for governments to negotiate and endorse the *Summary for Policy Makers*.

29. The GEO-5 project components (called "outputs" in the Project Document) were organized around the 3 expected attributes of the GEO-5 process noted above adding a 4th component on effective communication to the specified target audiences including governmental audiences, for-profit sector, NGOs, and the UN family.

1.7 Target groups

30. The Project Document is rather vague on target audiences but the GEO-5 Outreach Plan[25] is more specific. The GEO-5 process and main report were targeted, in the first instance, at governments (representatives of environment-related sectors in particular) and the UN system, including the Multilateral Environmental Agreements. Its secondary audience was categorized along UNEP's Major Groups and included *inter alia* civil society organisations, the scientific and educational community, youth and the for-profit sector with an interest in global environmental issues. The GEO-5 Outreach Strategy distinguishes end-users and broadcasters of the GEO-5. The latter are expected to play an important role in further relaying the contents of the report to end-users (See Table 3 below).

Table 3. End-users and broadcasters of GEO-5

i) End-users of the assessment findings (Listed in order of priority)	• The UNEP Governing Council (the mandated audience i.e. those who called for the assessment) and government representatives of environment-related sectors; • Government representatives of other sectors that influence the work of the environment ministries (this group will vary in each region based on the priority issues identified); • United Nations Secretariat and agencies (particularly those who work on issues related to meeting the internationally agreed goals); • The Rio+20 Conference and its Preparatory committees; • Multilateral Environmental Agreements (their subsidiary bodies and COPs); • UNEP's Major Groups and Stakeholders including: Indigenous peoples and their communities, youth groups, business and industry, the scientific and educational community; workers organizations and trade unions, women's groups, local authorities, farmer's networks and organizations, NGO's, regional political fora, regional economic commissions and development banks, regional conventions, organizations, associations and conferences and intergovernmental organizations; and • UNEP Collaborating Centres
ii) Broadcasters of the assessment	• Media • Major groups and stakeholders (see above) • UNEP Collaborating Centres

Source: GEO-5 Outreach strategy, Annex 1

31. The GEO-5 was first and foremost a *global* environmental assessment process that produced an assessment on specific environmental thematic areas of global concern which included: atmosphere, land, water, biodiversity, and chemicals and waste. The *regions* were targeted as well, with regional chapters in the GEO-5 report dedicated to environmental policy options for the six regions. The report also included a regional summary providing an overview of the priority themes and goals from each region[26]. Separate chapters were dedicated to drivers, scenarios, global responses and a review of data needs.

[25] UNEP 2010, *GEO-5 Outreach Plan*, United Nations Environment Programme, viewed 12 September 2014, <http://www.unep.org/geo/pdfs/GEO-5_Outreach_Plan_GEOwebsite.pdf>.
[26] GEO-5 report, Pg. 401. -UNEP 2012b, *Global Environment Outlook 5*, UNEP, Nairobi.

32. GEO-5 further produced complementary publications that were targeted at specific (and, in some cases, non-traditional) audiences, including: a *Summary for Policy Makers (SPM)* targeted at decision makers at global to national levels; the GEO for Youth, targeted at young people globally; the GEO for Local Government, targeted at national and local governments/authorities; and the GEO for Business, targeted at the business community. Other publications produced under the GEO-5 banner included *Measuring Progress on Global Environmental Goals* and *Keeping Track of Our Changing Environment* that were also targeted at decision and policy makers.

33. Preparatory work on the specifications of UNEP Live[27] was integrated in the GEO-5 Project Document, but is not the object of this evaluation as it was still in full swing during this evaluation. UNEP Live is intended to become a cutting-edge, dynamic platform to collect, process and share the world's best environmental science and research. The on-line platform, which is now operational, is meant to be interactive, user-friendly, data-rich and multi-functional. Eventually, UNEP Live is expected to serve as UNEP's principal knowledge management platform, using global services combined with regional, national and local information to promote near-real time data flows, identify key and emerging environmental issues and support the development of integrated assessments on the state, trends and outlooks for the environment. Data would be provided by governments and the public to create a platform with environmental data that can be used as a basis for decision-making, science and research by governments and other stakeholders.

1.8 Key dates in project implementation

34. Table 4 presents the timeline for the GEO-5 report production process, including key activities and complementary publications that were produced and launched over the lifetime of the project.

[27] See for instance: http://www.unep.org/NewsCentre/default.aspx?ArticleID=10690&DocumentID=2758

Table 4. GEO-5 timeline

Year	Months	Activity
2009	February	UNEP Governing Council Decision 25/2 on GEO-5
2010	March	Intergovernmental and Multi-stakeholder consultation
	April	High Level Inter-governmental Advisory panel established
	April - May	Nomination of Experts
	June	1st meeting of High-level Inter-governmental Advisory Panel
	July - October	Selection of Experts (Author groups)
	August	Data and Indicators Working Group established
	August	Science and Policy Advisory Board established
	September - October	Regional Consultations
	November	1st Production Meeting
	December - January	Annotated Outlines
2011	March	Internal Reviews
	March	DRAFT ZERO
	March - August	Authors working group meetings
	April	1st Science and Policy Advisory Board Meetings
	May	DRAFT ONE
	May	Part one harmonization meeting
	May - July	1st External Review
	June	2nd meeting of the High-Level Intergovernmental Advisory Panel
	August - October	2nd External review
	September	DRAFT TWO
	November	2nd Science and Policy Advisory Board meeting
	December	DRAFT THREE
	December	Authors sign-off
	December - April	Final editing, Q&A and proofing
	November	*Keeping track of our changing environment* launched
2012	January	Intergovernmental Meeting to endorse Summary for Policy Makers
	January	*Summary for Policy Makers* Launch at 12th GC/GMEF Special Session
	March - May	Design and layout
	June	Final inter-sessional meeting of UNCSD Secretariat
	June	*GEO-5 Report* Launched
	June	Rio+20
	June	*GEO-5 for Local Government* launched at ICLEI's World Congress
	June	*Measuring Progress: Environmental Goals and Gaps* released
	August	Two supporting technical briefs entitled *Global Water Challenges* and *Managing Increasing Pressures on Land* developed
	September	GEO-5 was launched at University of Massachusetts, Boston
2013	February	*GEO for Youth* launched at the at the 2013 TUNZA International Youth Conference in Nairobi
	May	GEO-5 has been translated in to Spanish and launched in Panama
	June	*GEO for Business* launched in London

Source: Adopted and modified from the GEO-5 report, pg. 490-491

1.9 Implementation arrangements

35. UNEP's Division for Early Warning and Assessment (DEWA) had the overall responsibility for the execution of the GEO-5 project in collaboration with other UNEP divisions and other project partners/collaborating institutions. The GEO-5 Project Document[28] specifies budgetary allocations and responsible parties for each activity. A governance model is presented in the Project Document with clear designation of roles and responsibilities and reporting lines. The UNEP institutional framework in relation to project implementation is also clearly noted.

36. The responsibility structure for the GEO-5 process within UNEP was also detailed in the Project Document and summarized in the Table 5 below.

[28] GEO-5 Project document - Project 44-P1

Table 5. Responsibilities within UNEP for GEO-5

Responsible party	Responsibility
UNEP Senior Management team	• Sign-off on final drafts of the Summary for Policy Makers report *prior to the Intergovernmental Consultation*
Chief Scientist	• Set-up an Advisory Board for the GEO-5 process • Provide advisory support to the GEO-5 process • Sign-off on *Guidelines for Ensuring Scientific Credibility of the GEO-5 Report*
DEWA Director (in consultation with the Head of GEO)	• Sign-off on final version of *GEO-5 Report* • Sign-off on draft *Summary for Policy Makers* prior to the Intergovernmental Consultation • Sign-off on *GEO-5 Influence/Impact Study Plan*
Head of GEO	• Ensure Data and Indicators group is formed • Ensure guidelines are available to all those participating in the assessment • Ensure coordination of full GEO-5 process and maintain good communication with all stakeholders • Ensure that *GEO-5 Report* and *SPM* are produced and available for distribution • Ensure that Influence/*Impact Study* is available and implemented • Ensure Training modules are available • Deliver UNEP Live specifications to the Governing Council
UNEP GEO-5 team (part of Divisional input into the process)	• Agreement on *Guidelines for Ensuring Scientific Credibility and Policy Relevance* • Agreement on *Outreach Plan for the GEO-5 Report* • Agreement on *GEO-5 Influence/Impact Study Plan* • Agreement on content drafted for GEO-5 • Agreement that Draft *GEO-5 Report* is logical, consistent, and adheres to scope and objectives and scientific guidelines
DCPI Project Leads	• Design Outreach and Communication plan and take the lead in implementing it • Track report distribution to target audiences • Monitor quarterly sales report • Provide web statistics of GEO-5 site visits and downloads • Ensure *GEO-5 Report* and *SPM* are available for download on UNEP's website • Ensure that tailor-made products are of high quality, and relevant to the target audience and disseminated appropriately.

Source: GEO-5 Project Document - Project 44-P1, Pg. 21-22

37. Advisory and consultative bodies were constituted to drive the legitimacy, scientific credibility, policy-relevance and communication of the GEO-5 process and products, as summarized in Table 6 below.

Table 6. Advisory and consultative bodies for GEO-5

Responsible party	Responsibility
Global Intergovernmental and Multistakeholder Consultation	• Approval of Scope, Objectives, and Process of the GEO-5 Report
Global Intergovernmental Consultation on the GEO-5 Summary for Policy Makers	• Negotiate and endorse the Summary for Policy Makers
GEO-5 Science and Policy Advisory Board	• Provide scientific and policy guidance and support to GEO-5 authors and UNEP GEO-5 team during content drafting
GEO-5 High Level Intergovernmental Advisory Panel	• Provide guidance to authors on internationally agreed goals and policies • Consult lead authors and advise on the Summary for Policy makers
Group of leading policy experts	• Design the methodology for policy assessment
Data and Indicators Working Group	• Updating and maintaining global and regional data portals • Provide support on data collection and verification throughout the assessment process • Ensure strict application of quality controls for data and information • Develop specific indicators and scenario analysis to support components of GEO-5
Independent Review Team (Principal Scientific Reviewers and supporting Science Reviewers)	• Scientific peer review chapters of the report and make sure that comments received from reviewers have been adequately addressed.

Source: GEO-5 Project Document, Project 44-P1 - Pg. 10-12

38. An outreach strategy[29] was developed to outline and guide the engagement of and communication with stakeholders. The strategy identified target audiences, specific products/publications to be produced in addition to the GEO-5 report and SPM, and launch opportunities for the main reports of GEO-5.

1.10 Project financing

39. At design[30], the GEO-5 project was estimated to cost US$9,288,600 (as at project approval - 19th May 2010) of which US$7.612 million was allocated to the four components/outputs of the project and 1.668 million allocated to programme support and additional staffing costs.

40. The project was unable to secure all the programmed funding. The project mobilised US$6,011,082 by October 2012[31] and later mobilized roughly an additional US$1 million, bringing the total secured budget to US$7,032,600[32] of which US$5,973,366 could be allocated to the four original components/outputs of the project. This was about 21 percent lower than the original budget.

Table 7. GEO-5 Budget breakdown (in US$)

Component	Original budget (19th May 2010)	Mobilised funding (as at September 2014)
Output A: GEO-5 is a legitimate process that involves a diverse range of stakeholders and partners in the design and conduct of the assessment.	3,392,000	Unknown
Output B: GEO-5 Report is scientifically credible	1,410,000	Unknown
Output C: GEO-5 and its Summary for Policy Makers is policy-relevant to the specified target audience	710,000	Unknown
Output D: GEO-5 is effectively communicated to the specified target audiences	2,070,000	280,438
Total Output A-D	**7,582,000**	**5,973,366**
UNEP Live	30,000	
2013-2014 additions: UNEP Live, GEO-SIDS, UNEP Year Books for 2013 and 2014, Terminal Evaluation		586,769
Total project cost	**7,612,000**	**6,560,135**
Additional Staffing Needs	608, 000	-
Programme Support Costs	1,068,600	472,465
Grand total project cost	**9,288,600**	**7,032,600**

Sources: Project Document, Project 44-P1 (Signed: 13/05/2010) and Project 44-P1 Annex: Project Document Supplement (Signed: 28/03/2014)

41. It should be noted that DEWA initially mobilized US$400,000 to partially fund the first Intergovernmental and multi-stakeholder consultation held in Nairobi in March 2010. This amount is not included in the total project cost estimated in the Project Document. Two project posts were included in the budget for a G4 and P3 position (see the Additional Staffing Needs row in Table 7). Other staff costs outside of these were not included in the budget at the time of project design. There were also quite generous in-kind (staff time) contributions from a few UNEP Collaborating Centres (GRID-Arendal and the World Conservation Monitoring Centre – WCMC). Therefore, the total budget figures above understate the actual cost of GEO-5.

42. Cash funding for GEO-5 from various donors/sources is detailed in Table 8 below. Not included in the table are the important contributions for the translations of the GEO-5 main report in Chinese, funded by a Chinese foundation (Elion Charity Foundation) and in Spanish, funded by the Inter-American Development Bank, amounting together to about US$0.5 million.

[29] UNEP. (2010). "GEO-5 Outreach Plan." Retrieved 12 September, 2014, from http://www.unep.org/geo/pdfs/GEO-5_Outreach_Plan_GEOwebsite.pdf.
[30] As detailed in the Project Document, Project 44-P1 (Signed: 13/05/2010)
[31] Project 44-P1 Annex: Project Document Supplement (Signed: 31/10/2012)
[32] Project 44-P1 Annex: Project Document Supplement (Signed: 28/03/2014)

Table 8. GEO-5 donors/funding sources

Funds From	Amount (US$)
UNEP (Environment Fund)	1.54 Million
Norway	3.9 Million
Sweden	1.02 Million
Switzerland	0.29 Million
Korea	0.28 Million
Canada	0.01 Million
TOTAL	**7.03 Million**

Source: 2014 revision pg. 2 - Project 44-P1 Annex: Project Document Supplement (Signed: 28/03/2014)

1.11 Project partners

43. GEO-5 had a wide range of over eighty partners and collaborating organisations, who participated to varying degrees and at different stages in the GEO-5 process. These included UN agencies, intergovernmental bodies, government ministries, institutions and agencies, global, regional and national research institutions, academia, civil society organizations, interest group associations and councils[33/34].

44. Partners participated at different levels and stages of the GEO-5 process: in the chapter working groups as Coordinating Lead Authors, Lead Authors, Contributing Authors and Reviewers; in the specialist groups including a Policy Experts Group and a Data and Indicators Working Group; in the advisory groups specifically the High-Level Intergovernmental Advisory Panel and the Science and Policy Advisory Board; in support of the GEO-5 Fellowship Programme; etc. Engagement of governments and other stakeholders was given impetus in the development of the assessment and other complementary publications. These are further detailed in this report.

1.12 Reconstructed Theory of Change of the project

45. A Theory of Change (ToC) is a key component for evaluation. It should illustrate how the intervention intends or intended, to achieve the desired results[35]. It is not unusual to have to construct or reconstruct a ToC well after the intervention has been initiated, or even after it is completed. In many cases the intervention has not itself prepared a ToC, even though this could have been helpful in articulating the vision for the programme and could have guided important choices made during design and implementation.

46. In the case of GEO-5 an explicit ToC was not developed at design stage. This was not a requirement at the time, but has become one in UNEP since 2014. However, as transpires from the project design document, given the quality of knowledge from prior GEO iterations and the literature on global environmental assessments, the lack of an explicit programme theory was not really problematic.

47. A reconstructed ToC[36] for GEO-5 is presented in Figure 1 below, based on design documents, the literature and interviews conducted during the inception phase of the evaluation. Assessments are more likely to be used if, in addition to being scientifically credible, the assessment addresses questions that are relevant to decision makers, provide knowledge in time for it to be used, and if decision makers and key stakeholders regard the assessment as fair and attending to the interests they represent. The driver of change that establishes these elements is participation of targeted users or those who can influence them directly in the knowledge process. The emphasis is on establishing a knowledge process that appropriately balances the

[33] GEO-5 Report - List of contributing individuals and institutions - Pg. 502-504

[34] http://www.unep.org/geo/GEO_Partners.asp

[35] The ToC of a project depicts the causal pathways from project outputs (goods and services delivered by the project) through outcomes (changes resulting from the use made by key stakeholders of project outputs) towards impact (long term changes in environmental benefits and human well-being). The ToC will also depict any intermediate changes required between project outcomes and impact, called 'intermediate states'. The ToC further defines the external factors that influence change along the major pathways, whether one result can lead to the next. These external factors are either drivers (when the project has a certain level of control) or assumptions (when the project has no control). It also clearly identifies the main stakeholders involved in the change processes.

[36] Each intervention has a Theory of Change, but it is often not explicit in design documents. "Reconstructed" here means that the implicit ToC of the GEO-5 project was revealed from a review of design documents, interviews etc.

interests and priorities of scientists with the needs of these users and influencers, and where the scientists and user-participants work together to shape and undertake the assessment. The outputs identified in Figure 1 are the key elements affecting use. The GEO-5 approach emphasises process heavily, as a means of attaining a scientifically credible assessment and of promoting use of the assessment for policy at global, regional and national levels. The expectation then is that an assessment perceived to be credible and legitimate, and suggesting salient policy options, will be used to inform and guide environmental decisions.

48. Further up the causal pathway, these improved environmental decisions should contribute to better environmental management and, ultimately, to improved environmental conditions and human wellbeing. However, for these environmental benefits to be achieved, some external conditions need to be met that are not (fully) under control of the GEO-5 project. The external conditions are called assumptions in evaluation terminology. Such assumptions include long-term political commitment, availability of resources (human and financial) for implementation and enforcement of decisions, sufficient public awareness and civil society action, and effective incentives for the for-profit sector. In countries where one or more of these assumptions is false, GEO-5 would only improve intentions and heighten expectations in the short term, but not contribute to effective improvements in environmental management and benefits.

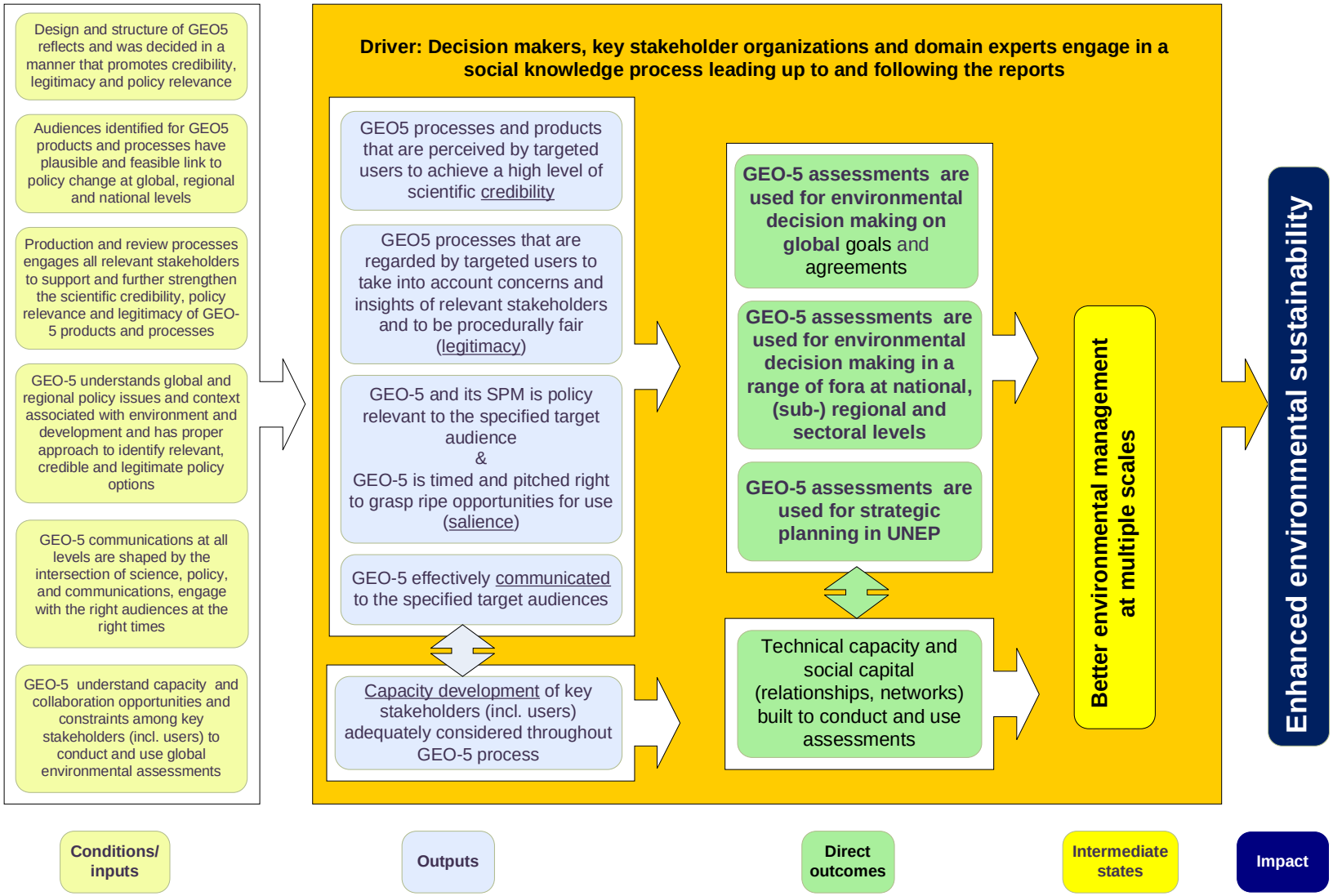


Figure 1: Reconstructed Theory of Change (ToC)

Evaluation findings

1.13 Strategic relevance

49. As presented in the project context, there is a continuing need for timely and credible environmental information and analysis at different scales so that policy and decision makers at all levels can make sound decisions in support of environmental sustainability. The GEO series of assessments are expected to fill that need. The GEO-5 project, specifically, was intended to provide an up-to-date, scientifically credible, global integrated environmental assessment that was considered legitimate by a broad range of environmental decision makers, and that would result in policy relevant options to help inform decision-making at the global and regional level. Relevance to the national level was, however, not direct except for the participation of national governments (discussed in detail in section 4.6.4) and the potential uptake of policy options by governments in national environmental and development policy.

50. GEO-5 was concerned with sustainable development as well as the environment. This is associated with the global scale and multi-thematic and integrated nature of the assessment, its emphasis on policy relevance and the focus on a wide range of internationally agreed environmental goals. While one or more of these characteristics can be found in other GEAs, the approach to GEO-5 embedded all of them into the assessment, potentially improving policy relevance of the assessment for development. This distinguishes the GEO-5 from most other GEAs.

51. Conducting the GEO-5 assessment lay solidly within the mandate of UNEP. UNEP is the voice for the environment within the United Nations system. UNEP acts as a catalyst, advocate, educator and facilitator to promote the wise use and sustainable development of the global environment[37]. The UNEP Medium-term Strategy for 2010-2013 summarized the five areas of UNEP's current mandate and the GEO-5 project was in line with at least two of these areas: a) Keeping the world environmental situation under review; and c) Providing policy advice and early warning information, based upon sound science and assessments[38]. The GEO-5 project also directly responded to a UNEP Governing Council Decision (25/2) requesting UNEP to provide a global assessment of the state of the environment. The project was further presented as a concept under the Environmental Governance Sub-programme's Expected Accomplishments EA (d) Programme Framework for 2010-2011. The GEO-5 process was also designed to follow relevant guidelines articulated in UNEP's Science Strategy, international best practices for conducting Integrated Environmental Assessments, and the Bali Strategic Plan for Technology Support and Capacity-Building.

52. GEO-5 leveraged expertise from divisions across the organization. However, due to financial and human resource constraints, the engagement and collaboration was limited. That said, GEO-5 remained an important flagship project for the organization, recognized and backed by senior management especially in promoting its use.

53. GEO-5 was undertaken in a manner that built on existing or established partnerships with scientists, institutions, governments and individual experts, providing decision-makers with policy-relevant, up-to-date information to enable formulation of rapid responses of priority and emerging issues, as well as the findings of the GEO-4 Self-Assessment Survey report[39].

54. The timing of GEO-5 was also strategic in terms of UNEP's needs – targeted for launch at UNEP's and the UNCSD's 40th and 20th anniversaries respectively. This worked doubly to provide a platform for the recognition and appreciation of global environmental issues while boosting UNEP's profile as a leader, influencer and agenda-setter in the global environment arena. The brand value of GEO, recognized as authoritative in the arena of environmental assessments, contributed to the GEO-5 assessment's importance to global environmental decision-making.

[37] UNEP website - http://www.unep.org/Documents.multilingual/Default.asp?DocumentID=43&ArticleID=3301&l=en
[38] UNEP MTS (2010-2013), paragraph 15
[39] http://www.unep.org/geo/docs/Findings_GEO-4_Self_Assessment_Survey_low.pdf

1.14 Achievement of outputs

55. GEO-5, per direction from GC 25/2[40] and from practice in GEO-4, applies contemporary good knowledge about promoting use and influence of GEAs. Use and influence have been shown to be associated with engagement of decision makers and key stakeholder organizations with domain experts in a social knowledge process leading up to and following the reports. This is the main driver of use and is determined by six key attributes of the knowledge process portrayed in the Theory of Change. These are that decision makers and key stakeholders regard the assessment process and products as 1) credible, 2) legitimate and 3) addressing salient issues and questions, and that 4) the assessment is timely i.e. available when there are openings for use in decisions, and 5) there is sufficient capacity to use and apply the assessment knowledge. In addition, the assessment findings need to be 6) adequately communicated and disseminated. These six attributes result from how the assessment process is undertaken, and are formative in the use of the assessment in global and national and (sub-)regional[41] policies and environmental decisions.

56. The pursuit of these six influential attributes cannot be proscribed or weighted a priori because, for example, each GEA has a unique spectrum of opportunities, constraints, and resources; and operates within organisational cultures and structures with different expectations and priorities. However, there does seem to be an expectation that science inquiry will prioritize standards for credibility over standards for legitimacy, and that questions of interest to the science community will be accorded more weight than questions of interest to decision makers and other key stakeholders (Rowe and Lee, K.N. 2012)[42]. In addition, working with scientists might also make it more difficult to coordinate the timing of the assessment with ripe opportunities for its use as scientists might not give the timeliness attribute as much priority as the credibility attribute. Evaluation of GEAs in general and this evaluation of GEO-5 in particular, need to consider the attributes of a GEA that are held to promote use and influence as a package, and assess the initiative from the perspective of the strategic decisions prioritizing these attributes made during the design and implementation of a GEA.

57. As Clark et al[43] put it: "…how assessments balance the desire to involve the "best" scientists in a politically impartial setting and the desire to involve those who may have less scientific expertise but whose views are trusted, and hence more likely to be accepted, by relevant political and economic actors."

58. GEO-5 occurred at a time where worldwide awareness of environmental issues was likely higher than in the past, and where many important initiatives had already begun; for example the response of the for-profit sector to the sustainability of their supply chains[44]. A GEA that is concerned with use and influence undertaken at a time when major changes in the potential user context are underway should have a different strategic mix of attributes than if it was undertaken at a much earlier and less aware time. For example credibility might be more important for a time that could be described as less aware and the importance of legitimacy and salience might rise during periods with more heightened awareness. For sequential GEAs such as the five GEOs one would therefore expect to see strategies adapting so that the strategic decisions made with GEO-5 reflect awareness and response to opportunities that might not have been available to earlier GEOs. At the same time GEO-5 was undertaken at a time of burgeoning GEAs, by a quick count, approximately

[40] GC Decision 25/2 paragraph 8 - http://www.unep.org/GC/GC25/Docs/GC25-DRAFTDECISION.pdf

[41] (Sub-)regional refers to regional and/or sub-regional – both are above the national level.

[42] Rowe, A and Lee, K.N (2012): Linking Knowledge with Action: an approach to philanthropic funding of science for conservation, Packard Foundation, Los Altos.

[43] Clark, WC, Mitchell, RB & Cash, DW 2006, 'Evaluating the Influence of Global Environmental Assessments', *Global Environmental Assessments: Information and Influence, edited by Ronald B. Mitchell, William C. Clark, David W. Cash, and Nancy M. Dickson*, pp. 1-28.

[44] For example corporations such as WalMart and Mars Corporation are well into corporate initiatives to radically adapt their supply chains to achieve sustainability within relatively short time periods. Many corporations such as Apple and WalMart will rely almost exclusively on renewable energy sources and major investors are joining the Global Divest-Invest initiative divesting their portfolios of non-renewable assets and adding renewable assets (natureVest and eko (2014).

60 GEAs were undertaken during the ten years prior to the commencement of GEO-5 (Mitchell 2006)[45]. This too would seem to argue for increased emphasis on use and influence to promote the specific messages of a particular assessment such as GEO-5 at a time when many GEA reports were being released. These are important elements of context for the strategic decisions made for GEO-5, and the evaluation needs to consider the GEO-5 within this context.

59. The evaluation addresses each of these six key attributes of GEO-5 individually. Generally, the approach is first to establish the vision for the attribute expressed by the GEO-5 team and the UNEP/DEWA regional coordinators and how they expected the attribute to contribute to use and influence – essentially the expected outcome. The evaluation then uses information from surveys and interviews with authors and others to assess the level of achievement of the attribute.

1.14.1 Credibility

Corresponding Project Output in the Project Document: *Output B - GEO-5 Report is scientifically credible*

60. Credibility can be understood as the perception that the assessment appropriately addressed matters of data reliability and is based on appropriate methods, reasoning, and hypotheses. Most members of the GEO-5 team including the UNEP/DEWA regional coordinators agreed with this general interpretation of credibility; some suggested higher priority on using the best science and scientists and emphasising using best evidence, and that interpretation of data should also be a consideration.

61. Scientific credibility was clearly considered an important attribute of the GEO-5 by UNEP member states as evidenced by the GC Decision 25/2 requesting "the Executive Director […] to continue to conduct comprehensive, integrated and scientifically credible global environmental assessments […] in light of the continuing need for up-to-date, scientifically credible, policy-relevant information on environmental change worldwide". Also the participants to the first Global Intergovernmental and Multi-stakeholder Consultation found scientific credibility important enough to mention it several times in their final statement[46]. It reads, for instance: "To ensure scientific credibility, policy relevance, legitimacy of, and effective engagement of stakeholders in the assessment: […] b) For content development, constitute multi-disciplinary groups of lead authors and contributing authors […] based on a detailed chapter outline and expertise criteria utilizing a transparent process drawing on the Intergovernmental Panel for Climate Change (IPCC) nomination process; […] e) Establish a Science and Policy Advisory Board comprising reputable scientific and policy experts to support the process and provide guidance to chapter authors to ensure that the process is scientifically credible; […] g) Draw on a wide range of publicly available scientific assessments and peer reviewed reports and authoritative data and information including from Governments; and h) Subject the assessment to an extensive scientific expert peer-review and governmental review."

62. The GEO-5 team suggested a strong and positive relationship between credibility and use of an assessment such as GEO-5. Comments recorded by the evaluation[47] included:

- *If the assessment is considered credible - because of the data used, the experts involved, (and) the rigorous process followed - findings will be more easily accepted and widely used.*

[45] The list was adopted and revised from Mitchell, R. B. (2006). Global environmental assessments: information and influence, MIT Press. Pg. 5, Figure 1.1. The GEO-5 *Keeping Track* document illustrates changes since the first Rio conference in 1992: Keeping Track p. vi.

[46] Statement on the objectives, scope and process of the fifth Global Environmental Outlook by the Global Intergovernmental and Multi-stakeholder Consultation (31 March 2010)

[47] Survey of GEO-5 team and the UNEP/DEWA regional coordinators. For open ended questions from this and other surveys all responses from respondents are reported in their entirety. Thus the seven quotes cited here represent all responses to question 7 "How would achieving a high level of credibility according to the description above (or as modified by you) be expected to contribute to use of an environmental assessment such as GEO-5?"

- *If users believe assessment findings are scientifically sound, there is more chance that they will take mitigation action and be able to defend those actions to others who do not agree, or are negatively impacted.*
- *A high level of credibility in global assessment processes is crucial for building confidence among users/ stakeholders in the results of the assessment and is more likely to translate into a process and product that is perceived as authoritative.*
- *Even if an assessment captures the attention of relevant audiences, its influence and thus its use will depend on whether audiences consider the knowledge assembled to be valid.*
- *Higher credibility engenders better trust in the resulting outcomes, making the report findings more acceptable to/by a larger audience of users and stakeholders…likely to catalyse more action than unnecessary debate.*
- *A publication becomes reliable providing sound, dependable information.*
- *Governments in particular need a solid credible evidence base from which to make often difficult policy choices and therefore require credible information on the environment, this is also true (of) a variety of other stakeholders but most notable with governments*

63. Principles to ensure scientific credibility of the assessment as set out in the Guidelines for ensuring Scientific Credibility and Policy Relevance of the GEO-5 Assessment[48] included:

- Use an open and transparent approach, which will be multi-scaled and multidisciplinary, building on previous and ongoing assessment work to avoid duplication;
- The Secretariat, through the Science and Policy Advisory Board (SPAB) will provide scientific quality assurance and guidelines to authors for the preparation of the GEO-5 assessments;
- The SPAB will make the final determination on any science related contentious issue as raised by CLAs, the Secretariat or expert reviewers;
- Make GEO-5 data and information available in the public domain to the extent possible using exiting communication conduits (i.e., website, GEO data portal, GEO-wiki etc.) as well as anticipated future tools (i.e., UNEP-Live);
- Engage the best available scientific and policy expertise, taking into account disciplinary, geographic and gender balance through a merit-based and transparent nomination and selection process;
- Engage a wide range of global and regional partners, to include an appropriate balance of developed and developing country participants, in the assessment as authors, experts, peer-reviewers and advisors. Partners should include governments/ministries, United Nations bodies and other international organizations, scientific institutions, regional collaborating centres, NGOs and indigenous peoples networks as appropriate, and the private sector.

64. Two reviews by the independent SPAB confirmed the appropriateness of these procedures and their implementation in GEO-5[49/50]. GEO-5 clearly took the steps required to achieve a credible assessment.

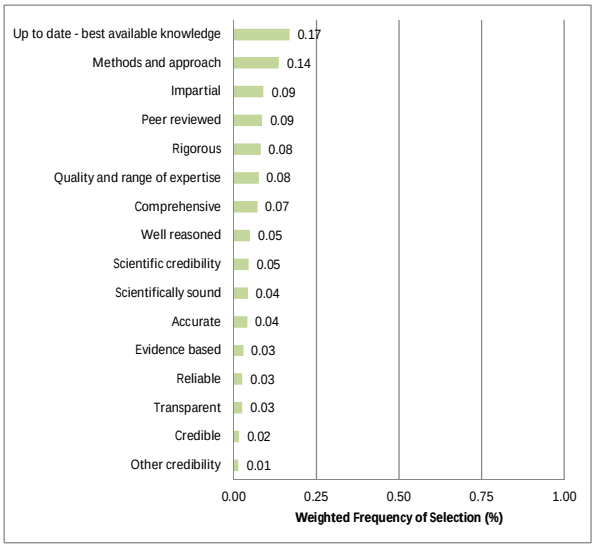
65. Two elements of the process to achieve strong scientific credibility were less successfully implemented. The Data and Indicators Working Group which was expected to update and maintain global and regional data portals, provide support on data collection and verification throughout the assessment process, ensure strict application of quality controls for data and information, and develop specific indicators and scenario analysis to support components of GEO-5, met only once in

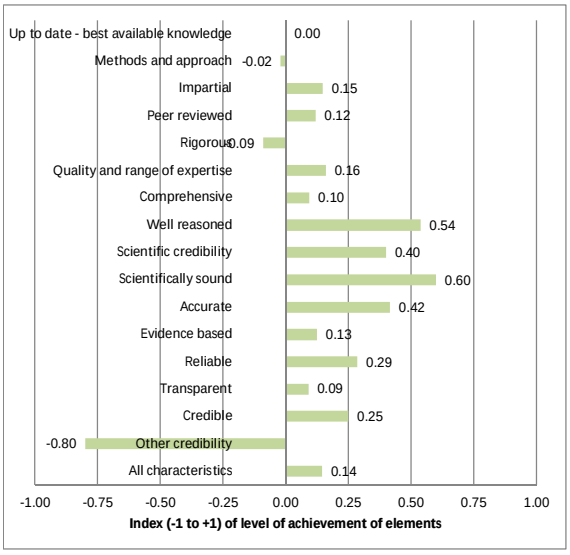
[48] http://www.unep.org/geo/pdfs/geo5/Guidelines_for_science_&_policy_GEO-5.pdf
[49] UNEP 2011, *Final Evaluation of the GEO-5 Assessment – summary of Recommendations to the GEO-5 Team by the Science and Policy Advisory Board, 23-25 November 2011*, United Nations Environment Programme, Nairobi.
[50] UNEP 2011, *Report of the Mid-term Evaluation of the GEO-5 Assessment by the Science and Policy Advisory Board, 13-14 April 2011*, United Nations Environment Programme, Nairobi.

Copenhagen and was, thereafter, hardly functional due to a lack of UNEP leadership. Because the group was set up late in the process – only a few months before the zero draft chapters were due – and data support needs of chapter authors were limited, the group was also quite redundant. The Environmental Data Explorer[51] (referred to as the GEO Data Portal in the Project Document) hosted by the GRID Centre in Geneva was not maintained or updated as expected and hardly used by chapter authors, most of whom knew how to access the original sources of the data compiled in the portal or more up-to-date sources accessible elsewhere. Regional Data Portals were not developed.

66. Authors and reviewers were asked by the evaluation to identify three distinguishing characteristics of a credible GEA[52]. Their responses were coded and then weighted[53] and grouped into the elements in the ToC. About 60 percent of the characteristics suggested by authors and reviewers were associated with the concept of credibility as articulated in the ToC and earlier in this section. It is of interest that the remaining characteristics were mostly associated with salience and legitimacy, and a smaller proportion even with communication. This suggests that authors and reviewers thought that the credibility of GEO-5 was also contingent on attributes outside the usual concept of credibility.

67. The characteristics nominated by authors and reviewers that are associated directly with the concept of credibility as used in this evaluation are described in Figure 2 (thus, characteristics not directly associated with credibility have not been included in this figure). Respondents were also asked to assess the level of achievement of each of the three characteristics that they suggested. Their ranking was converted to an index where 1 represents greatly exceeded, 0 represents met and -1 represents fell significantly short. The results are presented in Figure 3. It is interesting that authors and reviewers judged performance of GEO-5 on the two most frequently mentioned characteristics as meeting their standard, which was slightly lower than the overall judgment on all credibility characteristics combined. In addition, authors who suggested characteristics associated with salience judged the level of achievement on these as falling short (index value of -0.47); those suggesting characteristics associated with legitimacy felt performance standards were met (not presented in Figure 3 which only considers credibility elements). Salience and legitimacy are two central elements in the ToC and are discussed below.





[51] http://ede.grid.unep.ch/

[52] Author survey Q18: *"What, to you, are the top three distinguishing characteristics of a credible global environmental assessment?"* with 199 responses for the first characteristic, 199 for the second and 187 responses for the third characteristic from a total 242 respondents to the survey.

[53] Responses were weighted three for the first characteristic suggested, two for the second and 1 for the third characteristic. The weighted responses for each coded category were then summed to a weighted frequency that is presented in Figure 2.

Figure 2: Characteristics of a credible GEA[54]

Figure 3: Level of achievement of credibility characteristics by GEO-5[55]

68. There was only modest variation across chapters of the GEO-5 main report in terms of how well the Chapter to which an author contributed met the author's own standards, with three chapters within striking distance of exceeding the authors' standards for credibility (Chapter 4 Water was rated at 0.46, Chapter 1 Drivers at 0.33 and Chapter 13 North America at 0.25). The remaining Chapters clustered between a 0.18 and minus 0.17 rating (met the authors' standard), except for Chapter 7 Earth System that was rated minus 0.75 (between fell somewhat and fell significantly short).

69. Reviewers, when asked to compare the quality[56] of the GEO-5 Chapter they reviewed to a comparable assessment, scored GEO-5 positively, an average of 7.1 on a scale of 0 to 10 where 10 was very high[57]. This positive assessment was general across the chapters, 12 of 17 chapters were rated within a narrow band around the mean; two regional chapters (Europe and the Regional Summary) were rated very positively by reviewers, and two further chapters moderately positively (Asia and the Pacific and Biodiversity), while only one chapter was rated moderately negatively (Drivers)[58]. Reviewers also rated the value added of GEO-5 positively (7.5) compared to the other GEA they identified.

70. The perception of credibility by end-users and broadcasters of the assessment is arguably even more important than the perception of credibility by the SPAB, authors and reviewers. CPR members during the group discussion and respondents to the national survey were generally satisfied with the scientific credibility of the GEO-5. Also, the fact that governments have endorsed the SPM without any substantive reservations on the assessment findings presented in the main report may also be considered a good indicator for their trust in the scientific rigor of the GEO-5. The first Global Intergovernmental and Multi-stakeholder consultation in part delegated scientific credibility assurance to the SPAB comprised of independent, internationally recognised scientific and policy experts. GEO-5 stakeholders would be more likely to perceive the GEO-5 as scientifically credible, if the SPAB guidelines were followed and the SPAB reviews said that the report was credible. This was indeed the case. The evaluation did not come across any articles in the media putting in doubt the scientific credibility of the GEO-5.

71. In summary, GEO-5 developed and applied procedures to ensure a credible global assessment and end-users, broadcasters, the SPAB, authors and reviewers all judged that, overall, their credibility standards were met. Credibility understood as using appropriate sources and methods and exploring alternative explanations was a primary focus of GEO-5. Procedures to foster credibility were developed and implemented by the Chapters with oversight provided by the Chapter Coordinators and reviewed twice by the SPAB whose reviews were both positive and sources of advice to GEO-5. GEO-5 contributors had the capacity to undertake the assessment and authors and reviewers were very positive about the credibility of the Chapters they contributed to.

Evaluation rating – Highly Satisfactory

[54] Coded from author and reviewer survey Q18: *"What, to you, are the top three distinguishing characteristics of a credible global environmental assessment?"*

[55] Coded from author and reviewer survey Q19: *"How did your Chapter fare against these characteristics?"*

[56] Reviewers assessed 'quality' whereas authors and reviewers elsewhere assessed 'credibility'. We note that 'quality' could include additional attributes such as clarity, comprehensiveness, language, presentation etc.

[57] Q27 asked only of Reviewers of whom 82 responded to the survey. Question 27 asked "Please rate your level of agreement with the following statements comparing GEO-5 to the other assessment you identified in the previous question". 44 reviewers identified a comparable GEA they were involved with and so provided the ratings, 38 were unable to do so and so were not asked Q27.

[58] Strongly positive >1 standard deviation above the mean, moderately positive or negative >< half standard deviation from the mean.

1.14.2 Legitimacy

Corresponding Project Output in the Project Document: Output A - GEO-5 is a legitimate process that involves a diverse range of stakeholders and partners in the design and conduct of the assessment.

72. The UNEP Governing Council, in requesting a fifth GEO, specified that the assessment should inform the strategic directions of UNEP, prioritise capacity building for developing countries and engage all relevant stakeholders to strengthen the credibility, policy relevance and legitimacy of the assessment[59]. The primary objective of GEO-5, as stated in the approved GEO-5 Project Document, was indeed "to conduct a global integrated environmental assessment that is legitimate, scientifically credible and results in policy relevant options that help inform decision-making at multiple scales." This was a broad sweep that would challenge any assessment[60], inevitably requiring strategic decisions on priorities. And it was in line with global practice, contemporary knowledge and literature on global integrated environmental assessments[61].

73. Legitimacy can be understood as perceptions of fairness and inclusiveness of the assessment. The premise (supported by the research literature) is that perceptions of fairness contribute to a sense of ownership and improve prospects that the assessment will be used. The concept of legitimacy can be quite broad and can vary considerably by setting but the general sense is assessments will be considered more fair when potential users see representatives of their interests (e.g. business/industry or local government) or that people like them (e.g. gender, from Africa or their country) were part of the assessment team. Thus GEAs seek to include in the assessment process those who are representative of key stakeholders and decision makers. The term "diverse" as used in the project output regarding legitimacy of the process (Output A) is therefore understood by the evaluation as "representative of the targeted users of the assessment". A majority of members of the GEO-5 team and UNEP/DEWA regional coordinators agreed with this general interpretation of legitimacy; some of the regional coordinators enhanced the statement with emphasis on including governments, framing the product as an "honest and trusted assessment", and emphasising that decision makers and stakeholders should be engaged from the start. While some stated that use was more strongly influenced by the credibility of the assessment, the majority of the GEO-5 team and regional coordinators expressed views that participation in the assessment process from the outset would increase buy-in and ownership because the assessment should be more responsive to the needs and concerns of potential users. As a result, stakeholders would "pay more attention to the results" and "the findings and key messages of the assessment would be more likely to be accepted or viewed as both reasonable (based on a fair and principled process) and championed by the user group". Legitimacy was also seen as inclusion of different disciplines and potentially encouraging contributions to the assessment itself.

74. Two additional, important factors influence legitimacy: choices about contents and about information sources. Both factors also affect credibility and salience. The assessment contents has breadth and depth limitations imposed both by the resources and time available for conducting the assessment, the focus on specific global venues for launching the report and the absorption capacity of the target audience (how much information is the audience capable and willing to read and digest?). Choices need to be made about what information to leave in and what information to leave out and these choices have consequences for legitimacy. Information sources used will also influence how legitimacy of the assessment is perceived by different stakeholder groups. Scientists might consider scientifically peer reviewed and published material as the only legitimate source of

[59] Governing Council of UNEP (2009). Decisions adopted by the Governing Council/Global Ministerial Environment Forum at its twenty-fifth session. Twenty-fifth session of the Governing Council/Global Ministerial Environment Forum, Nairobi, Kenya, UNEP. GC Decision 25/2 paragraph 13: http://www.unep.org/GC/GC25/Docs/GC25-DRAFTDECISION.pdf

[60] Walter V. Reid, Fikret Berkes, Thomas Wilbanks, Doris Capistrano (ed.) 2005 : Bridging Scales and Knowledge Systems - Concepts and Applications in Ecosystem Assessment, Island Press

[61] Clark, W. C., R. B. Mitchell, et al. (2006). "Evaluating the Influence of Global Environmental Assessments." GlobalEnvironmentalAssessments: Information and Influence, edited by Ronald B. Mitchell, William C. Clark, David W. Cash, and Nancy M. Dickson: 1-28.

information (in a way, legitimacy equals credibility in their view), while politicians might consider grey data and literature such as monitoring data from the Fisheries Department or findings from environmental programme evaluations fully legitimate. Recognition of the great value of traditional knowledge is also on the rise, in particular among civil society organisations but also increasingly within governments and the science community.

75. The evaluation considers that legitimacy is first and foremost about promoting ownership and, through that, use of the assessment. Diversity of GEO-5 participants is needed to ensure that all groups, including the often marginalized, feel that they were involved, their voice was heard, and 'own' the assessment. These groups include *inter alia* non-environmental scientists, governments and civil society of developing countries, women and youth, and diverse other interests such as the for-profit sector and local authorities that are rarely consulted on high-level environmental decision making. Legitimacy is less about collecting diverse views to get an information-rich assessment, but rather about creating ownership among groups that are often excluded.

76. In sum, legitimacy has several dimensions including legitimacy of the report contents and sources, legitimacy of the convening organization (UNEP for GEO-5), and legitimacy of the process and selection of participants. The latter has, in turn, several dimensions including national origins, gender and interests represented (e.g. NGO, business, national government).

1.14.2.1Legitimacy of the report contents and sources

77. The GEO-5 assessment focused on measuring progress towards - and gaps in - achieving global environmental goals (GEGs).[62] The choice to focus the contents of the GEO-5 assessment around globally agreed environmental goals reflected the priority of GEO-5 to achieve use and influence in global decisions. It likely contributed to legitimacy in the eyes of governments, because those goals were twice negotiated/agreed between countries: first at the time they became an internationally agreed goal (e.g. as a Conference of the Parties decision of a Multilateral Environmental Agreement) and second when governments selected the goals for the GEO-5 assessment to specifically consider. Ninety goals were selected by the High-level Intergovernmental Advisory Panel to be considered in the thematic chapters of the report, and a sub-set of goals to be considered in the regional chapters were agreed upon during the regional multi-stakeholder consultations, based on priority thematic areas for each region[63]. Other stakeholders and regional groups were also consulted during the selection of the goals to be covered by the GEO-5. The big drawback might have been reduced salience for developing nations – from what is in effect a top down approach. Another drawback was that the assessment became less comprehensive and may have been perceived as more 'politicized' - leading to reduced scientific credibility and value as a comprehensive reference on the current state of the global environment.

78. Sources for GEO-5 contents also influence legitimacy. The evaluation looked at whether an appropriate balance was struck between peer reviewed data and literature, grey literature and traditional knowledge to ensure that the assessment was considered legitimate by its intended users. Like most GEAs, GEO-5 procedures directed authors towards peer reviewed literature and data. While grey literature was permitted there were quite restrictive guidelines provided on its use[64]. The SPAB further highlighted these issues in the mid-term review it undertook[65].The guidelines were prepared specifically to ensure that the use of grey literature did not compromise the scientific,

[62] UNEP started an initiative to compile GEGs in 2008 involving independent experts, governments and the seven global Multilateral Environmental Agreement Secretariats. GEGs in the compilation are drawn from international treaties, conventions, protocols, outcomes of UN summits and conferences in the field of environment, decisions or recommendations of UN bodies and agencies, and the Commission of Sustainable Development. See: http://geg.informea.org/about

[63] See background document for GEO-5 Regional Consultations: http://www.unep.org/geo/pdfs/Background_document.pdf. The list of selected goals for each thematic area of the report is presented in Annex IV of the same document.

[64] UNEP 2010, 'Guidelines for ensuring Scientific Credibility and Policy Relevance of the GEO-5 Assessment', viewed 04/09/2014

[65] UNEP 2011, *Report of the Mid-term Evaluation of the GEO-5 Assessment by the Science and Policy Advisory Board, 13-14 April 2011*, United Nations Environment Programme, Nairobi. While titled as an evaluation the SPAB undertook reviews focusing on the credibility standards, assessing fidelity to these standards and provided advice on how to address difficult issues.

technical or socio-economic integrity of the GEO-5 content from a science perspective[66]. Traditional knowledge was largely excluded from the State and Trends but was used more in the Policy Options section. Excluding grey literature and traditional knowledge can negatively affect legitimacy because it excludes scales and issues not well covered in peer reviewed literature, but for which there is data and knowledge which the credibility standards do not admit to the assessment. This can reduce the legitimacy of the assessment in the eyes of developing countries or those concerned with the differential impact of the environment on women since the net effect is that the country or issue is likely not addressed. GEO-5 recognised this by stating that "Sex-disaggregated data on issues relating to the environment are generally lacking, especially for developing countries, making it difficult to analyse and understand disparities in natural resource use and management structures."[67] In the view of the evaluation, the relative weight of grey information sources and traditional knowledge in the balance should increase as the assessment becomes more targeted at informing national and sector-specific decisions. In other words, while global scales and broad spectrum assessments targeted at global decision making venues and bodies could rely more on peer reviewed data and analysis and be considered adequately (but not fully) legitimate, more localised and sector-specific assessments for which use at national/(sub-)regional levels is important would need to welcome greater contributions from grey literature and traditional knowledge to uphold their legitimacy in the eyes of the relevant stakeholders. For the global purpose of GEO-5, its contents and sources could therefore to a large extent uphold legitimacy, but this was much less the case at smaller scales and for a more varied group of interests within UNEP's major groups and for UNEP Collaborating Centres (see Table 3 above). One respondent to the author and reviewer survey suggested "Governments should be encouraged to have a desk officer to coordinate and validate any national information that may come from grey sources to ensure factual correctness in the global assessments; this is over and above the normal data validation that is already in place."

1.14.2.2UNEP as legitimate convening organisation

79. The preamble to GC 25/2 recognizes that UNEP "bears the sole responsibility within the United Nations system for keeping under review the world environmental situation […] and that the Global Environmental Outlook is currently the only integrated and cross-cutting global assessment of environmental change".[68] In the Rio+20 outcome document "The Future We Want" paragraph 88, Heads of State and Government and high level representatives invite the UN General Assembly to adopt a Resolution strengthening and upgrading UNEP *inter alia* to: "(d) promote a strong science-policy interface, building on existing international instruments, assessments, panels and information networks, including the GEO, as one of the processes aimed at bringing together information and assessment to support informed decision-making; […] and (e) disseminate and share evidence-based environmental information and raise public awareness on critical as well as emerging environmental issues." These, among other official decisions and declarations, indicate that governments generally consider UNEP as a legitimate convening organization for environmental assessments such as the GEO.

80. GEO-5 authors and reviewers, too, regard UNEP as an appropriate convener for a global environmental assessment, and a rather more appropriate convener to influence global than national/(sub-)regional policies and environmental decisions scoring on average 2.7 and 2.1 respectively on a three point scale representing very appropriate for global uses and appropriate for national/(sub-) regional uses[69]. Differences in author and reviewer ranking of appropriateness of UNEP as convener for global or national/(sub-)regional settings do not appear to be associated with

[66] Guidelines on use of grey literature can be found at: http://www.unep.org/geo/pdfs/geo5/ANNEX12_GEO-5_Guidelines_Scientific_Credibility-Policy_Relevance.pdf

[67] GEO-5 main report p.224. See also comments by national survey respondents (paragraph 151) and discussion of data issues with scale and gender from Millennium Ecosystem Assessment (paragraph 161).

[68] GC Decision 25/2 pg.7

[69] Q8 (225 responses): "Is UNEP an appropriate convener for a global environmental assessment that aims at influencing policies and decisions at different levels?" Q9: "Is there another organization that would be an appropriate convener for a global environmental outlook?" Q10: "Do you have any comments on the suitability of UNEP as a convener of a global environmental assessment?"

the Human Development Index (HDI)[70] which ranks the level of development of the country of citizenship of the authors.

1.14.2.3Legitimacy of GEO-5 process

81. It is important to have a reasonably clear vision of who constitutes appropriate decision makers and key stakeholders because their engagement is central to legitimacy and salience. The primary objective of GEO-5 was to conduct a global integrated environmental assessment that would help inform decision-making at multiple scales (herein referred to global and national/(sub-)regional scales). The Statement on the objectives, scope and process of the fifth Global Environmental Outlook by the Global Intergovernmental and Multi-stakeholder Consultation directed GEO-5 to: "20. Engage the best available scientific and policy expertise, taking into account disciplinary, geographic and gender balance […]" and further "21a. Engage a wide range of global and regional partners, to include an appropriate balance of developed and developing country participants, in the assessment as authors, experts, peer-reviewers and advisors. Partners should include governments/ministries, United Nations bodies and other international organizations, scientific institutions, regional collaborating centres, NGOs and indigenous peoples networks as appropriate, and the private sector." That is, GEO-5 was directed to ensure appropriate disciplinary, geographic and gender balances for contributors as well as achieving a balance of interests in partners to the assessment.

82. The selection process for experts is summarized in Figure 4 below. Experts were nominated by governments and other stakeholders to conduct the assessment and review process. These experts were then evaluated by the GEO Secretariat for final selection based on their skills, regional balance and gender. Coordinating Lead Authors (CLAs), once selected, were asked to search for and suggest additional authors where there were gaps in expertise. They were also responsible for final selection of the authors of their chapter. The UNEP Chapter Coordinators interviewed for the evaluation estimated that about half the authors of GEO-5 emerged from country and other stakeholder nominations, and about half were identified directly by UNEP. The proportion of nominated authors was much lower for some chapters (e.g. Chemicals and Waste) than for others.

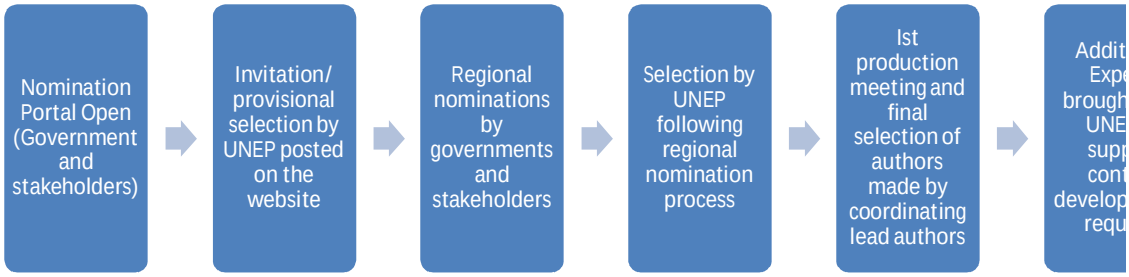


Figure 4. GEO author nomination and selection process[71]

83. Members of the various advisory and consultative groups constituted for the GEO-5 were identified through several mechanisms. The High Level Intergovernmental Advisory Panel (HLIGP) was comprised of persons nominated through the nominations portal. It was comprised of twenty senior officials of environment-related government agencies. The Science and Policy Advisory Board (SPAB) was constituted by the UNEP Chief Scientist's office and the GEO-5 production team from a list of government-nominees[72] and consisted of 19 highly respected members of the scientific and policy community. The Data and Indicators Working Group was set up by the Head of the Integrated Environmental Assessment Section in DEWA and was expected to work in conjunction with the GEO-5 team to provide data and information support throughout the process.

[70] http://hdr.undp.org/en/content/human-development-index-hdi
[71] http://www.unep.org/geo/pdfs/GEO5 Expert selection process.pdf
[72] http://www.unep.org/geo/pdfs/geo5/ToR_Science_and_Policy_Advisory_Board.pdf

The Group was comprised of 18 experts affiliated to government agencies, research and academic institutions – most were drawn from nominations – and UNEP/DEWA staff, but was hardly functional. The GEO-5 Policy Experts Group, which prepared the guidelines for policy appraisal for Part 2 of GEO-5: Policy Options in collaboration with the Coordinating Lead Authors of the regional chapters, was comprised of two UNEP staff and six experts from research and academic institutions. In the opinion of the GEO-5 team, only two or three authors could really be considered policy experts. Two-thirds of the coordinating lead and lead authors for the policy chapters responded "yes" to the question "were there gaps in the capacity of contributors to the policy sections that affected the quality of the report?". Peer reviewers were drawn from government nominations, expert networks and research and academic institutions reviewers.

1.14.2.4Geographic balance

84. GEO-5 was in effect directed to engage a geographically representative range of perspectives and knowledge in producing the assessment. The evaluation assigned the value of the UN Human Development Index (HDI) corresponding to the nationality of each participant to rank national levels of development for each participant's country of origin. For comparison the evaluation also looked at the author groups for the IPCC Fifth Assessment Report (AR5)[73] and the Millennium Ecosystem Assessment[74], also assigning contributors to these assessments a HDI index score based on reported nationality. With a median HDI Index of 26 (similar to the 2012 HDI for Luxembourg) GEO-5 compares favourably to the IPCC AR5 (median HDI Index of 15 similar to Denmark) and the Millennium Ecosystem Assessment (median HDI Index of 17 similar to Belgium). The median score for the HDI index of all 187 rated countries is 94 meaning that all three GEAs whose median scores lie between 15 and 25 are solidly on the developed side of the world. While the three GEAs are all in the group classed as having high levels of human development, GEO-5 was clearly more inclusive geographically relative to peer GEAs, and might represent a standard that is 'as good as it gets' for assessments that strongly prioritise credibility. There is likely an upper bound to which a GEA can extend given the national distribution of science and related capacities, the resources of a GEA, and the credibility standards, and from the limited comparison made by the evaluation GEO-5 is the best of the three.

[73] The IPCC AR5 was released in four parts between September 2013 and November 2014. Source for contributor data: http://www.ipcc.ch/pdf/ar5/ar5_authors_review_editors_updated.pdf

[74] The Millennium Ecosystem Assessment was conducted from 2001 2005. Source for contributor data: http://www.millenniumassessment.org/en/Authors.ByChapter.html

85. The constraints on the inclusiveness of GEAs are reflected in the nationalities of GEO-5 Chapter authors in Figure 5. There is a clear connection between the scientific challenge of the chapter content and the level of inclusiveness. The regional chapters are most inclusive with chapters ranking in the medium and low levels of the HDI, the more technical chapters drew authors from nations with very high levels of HDI, and the applied chapters from high levels of HDI. To illustrate, the equivalent countries with the same HDI for the Africa chapter is somewhere between Namibia and Ghana, for Chemicals and Waste Luxembourg and for the Review of Data Needs Switzerland. The implication could be interpreted as reflecting a trade-off between the credibility standards and the ability to be more inclusive, given plausible budgets.

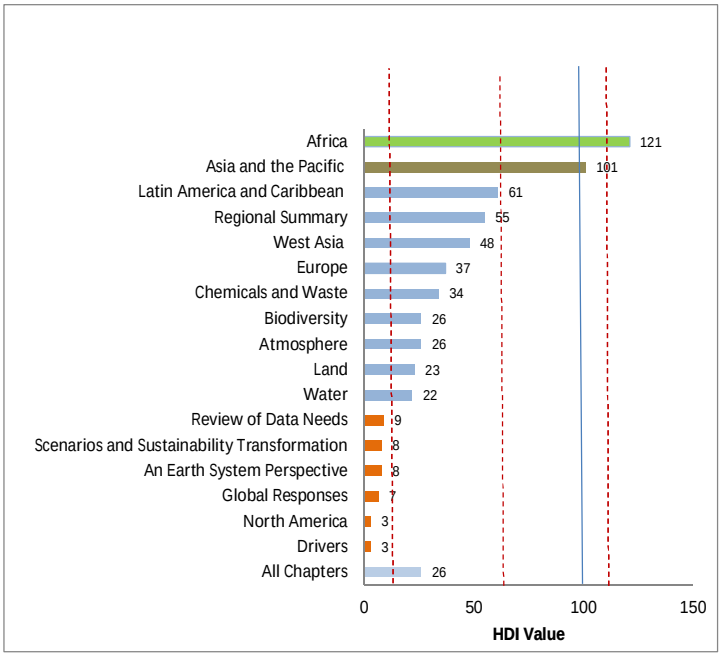


Figure 5. HDI ranking by average of chapter author distribution

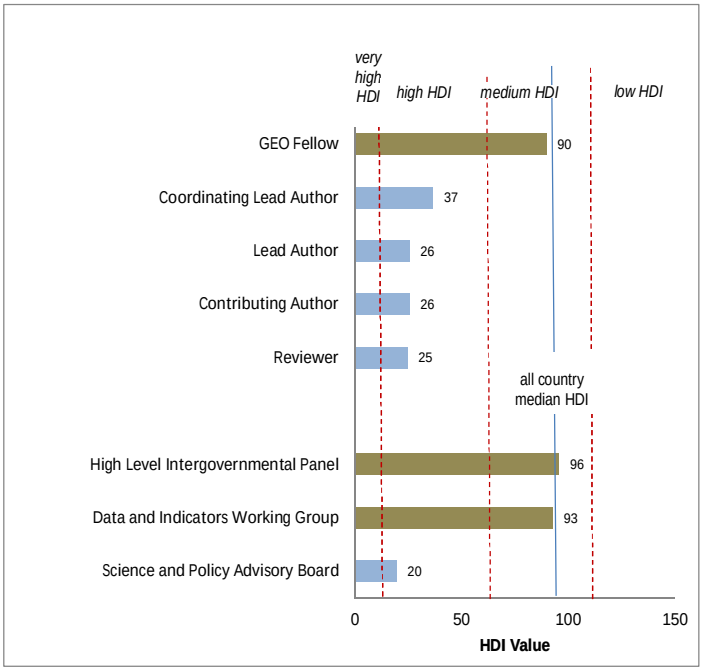


Figure 6. HDI ranking by average of working group participants

86. As can be seen in Figure 6,
HDI values for the various advisory and consultative groups constituted for the GEO-5 to contribute to the design, management, production and use of the assessment reflect the pattern that the more technical undertakings (such as the Science and Policy Advisory Board and authors) were less representative than broader advisory undertakings (High Level Intergovernmental Advisory Panel). The Data and Indicators Working Group with an average HDI of 93 appears to be an exception to this suggestion, since its functions were more technical. The group was largely drawn from nominations but hardly functioned and became quite redundant. For the GEO-5 Fellows, not an advisory or consultative group in the strict sense, there was considerable latitude in their selection. Fellows were chosen, on the one hand, for their capacity to contribute but also, on the other, for the likelihood that they would benefit significantly from their association with GEO-5. A relatively higher proportion of Fellows compared to GEO-5 author teams and most advisory/consultative groups were picked from developing countries and women.

87. Global decision makers were a primary target for GEO-5. It appears plausible that while there were serious limitations on achieving a representative mix of national participants in GEO-5 as a whole, the key GEO-5 node for global legitimacy (and salience) was the High Level Intergovernmental Advisory Panel and this was a truly representative group. This could be interpreted as a strategic success for GEO-5 in an area with the highest priority.[75]

1.14.2.5Gender

88. Gender is considered from two aspects; first the extent to which GEO-5 considered gender in the assessment, and secondly the extent to which women were involved in the assessment addressing goals to improve participation of women in Science, Technology, Engineering and Medical fields (STEM).

Gender, environment and development in GEO-5

89. Especially in developing countries and economies in transition, changes in the environment affect men and women differently due to the differentiated roles and responsibilities allocated to either gender. Women and girls are commonly in charge of growing food, fetching water and fuel, and are the primary care givers[76]. As a result, women rely on and are affected by the environment around them and are therefore the most susceptible to changes in the environment such as degradation, deforestation, drought, floods and other natural disasters, disproportionately impacting on the physical, economic, social, and cultural aspects of their lives. This is further perpetuated by poverty and inequalities that exist in most societies where women's voices are seldom heard. Despite the fact that women make up almost half of the world's population, they are often underrepresented in decision-making at the family, community and national levels. It is therefore important to better identify the gender effects of the environment and empower women to actively take part in decision making for success in environmental policy and management. Women can be engaged as a driving force for sustainable development and management of resources.

90. Conceptually, participation of women in GEA processes contributes to legitimacy as well as salience (raising questions and providing solutions that are relevant to women and development). There are a total of 93 references to women, gender, female or girls in the index of the main GEO-5 report. They fall into three broad categories: substantive discussion of gender, environment and development; substantive discussion of women and development; and generic comments on differential impacts of environment or development by gender.

91. GEO-5 side products make varied references to differences in vulnerability and opportunity between genders. The most important of these products, the Summary for Policy Makers, did not contain any discussion or comments on gender, nor did the GEO-5 for Business document. The

[75] High Level Intergovernmental Panel ToRs http://www.unep.org/geo/pdfs/geo5/GEO-5-HL-IGAP_ToR.pdf and a report on the HLIGP first meeting: http://www.unep.org/GEO/pdfs/geo5/GEO-5_SPM-HL-IGAP_Meeting.pdf
[76] UNDP 2011, 'Fast Facts: Gender and Environment', viewed 04/09/2014, <http://www.undp.org/content/undp/en/home/librarypage/results/fast_facts/ff-gender-environment.html>.

evaluation takes the absence of gender effects as an important omission in the SPM. GEO-5 for Youth and the Measuring Progress documents each referred to the health impacts of indoor air pollution on women three times and GEO-5 for Local Government contained five references to female land ownership and its effect on income. The Keeping Track document had the most references, referring to the MDGs and equal opportunities for women and gender and leadership a total of eleven times.

92. GEO-5 did not seriously address gender differences in the main document, in the very important Summary for Policy Makers, or in the other side products. The emphasis on credibility operationalized through the emphasis on peer reviewed literature and data was a barrier to incorporating gender issues into the assessment: "…the availability of data related to the environment and natural resources that are disaggregated by gender (i.e., qualitatively) or sex (i.e., quantitatively) is generally poor, especially for developing countries".[77] The evaluation interprets this as GEO-5 prioritizing the credibility procedures adopted for the assessment over addressing a universally recognized, cross-cutting issue that is a top priority for the UN.

Participation of women in GEO-5

93. An appropriate gender balance of GEO-5 participants could indicate an effort to address gender differences in science, technology, engineering and maths (STEM) fields. Women are under-represented in STEM fields and there is a global effort to improve representation of women in STEM fields[78/79]. Authors and reviewers list the following as the main benefits from participating in a GEO: learning about assessment methods; contributing to something important; gaining new and more comprehensive perspectives; learning about new ideas, issues and regions; stimulating and stretching one's thinking; and enhancing one's professional status[80]. It is beyond the scope of this evaluation to track impact on careers of contributors let alone assess gender differentiated career impact, but the benefits from participating in GEO-5 described in the previous sentence are likely to have positive effects on their careers. A strong level of female participation in GEO-5 would therefore likely contribute to efforts to improve the gender balance in STEM fields.

94. About 40 percent of GEO-5 authors and reviewers were women, highest representation was the GEO-5 Fellows (64 percent), lead authors were at the low end at 34 percent. There is little difference between the HDI values for men and women overall and Chapters where female authors had higher HDI values than males were about equal in number to Chapters where the male HDI values were higher.

95. Without gender data on comparable GEAs the evaluation cannot compare the performance of GEO-5. However, the level of women participation suggests potential progress on STEM issues.

96. Together, the two gender aspects considered by the evaluation suggest that while the favourable gender balance in GEO-5 contributors could be considered a step forward on STEM issues, it did not foster consideration of gender differences in the assessment. This would appear to be a notable shortcoming for a UN assessment with emphasis on policy relevance. Future GEOs will need to address the tension between procedures to ensure credibility and improving their performance on gender and the environment ("Gender equality is now a cross-cutting priority in all UNEP activities, and the organization is systematically integrating gender perspectives into all its programme design and implementation, along with measurable goals and indicators.")[81].

1.14.2.6Interests

97. A third proxy akin to the GC direction of "all relevant stakeholders" is provided by the interests represented by GEO-5 partners where an interest such as national government,

[77] UNEP (2011). Keeping Track of Our Changing Environment: From Rio to Rio+20 (1992-2012)
[78] Hill, C, Corbett, C & St Rose, A 2010, *Why So Few? Women in Science, Technology, Engineering, and Mathematics*, ERIC.
[79] Cronin, C 1999, 'Theorizing progress: Women in science, engineering, and technology in higher education'.
[80] Q64 *"What aspects of participating in a GEO would lead you to recommend to a close colleague that they also do so?"* 156 responses.
[81] UNEP Website: About Gender and environment - http://unep.org/gender/data/AboutUs/tabid/54765/Default.aspx downloaded 9/19/14

environmental or development NGO or business/industry is taken to reflect differences in worldviews, knowledge, priorities and values. Presumably one would stretch "all relevant stakeholders" to include all interests who can affect use of GEO-5 for policy and other environmental decisions at the various scales. This is likely an infeasible reach for a GEO, but it should certainly include all interests who can affect use at the priority global scales. Contributors to GEO-5 were associated with universities and research centres, multilateral organisations and national governments with the first two more likely to provide authors, the latter two reviewers and as members of the advisory group[82]. Contributors to GEO-5 were dawn largely from the interest defined by UNEP as the *Scientific and Technical Community*, one of nine major groups and stakeholders defined by UNEP. The other UNEP-defined interests are Business and Industry, Children and Youth, Farmers, Indigenous Peoples and Their Communities, Local Authorities, Women, NGOs, Workers and Trade Unions[83]. In addition to engaging the Scientific and Technical Community directly in GEO-5 processes three other interests were the focus of special GEO-5 publications; Business and Industry, Local Authorities and Youth.

98. It is appropriate that a GEA engages scientific and technical communities in its work. However, the guidance from the literature and reflected in the approach of GEO-5 is that this needs to be balanced with representation from potential decision makers and key stakeholders. For GEO-5 with use at a global level as the priority this meant involving participants who came from multilateral organisations and national governments and who could be considered representatives of these priority decision making venues and bodies.

99. Additionally authors and reviewers envisioned GEO-5 to be targeting other use venues such as at national/(sub-)regional scales, but these interests were only marginally engaged in GEO-5 processes. For example some regarded NGOs and civil society as potentially important user groups; they ranked second after governments for authors, and were among the interests that the Statement on the objectives, scope and process by the Global Intergovernmental and Multi-stakeholder Consultation directed GEO-5 to engage. The Future We Want paragraph 88 calling for a strengthening of the role of UNEP also stated in sub-section (h) to *"Ensure the active participation of all relevant stakeholders drawing on best practices and models from relevant multilateral institutions and exploring new mechanisms to promote transparency and the effective engagement of civil society."*

100. The evaluation observes that GEO-5 contributors were drawn from a narrow band of interests and interprets this as a consequence of the strategic choice prioritising use at the global level. Many of the organisations that would fall in UNEP major groups but not represented amongst contributors could provide science expertise (e.g. industry associations and major enterprises, trade unions, local authorities and Northern Peoples). And in several cases UN organisations such as UN Women are likely able to identify appropriate contributors. One author stated "UNEP should involve more direct contribution from proven and objective sustainability experts working in industry functions at different levels, strategy and operations. Thus you would get valuable inputs to make things work and disseminate through industry channels". Absent the overriding priority on global users, and GEO-5 would have been seriously out of balance with the intent of including decision and stakeholder interests to achieve legitimacy of the assessment, a pattern perhaps driven by the credibility standards.

1.14.2.7Disciplines

101. Having a mix of disciplines can contribute to balancing the critical natural and physical systems with other considerations important to sustainable development and policy such as economy, policy, community, culture and so on. GEO-5 had representation from at least forty-eight

[82] The evaluation team used the data files listing all GEO-5 participants and their affiliation including direct contributors, advisory groups and other groups such as the IGCs. After removing duplicate listings we coded interest using our best judgment from the fields identifying organization and their email address, supplemented by web searches on their name and organization where there was ambiguity. Chapter Coordinators were very helpful in addressing gaps in the data.

[83] See UNEP website: Civil society - http://unep.org/civil-society/ retrieved August 3 2014.

unique disciplines; many of which were represented by a handful of contributors. Disciplines with stronger representation seem appropriate to the undertaking and are listed below:

Table 9. Most frequently mentioned discipline by authors and reviewers

Discipline	Percentage of authors and reviewers
Biology	3%
Water Resources	4%
Chemistry	4%
Geography	6%
Environmental Policy	7%
Economics	9%
Ecology	10%
Environmental Science	15%
Disciplines <3%*	52%

*) Including many specialist disciplines such as Agronomy, Biodiversity, Climatology, Earth Systems Science, Energy, Geology, Forestry, GIS, Hydrology, Environmental Law, Oceanography, Urban Planning etc.
Source: Coded from 230 responses to author and reviewer survey Q3: "What is your primary discipline?"

1.14.2.8Legitimacy – Capacity of contributors

102. A GEA is a very large undertaking requiring engagement of many highly knowledgeable and respected intellectuals across natural, physical and social sciences. They are undertaken at specific points in time when some candidates might not be available, the rewards are mainly to career and reputation through association with the GEA and authorship, and the timing and level of inputs required can be inflexible and heavy. Moreover, since a GEA is a process as well as a product contributors need to have adequate abilities and a willingness to collaborate and communicate with others. Excluding reviewers, approximately 400 contributors were engaged with GEO-5, compared to about the same number for GEO-4, about 700[84] for the IPCC AR5 and around 235[85] for the Millennium Ecosystem Assessment.

103. From the author survey, the median age of authors and reviewers was 46 to 50 – the typical author or reviewer held at least a Master's degree and most a PhD or equivalent, was mid-career, and drawn from a wide range of disciplines in natural, physical and social sciences[86]. 55 percent of authors and reviewers had prior experiences with a GEO or another GEA, and of those without prior experience 15 percent were reviewers and 5 percent Fellows.

104. English was the working language for GEO-5; about a third of the authors and reviewers reported that this was somewhat problematic but very few regarded this to be an important problem[87]. Authors were asked to assess their chapter colleagues in terms of their knowledge, and collaboration and communications capacities. Overall the chapter-peer ratings are quite positive, around 7.5 on a 0 to 10 scale where 10 represented "highly knowledgeable and a leader in the area" and 0 "marginal capacity in the area". One chapter, Chapter 1 - Drivers scored very strongly on all three categories, and two chapters (8 – Review of Data Needs and 14 – West Asia) scored weakly on all three (where strong and weak are +- one standard deviation from the mean for the measure). The remaining chapter-peer assessments of knowledge, collaboration and communication skills were within one standard deviation of the mean for the measure.

[84] http://www.ipcc.ch/pdf/ar5/ar5_authors_review_editors_updated.pdf
[85] http://www.millenniumassessment.org/en/Authors.ByChapter.html
[86] Age (Q1), highest degree (Q2), discipline (Q3), prior experience with GEA/GEO (Q4-6),knowledge (Q36, Q50), communication skills (Q38, Q52), collaboration skills (Q37, Q51).
[87] Questions 24, 30, 47 and 56 to each contributor group separately: "Do you feel that working in English constrained you or the other authors?". This question was included because of concerns that were voiced during the early interviews.

105. The authors appear to have had appropriate qualifications in terms of education qualification, career stage and discipline, and their knowledge and collaboration and communication skills are positively rated by their chapter-peers. And while working in English appears to have posed some problems, overall it is judged by authors as not problematic.

1.14.2.9Legitimacy – Advisory and Consultative Groups

106. GEO-5 employed five advisory and consultative groups at various points in the process. There were 93 contributors to these influential groups. Table 10 below summarises their participation by gender and HDI index value suggesting reasonable representation by level of development but less so on gender. The GEO-5 team had varied levels of control over the selection process for the members of these groups (see 4.2.2.3).

Table 10. Representation by level of development

Advisory and Consultative Group	Total	% Female	HDI	Representative HDI Country
GEO-5 Advisory Group	18	28%	92	Sri Lanka
High Level Intergovernmental Advisory Panel	20	30%	92	Sri Lanka
Intergovernmental and Multi-stakeholder consultations	20	20%	67	Antigua and Barbuda
Intergovernmental meeting to negotiate and endorse SPM				
Science and Policy Advisory Board	19	32%	44	Latvia
GEO-5 Policy Expert Group	10	20%	47	Croatia
Data and Indicators Working Group	18	33%	93	Algeria
Totals	93	25%	71	Venezuela

107. Fifty-two percent of participants in these groups represented national governments, 10 percent multilateral organisations, 32 percent research and policy. Four percent were from NGOs and capacity building organisations; there were no representatives from business or development agencies. This seems reasonable given the main purposes of intergovernmental consultation and science review. It was also strategic bringing legitimacy and salience to the key High Level Intergovernmental Advisory Panel and the consultations and providing a foundation for the negotiations and endorsement of the SPM at the Intergovernmental Meeting in January 2012.

1.14.2.10 Legitimacy - Summary

108. GEO-5 pursued legitimacy from the perspective of the global focus defined by the GC using Rio+20 as a launching venue. This was a strategic decision that appears to have been successful – GEO-5 contributors suited the global priorities and collectively provided considerable breadth of disciplines, despite some shortcomings in the capacity of contributors. UNEP is regarded as a fully legitimate convener. GEO-5 had mixed performance on gender: while it had a strong female presence amongst contributors at all levels and on the GEO-5 team, the substantive representation of gender issues in the assessment was muted. The emphasis on credibility likely meant that much of the gender-differentiated data and analysis was judged not appropriate for GEO-5. The assessment process did not include the diversity of interests and stakeholders that was implied by the GC Decision and requested by the Global Intergovernmental and Multi-stakeholder Consultation, and contributors were typically drawn from countries with a high level of development. These observations are somewhat mitigated by considering that interests contributing to GEO-5 were more appropriate for the context of global decisions, and by comparing the level of development of the countries of origin of GEO-5 contributors to those of contributors to the IPCC AR5 and the Millennium Ecosystem Assessment, GEO-5 fared better. Overall, for its strategic global pursuit, legitimacy of GEO-5 can be considered satisfactory.

Evaluation Rating: Satisfactory

1.14.3 Salience

Corresponding Project Output in the Project Document: Output C - GEO-5 and its Summary for Policy Makers is policy-relevant to the specified target audience.

109. A salient GEA addresses issues and questions of interest to decision makers and key stakeholders, and is provided at a time and in a format that facilitates use. The timeliness is often connected to decision openings where there is willingness or a need to consider new approaches and incorporate knowledge that was not part of, or admitted to, previous decision processes. Timeliness is discussed in Section 4.2.5 below.

110. This general formulation of salience was largely acceptable to the GEO-5 team and the UNEP/DEWA regional coordinators. Some explained the concept as "speaking to the needs" of potential users and pointed to the need to be aware of shifts in the setting for use. The need for timeliness was described by one respondent as driven by the policy cycle and in particular "the times in a cycle where the information can be up-taken and used" and if this is not done UNEP "will continue producing good environmental reports that are useless for policy makers".

111. GEO-5 clearly found the policy work a challenging undertaking. Several members of the GEO-5 team and authors in their survey pointed to the lack of accepted methodologies to identify successful and scalable policy options, assess the underlying drivers of policy decisions, or even inform "how policies are actually made". A lack of "real policy experts" among the regional chapter contributors was also often mentioned as a limitation. The UNEP GEO team indicated that the North America and Africa Regional Chapter author groups were particularly limited in terms of having credible policy analysts. The Policy Expert Group did develop several iterations of a guidance document to provide essential guidance on the objectives, scope, and broad methodology of the regional chapters to align with the requirements of the GEO-5 Statement, but the final version[88] was not available before well past half-way through chapter development. The final guideline proposed a structure and contents for the regional chapters, policy-related definitions and a stepwise policy appraisal approach. The guidelines were clearly followed more for certain chapters than for others – North America and Europe, in particular, seem to have opted for going their own way in assessing and presenting their policy options. The evaluation was not able to identify a credible explanation for this other than the belated availability of structured guidance combined with difficulties within the author teams to agree on a common policy analysis approach and appropriate chapter contents and structure. The Data and Indicators Working Group was expected to look at indicators to measure success of implementation of policy responses over a certain period of time, but such indicators did not emerge.

112. Scale was an important challenge for some who pointed to the focus of GEO-5 on internationally agreed goals and targets making it very difficult to identify policy options that were salient at national and (sub-)regional levels. The diversity of target audiences also brought its own difficulties. Scale and diversity of target groups are indeed challenging issues for any GEA targeting global and national/(sub-)regional decision making and pursuing use across other quite disparate scales and among very diverse interests. The issue lies with the need to engage representatives of the decision making setting in the GEA knowledge process, to put it simply: there are a lot of countries but only limited spots for contributors to a GEA, and it is unlikely that countries could coordinate to ensure that all of the knowledge producer slots are filled appropriately. This is even more challenging when, as with GEO-5, use is pursued at different scales such as global and national/(sub-)regional because this requires targeting towards significantly different policy processes – global decision processes are quite different from national processes. One of the strategies to deal with the extensive scale and diversity challenges is to aggregate types of interests with (apparently) similar policy decision processes such as by region, type of user (global environmental decision making fora or national government for example) or some other grouping. Another strategy is to employ 'boundary spanners', organisations or individuals who are able to

[88] Guidance document to Chapter Working Groups for Part II: 'Options for Regional Policy Action' - http://www.unep.org/geo/pdfs/geo5/ANNEX7a_GEO-5_Guidance_Part_II_Policy_Appraisal.pdf

bridge the knowledge production and knowledge use settings, who participate in the production process and have a high level of legitimacy and trust from users, and operate transparently[89]. It appears that collaborating centres and UNEP Regional Offices provided some level of boundary spanning in GEO-4 and perhaps earlier GEOs, however confirming this is outside the capacity of this evaluation.

1.14.3.1Scale and GEOs

113. Previous GEO's recognized that there are environmental issues with relatively straight forward, national solutions and responses (such as pollution sources or coping with the effects such as cleaning up), but also others called 'emergent' or 'persistent' issues (such as ozone layer depletion and climate change) that are arguably the most serious environmental issues, often very complex, trans-boundary and in need of a global/multi-national response usually tackling the human drivers such as demographics, consumption patterns, trade, cultural and social processes etc. The trade-off between global and national policy relevance can be seen in light of this: UNEP (and its member states) might consider it the biggest priority to cope with the persistent, global issues that need a global/multi-national response rather than with the ones that can be dealt with nationally.

114. The first four GEO's are not explicitly pitched at influencing either global/multi-lateral or national/(sub-)regional environmental decision making. In fact, the reports remain rather vague about what their purpose and objectives are, and also on who they target. The contents of the first 4 GEOs are broadly global and regional and they all discuss state and trends at global and regional level. Interestingly, they all also summarize/describe policy responses at global, regional and national level. The regional and national responses are summarized per region and type of response, but here is no assessment of the appropriateness/effectiveness of these responses. It is only with GEO-5 that the member states have asked to strengthen policy relevance by adding an analysis of (regionally) appropriate national policy options, i.e. some kind of assessment of effectiveness of national policy responses.

115. However, looking at the recommendations made in the individual GEO reports, there is an evolution from no (zero) recommendations in GEO 1, over very broad, global recommendations in GEO-2000, slightly more specific global options/suggestions for action in GEO-3 to a much more specific and practical "options for action" section in GEO-4 that contains global recommendations but also recommendations for national policy and action. GEO-5 presents a whole array of successful national policy options for each region in the core of the report, but the recommendations chapter at the end is resolutely global, re-emphasizing the importance of a global response to many emerging and persistent environmental challenges. GEO-5 does not make explicit recommendations on national policy. GEO-4 performs more strongly in that respect.

116. From the contents and recommendations of the reports it can, therefore, be concluded that the level at which the GEOs were expected to be most policy relevant has never been really explicit, but has also not really changed. The consecutive GEOs seem simply to have experimented with different ways and structures to make the report both as globally and nationally relevant as possible, implying a trade-off between the two levels of policy relevance.

117. For GEO-5, salience was virtually synonymous with policy relevance. It is also connected to legitimacy on the premise that if contributors were representative of decision makers and key stakeholders then they would raise salient issues. The Governing Council explicitly requested:

> *that the policy relevance of GEO-5 be strengthened by including an analysis of appropriate policy options and their indicative costs and benefits; that intergovernmental and multi-stakeholder consultation be increased in the design of the process and the development of a Summary for Policy Makers […]*

[89] Clark, WC, Tomich, TP, Noordwijk, Mv, Guston, D, Delia, C, Dickson, NM & McNie, E 2011, 'Boundary work for sustainable development: natural resource management at the Consultative Group on International Agricultural Research (CGIAR)'.

that the Executive Director through the [UNEP] programme of work, engage all relevant stakeholders in conducting global environmental assessments to support and strengthen further their scientific credibility, policy relevance and legitimacy.[90]

1.14.3.2Policy Relevance in GEO-5

118. GEO-5 was directed to undertake the assessment in a manner that identified relevant policy options for users at multiple scales. This was a challenging remit given the diversity of potential settings for policy decisions. Elsewhere the evaluation addresses the extent to which GEO-5 was successful in this undertaking; here it assesses the capacity of GEO-5 for policy both in terms of human capacity and the general approach.

119. Policy relevance can be understood as an assessment that provides information and analysis relevant to policy decision makers and available at the right time. Members of the GEO-5 team and UNEP/DEWA regional coordinators agreed with this description of policy relevance adding greater emphasis on the utility and national relevance of the policy information to decision makers and the need for their engagement in and ownership of the policy development process. The GEO-5 team and UNEP/DEWA regional coordinators identified the major challenges to identifying and assessing relevant policies for global and national / (sub-) regional settings:

Table 11. Challenges to developing relevant policies identified for global and national/sub-regional scales by the GEO-5 team

Global	National/Sub-regional
• *Connectivity lost going from global to national / sub-regional* • *Connectivity to other Chapters (e.g. state and trends)* • *Approach – problems with credibility of policy, scaling policies up or down* • *Difficulty being creative, coming up with new approaches* • *Knowledge base for policy and existing policies is too weak* • *Politics of satisfying diverse interests*	• *Lack of experienced policy analysts among the GEO-5 contributors* • *Absence of a methodology that allows for policy appraisal of the capacity for policies to speed up achieving internationally agreed goals* • *Being timely for diverse settings* • *Scale issues; dealing with national and regional variation, relevance of internationally agreed goals to national and sub-regional settings, dealing with cross-scale interactions* • *Methods for policy assessment, understanding pace of policy development and effects* • *Lack of information on fine grained issues, credible knowledge about replicability, knowing how decisions are actually made* • *Changing the status quo*

120. These themes were echoed by authors of the policy-containing chapters in GEO-5 who felt that the rigor of the policy components was at best marginally sufficient for the needs of users (mean 6.5 on a 0 to 10 scale). Their agreement with the proposition "We were clear on the approach we would take to review policies and develop policy options" was also 6.5 on the same 0 to 10 scale[91]. Almost half felt that there were problems in the general approach to policy, a fifth each were concerned about policy assessment capacity and methods[92]. Table 12 summarises suggestions made by Regional Chapter authors for improving the analysis of policy options in future GEOs.

[90] GC Decision 25/2 paragraph 13: http://www.unep.org/GC/GC25/Docs/GC25-DRAFTDECISION.pdf

[91] Questions 15a " We were clear on the approach we would take to review policies and develop policy options. "and 15b "The level of rigor for the policy analysis and options was sufficient that potential users should have strong confidence in the work". There were 95 respondents to these questions.

[92] Question 17 author and reviewer survey *"Were there gaps in the capacity of contributors to the policy sections that affected the quality of the product? "*

Table 12. Suggestions for improving analysis of policy options identified by Regional Chapter authors

Approach		48%
Take a bottom-up approach starting with effective national policies	23%	
Policies should address issues from sector chapters	20%	
Less sensitivity to politics	13%	
Less simplistic - recognise diversity in regions	13%	
Less cautious, more evidence based	13%	
Avoid selecting policies largely based on preferences of individuals	7%	
Other	10%	
Method		23%
Identify and apply a method to assess and select policies	47%	
Use case studies including information on implementation	20%	
Consistent method across Chapters	13%	
Other	20%	
Capacity		20%
Better balance sector, region and policy; interests (need non-governmental); include decision-makers	54%	
Authors with stronger competencies	31%	
Other	17%	
Improve communications on GEO-5 policies		5%
Improve guidance to authors		5%
Total		100%

Source: Coded from responses to open ended question 17 in author and reviewer survey "Do you have comments on the effort to develop policy options or advice for future efforts to do this?" asked to authors and reviewers of regional chapters, 65 of 75 responded, four of whom offered two suggestions.

121. Responding to the request to provide policy relevant directions from GEO-5 proved quite challenging in the relative absence of adequate human capital or appropriate methods. This was recognised by, and was a concern for, GEO-5 authors and the GEO-5 team and UNEP/DEWA regional coordinators.

122. Policy relevance can be considered from the three different angles presented by the complementary contents of GEO-5: the state & trends aspect, the explanations aspect and the solutions aspect. Salience on the state and trends aspect means that the environmental data presented in the report needs to feed directly into decision making. This would be fine at global level - in part thanks to focus on globally agreed environmental goals, but also due to the preparation/negotiation of key side products such as the SPM and target-specific products. However, for national decision making the resolution of the data is much too low. Salience on the explanations aspect appears satisfactory at all levels, because explanations of the drivers behind the state and trends of the environment are relevant and useful at every scale of decision making. Explanations are provided in specific chapters (drivers, earth system perspective and scenarios chapters) but also throughout the thematic and regional chapters. The solutions aspect is, then again, most salient at the global level (global responses chapter) and the attempt to make it salient at national and (sub-)regional level was less successful. In the regional chapters, the examples for policy options are national and sub-national examples that are not easily transferable to other countries (for national decision making) even if these countries belong to the same region. These examples also provide little inspiration for (sub-)regional environmental policy making.

1.14.3.3Salience for global decisions

123. The concept of salience, in the context of GEO-5, can be understood as an assessment that provides information and analysis relevant to policy decision makers and available at the right time. GEAs reflect the state of the environmental conditions they are addressing, and with continuing environmental degradation and risk, the news from GEO-5 could have been very gloomy. Policy relevance arose from the interest of the GC and Intergovernmental Panel in an assessment that provided a more solution orientated analysis and findings likely reflecting their read of what would prove most salient for the upcoming global forums and in a world that is increasingly aware of environmental issues. Many global scale targeted users of the assessment are concerned with sustainable development, Rio+20 was the UN Conference on Sustainable Development[93], and development is naturally a very high priority for global organisations including the UN. Authors and the GEO-5 team and UNEP/DEWA regional coordinators were asked to rate the difficulty of integrating sustainable development into a GEA such as GEO-5. Responses of both groups were clustered at the midpoint with a median of 5 in a 0 (not at all difficult) to 10 (extremely difficult) scale.[94]

124. The challenge of placing a GEA in a sustainable development context was recognised by GEO-5 in the main document[95]. The GEO-5 report confirms the importance of setting and monitoring goals and targets. However, it observes that while the Millennium Development Goals (MDGs) is a results-based approach[96], the main MDG goal associated with the environment (MDG 7 *Ensure Environmental Sustainability*) is the only goal lacking measurable indicators, and this contributed to the difficulty of implementing MDG 7. The GEO-5 report concludes that there is a "need for a set of goals for sustainable development that promotes a balanced integration of its environmental, social and economic dimensions"[97]. However the challenges that GEO-5 itself had with developing policy relevant approaches ably illustrate the challenges that an integrated set of outcomes presents. It is as important for environmental-focused organisations such as the GEOs to integrate human dimensions into environmental outcomes to enhance policy relevance, as it is for human-focused organisations to integrate environmental dimensions into human system outcomes to enhance sustainability. While GEO-5 was well aware of the problem, it seems fair to observe that GEO-5 did little to advance the solution. Earlier evaluations by UNDP[98] and the GEF[99] have clearly indicated that the problem lies on both the environmental and human system sides of this issue as does a recent book on evaluation of sustainable development sponsored by the UNDP (Uito 2014).

125. The GEO-5 Report targeted a launch at the Rio+20 United Nations Conference for Sustainable Development in June 2012. Prior to the GEO-5 report launch, a set of intermediate products were produced to feed into the Rio+20 preparatory processes. This finite end–point, with a 2010 start, meant that GEO-5 was undertaken on a rather tight schedule. The key is that GEO-5 was structured and directed to address known ripe global decision settings where it was most likely to have influence towards environmental policies and decisions, and towards strengthening the position of UNEP.[100]

1.14.3.4Salience at other scales

126. The issue of methodologies to undertake the policy analysis was also of concern to the authors of the policy chapters. However, the authors were moderately satisfied that potential users should have strong confidence in the work. The average score on a 0 to 10 scale was 6.5 for each chapter

[93] 2013, *UNEP Year Book 2013: Emerging Issues in Our Global Environment*, United Nations Environment Programme Nairobi.
[94] Q60 with 195 responses.
[95] GEO-5 report, pg 470-1 UNEP (2012). Global Environment Outlook 5. Nairobi, UNEP.
[96] UN Millennium Development Goals - http://www.un.org/millenniumgoals/
[97] GEO-5 report, pg. 470 UNEP (2012). Global Environment Outlook 5. Nairobi, UNEP.
[98] Evaluation Office UNDP. (2010). *Evaluation of UNDP Contribution to Environmental Management for Poverty Reduction: The Poverty-Environment Nexus.* New York: UNDP.
[99] Global Environment Facility Evaluation Office. (2006). *The Role of Local Benefits in Global Environmental Programs.* Washington, DC.
[100] The United Nations Conference on Sustainable Development (Rio+20) in June 2012 was the largest UN environment conference ever held, marking the 20th anniversary of the Earth Summit. e. - http://unep.org/yearbook/2013/

(moderate confidence of users). Authors had the strongest confidence in Chapter 17 Global Responses and were most concerned about methodologies for Chapter 15 the Regional Summary[101].

127. There is a tension between credibility, in particular the emphasis on peer-reviewed sources, and ability of a GEA to address scale issues. Geographical coverage of reliable data and peer reviewed analyses diminishes as scale diminishes, as reliable data and peer reviewed sources are less likely to exist for less-resourced countries and low population areas. Similarly peer reviewed sources are thin for the effects of environment on important thematic issues such as gender The interest of the science establishment in generalizable results is also a factor. Results from smaller scale settings are more challenging to generalise. Also, most often research on smaller scale settings only exists on a sample basis and is conducted to contribute to larger scale, generalised observations and theories. As discussed under legitimacy, the use of grey literature was very limited in GEO-5, and the use of traditional knowledge practically excluded. This limited the breadth of policy experiences that GEO-5 could consider. GEO-5 authors and reviewers were asked about the balance of peer reviewed and grey literature and traditional knowledge for global and national / (sub-)regional policy scales. Their view was that the balance across the three types of knowledge was close to being right but would have been improved with greater use of traditional knowledge for both scales of analysis. Authors from some Chapters preferred a stronger rebalancing – for example at the global level authors contributing to Chapter 6 Chemicals and Waste would have reduced both peer reviewed and grey literature sources in favour of traditional knowledge, and at the national/(sub-)regional level authors of Chapter 12 Latin America and the Caribbean would have reduced grey literature moderately in favour of traditional knowledge[102].

1.14.3.5Salience – Summary

128. As stated in the Project Document[103], the primary objective of the GEO-5 project directed GEO-5 to help inform decision-making at multiple scales. GEO-5 proved to be salient for global uses aligning constructively with the global discussions on sustainable development and sustainable development goals. It was less salient for national/(sub-)regional scales of use, considered lower priority applications of GEO-5.

Evaluation Rating: Satisfactory

1.14.4 Capacity development

129. Capacity to utilize and adapt GEAs has been recognised as important and taken to include capacity to undertake and to use a GEA as well as apply the methods of a GEA at different scales and locations. The GC Decision on GEO-5 also considered capacity-building for developing countries to conduct and use the assessment a priority. The GEO-5 Project Document foresaw the updating of training modules for Integrated Environmental Assessment and the development of a module for integrated policy analyses to be made available to all GEO-5 participants within and outside UNEP as well as to UNEP's broader stakeholder community. The Project was also to organise regional training workshops and provide capacity building "opportunities" to help support data-management, data gathering and filling identified data-gaps.

130. The planned and budgeted GEO-5 capacity building activities other than the Fellows programme (based entirely on in-kind contributions) were weakly executed mainly due to time and budget constraints[104]. Previous GEOs had stronger components of capacity building such as GEO-4 that worked with the UNEP Collaborating Centres. The GEO-5 team and UNEP/DEWA regional

[101] Q15a: " We were clear on the approach we would take to review policies and develop policy options. "and Q15b: "The level of rigor for the policy analysis and options was sufficient that potential users should have strong confidence in the work". There were 95 respondents to these questions.
[102] Question 58 "How well do you think GEO-5 struck an appropriate balance for the purpose of global environmental decisions and policy between peer-reviewed, grey literature and traditional knowledge? "and question 59 " How well do you think GEO-5 struck an appropriate balance for the purpose of national and regional environmental decisions and policy between peer-reviewed, grey literature and traditional knowledge? " 185 responses.
[103] GEO-5 Project document - Project 44-P1
[104] PIMS Project progress submission (June 2012 and December 2012)

coordinators were much less of a common mind about the role of capacity in GEO-5 than they were for credibility, legitimacy and salience. For most of the regional coordinators the focus was on the challenging policy relevant tasks required of GEO-5, and for the core GEO-5 team the capacity focus was on undertaking the GEO-5 assessment more generally.

> *Capacity building was not given adequate attention/ priority in the GEO-5 process, in light of limited resources, in part because there was a lack of clear outputs and systematic process established at the onset that would ensure capacity building. Previously, capacity building was largely tied to the role of GEO collaborating centres - reconsidering the engagement and function of GEO CCs in future assessments could help improve the capacity building goals*[105].

131. Some of the regional coordinators would have wished for more capacity efforts built into the GEO processes and directed towards use of the assessment at national levels.

> *My experience was that national/(sub)regional policy makers were overwhelmed with the various on-going processes and information products, particularly in the run-up to Rio+20, so for them GEO-5 was just another one of many. The greatest impact was at and through Rio+20, but then countries needed assistance with how to translate the GEO-5 findings to their particular circumstances*[106].

132. These two important dimensions of capacity are also reflected in the reconstructed Theory of Change of GEO-5: i) potential users have the capacity to utilize the knowledge and ii) GEO-5 contributes to capacity to conduct GEAs. Given the absence of specific capacity building activities in GEO-5 other than the Fellowship Programme, contributions it could make to capacity to conduct an assessment and, if any, to the use of the assessment, would likely have come almost exclusively from capacity gains from direct participation in GEO-5.

1.14.4.1Capacity development from participating in GEO-5

133. An expectation was that the capacity of collaborating institutions and individual experts was to be developed as they conducted the GEO-5 assessment - through interactions with other assessment partners from different disciplines; and through the analysis of environmental and economic data and information. While collaborating institutions were not as involved in GEO-5 compared to the previous GEO, it is plausible that there would have been cross-disciplinary interaction amongst contributors to a given chapter as the composition of contributors to each chapter was very diverse in terms of disciplines represented[107]. For all chapters the limitations on page length, direction from coordinating lead authors and formally organised author meetings would have ensured a need for at least some of the authors to work closely together to produce their final chapter. Thus, while there was only limited cross-chapter participation for most contributors, the within-chapter processes and contributor population likely did foster a degree of cross disciplinary dialogue and learning. However, since participation in GEO-5 was strongly biased towards countries with an already high level of development, especially for the substantive chapters in Section 1 of GEO-5, such capacity development would fall to where such capacities already existed, not to the less developed countries where capacities are needed.

[105] GEO-5 team and UNEP DEWA survey respondent.
[106] GEO-5 team and UNEP DEWA survey respondent.
[107] To illustrate with a regional chapter, Chapter 10 Asia and the Pacific, 24 authors and 2 Fellows are listed for the chapter. The evaluation has survey data for 11 of them and these identified their knowledge domain as: systems analysis, SCP-RE-Mitigation and energy, Research on SD governance, Political Science, Natural Resource Management, Law, Geography, Environmental science (two), Environmental economics and Environmental engineering. Clearly the chapter included contributors from multiple disciplines. Similarly a topical chapter, Chapter 4 Water, where survey responses were received from 25 of 26 authors, also involved contributors from multiple disciplines: Agronomy, Chemistry and management of the Marine and coastal environment, Civil engineering, Ecology, Environmental Ecology and Biotechnology, Environmental policy, Environmental science (two), Environmental studies, Freshwater ecology, Geography/Continental hydrology, Geology, Hydraulics and environmental engineering, Hydrology (three), Marine affairs, Natural resource and environmental management, Oceanography and socioeconomics, Water and environment, Water resources, Water resources and environmental engineering, Water resources management.

134. The Fellowship initiative was a continuation from GEO-4, and GEO-5 Fellows offered very positive comments on this programme. The 20 GEO-5 Fellows[108] were understandably early-career, most with a Master's degree and representing a range of relevant disciplines such as Economics, Forestry, Environmental Science and Meteorology. None of the Fellows had prior GEO or GEA experience. The mean HDI index was 71 (Venezuela) and slightly more female than male Fellows. It seems that GEO-5 did a reasonable job of recruiting a diverse range of Fellows.

135. Fellows report that the support from their sponsoring institution was fully adequate. However, comments from some Fellows suggest that capacity developing benefits could have been improved in that they or some of their peers had mainly low level tasks such as checking bibliographies or note taking, and that more mentorship and more clarity on their role from the outset would have been helpful. All of the Fellows responding to the survey said they would recommend to a close colleague that they join a future GEO assessment led by UNEP, suggesting a very high level of satisfaction with their experience.

1.14.4.2Capacity development – Summary

136. The GC directed GEO-5 to provide capacity building for developing countries and this was re-emphasized in the Statement by the Global Intergovernmental and Multi-stakeholder Consultation. The Project Document explicitly planned for capacity building through training modules, regional trainings and the Fellowship Programme, but also expected capacity building to occur through participation in the GEO-5 process. Except for the Fellowship Programme, which successfully engaged at least 20 young scientists from across the world and different disciplines, capacity building efforts during GEO-5 were very limited due to time and budget constraints. Perhaps the biggest missed opportunity for capacity development was to have trained developing country experts in the art and science of policy analysis. However, it is entirely likely that capacity of participants was enhanced through the cross-disciplinary undertaking to produce the chapters, even though developing countries were less represented among the chapter contributors. And it appears that with modest effort GEO-5 could have enhanced returns to the careers of participants.

Evaluation Rating: Moderately Unsatisfactory

1.14.5 Timeliness

137. The logic for a concern with the timing of an assessment is the observed disconnect between knowledge producers and those who seek to use science knowledge for environmental and policy decisions. This disconnect has many facets including the questions that are addressed (salience), the cost-precision trade-off (feasibility) and the appropriate timing of process and products. Use of science knowledge is enhanced if it is provided at times when there is an opening for new information or ways of approaching issues – these are the ripe moments when new knowledge is likely to be welcomed by decision makers and incorporated into their decision making processes. This has already been discussed at quite some length under salience (See 4.2.3.3). Launch of GEO-5 for Rio+20 was the core of the strategic agenda for GEO-5. Timing was critical and the assessment was indeed launched prior to Rio+20.

138. However, global decision opportunities tend to be planned well in advance to accommodate schedules and enable the necessary time to prepare, review and often negotiate inputs. The GEO-5 final assessment report was formally launched quite late before the Rio+20 Earth Summit even though the opportunity was given to governments to comment on draft versions of the report as early as June 2011. Anticipating this, the GEO-5 process planned the negotiation and endorsement of the Summary for Policy Makers well in advance to the Summit at the end of January 2012. Two side-products of the GEO-5 were also pitched at, and prepared well before, the Summit (the booklets Keeping Track of our changing Environment: From Rio to Rio+20[109] and Measuring Progress:

[108] GEO-5 Fellows: http://www.unep.org/geo/pdfs/GEO-5_Fellows.pdf – the list posted online counts 25 Fellows, but 5 are missing from the UNEP internal list provided by UNEP/DEWA.
[109] UNEP (2011). Keeping Track of Our Changing Environment: From Rio to Rio+20 (1992-2012)

Environmental Goals & Gaps[110]) and were widely disseminated through the UNEP CPR, at UN Headquarters and meetings leading up to the Summit.

139. By contrast national and (sub-)regional decisions are often much more responsive to political and governmental agendas and to emerging events and priorities; and there are several hundred potential decision venues and processes, each with their own structure and critical path. Clearly getting the timing right is more feasible for global than for national and (sub-)regional decision fora. The GEO-5 timeline shows how this rolled out[111] and from this it is evident that GEO-5 did an exemplary job completing and launching the assessment in time for a very 'ripe' opportunity within a very tight timeframe.

Evaluation Rating: Highly Satisfactory

1.14.6 Communication

Corresponding Project Output in the Project Document: Output D - GEO-5 is effectively communicated to the specified target audiences

140. The UNEP team developed an Outreach Plan[112] in 2010 taking a pro-active, multi-layered approach to GEO-5 outreach utilizing regional and global activities to build momentum for the findings of the assessment. The outreach activities ranged from the first multi-stakeholder meeting held to set the scope and objectives of the assessment to the launch of the GEO-5 report and the launch of complementary products. The Outreach Plan was developed by an interdivisional outreach group with input, support and collaboration of UNEP/DCPI. The Outreach Plan also strategized communication and dissemination efforts after the launch of GEO-5

141. The GEO team adopted other strategies to propel country access including translation of the GEO-5 report into Spanish, Chinese and Russian opening up access of the report globally and expanding its reach and probability of use by countries and other stakeholders. Translation of the main GEO-5 report to French and Arabic was, however, not done due to lack of funds. GEO-5 was successfully launched in 13 cities worldwide mostly prior to the global launch on World Environment Day (June 6th) 2012.

142. Two important side-products of the GEO-5, not foreseen in the initial Project Document but introduced in the process early on as part of the outreach strategy, were also pitched at, and prepared well before, the Summit. The booklet Keeping Track of our changing Environment: From Rio to Rio+20[113] charts globally-aggregated data sets to show how the planet has changed in two decades. It was available towards the end of 2011 and disseminated to the UNEP CPR, at UN Headquarters and at various Rio+20 preparatory meetings. The booklet Measuring Progress: Environmental Goals & Gaps[114] outlined findings from the GEO-5 on progress towards – and gaps in – achieving global environmental goals. This publication provided an easily digestible summary of key GEO-5 findings and became available just before the Rio+20 Conference. Both documents were widely read and derived their credibility and legitimacy to an extent from being part of the larger GEO-5 process.

143. In addition to the main assessment report, the GEO-5 project produced several complementary products targeted at a range of audiences in order to increase the reach and impact of the assessment. All three publications were produced with input from representatives from the target audiences either as editors, authors or reviewers. The evaluation did not have the resources to examine these three publications against the standards set for processes that promote use as laid out in the ToC. The three audience-specific main publications are described below:

- *Tunza - Acting for a Better World: GEO-5 for Youth* was written by a freelance science writer in consultation with three youth editors to communicate science and policy from the

[110] UNEP (2012). Measuring Progress: Environmental Goals & Gaps
[111] Refer to Table 4 (pg. 17)
[112] http://www.unep.org/geo/pdfs/GEO-5_Outreach_Plan_GEOwebsite.pdf
[113] UNEP (2011). Keeping Track of Our Changing Environment: From Rio to Rio+20 (1992-2012).
[114] UNEP (2012). Measuring Progress: Environmental Goals & Gaps.

GEO-5 report for a youth audience. This report examined a variety of trends related to the Earth's system, and explored whether internationally agreed environmental goals were being achieved utilizing case studies from different regions. The report, available in English, was launched on 11th February 2013 at the 2013 TUNZA International Youth Conference[115]. It was downloaded 420,737 times between February 2013 and June 2014 (Annex 7).

- *GEO-5 for Business: Impacts of a Changing Environment on the Corporate Sector* was a publication written for business leaders to highlight the impact of the changing environment on business. It was written by the Green Light Group[116] with contributions from SustainAbility[117] and UNEP and from many reviewers from industry and science. The report assesses the operational, market, reputational, and policy implications of environmental trends on ten business sectors including mining, construction, chemicals among other sectors, proposing ways in which businesses can adapt to the changing environment while utilizing and maximizing competitive advantages in the long-term[118]. The report, available in English, French, Spanish and Chinese, was launched on 21st June 2013. It was downloaded 692,045 times between June 2013 and June 2014.
- *GEO-5 for Local Government: Solving Global Problems Locally* was co-produced by UNEP and ICLEI[119] and disseminated through ICLEI's website and newsletters. This report highlights the important role that local governments in sustainable development, citing specific case studies and policies of environmental management in local governments around the world making recommendations for transfer of the successful policies to other cities and countries. The case studies were used to present examples of transformative change at the local government level and how these can feed into international environmental goals. The report that is available in English, French and Chinese It was launched on 16th June 2012 at ICLEI's World Congress held in Belo Horizonte, Brazil, where they adopted messages that were later presented the Rio+20 Conference[120]. This report was downloaded 56,723 times between June 2012 and June 2014.

144. The GEO-5 website - available in 6 UN languages and Portuguese - provided excellent visibility and effectively raised the project's profile. Targeting the 2012 World Environment Day and the Rio+20 Conference to launch the main products, the GEO-5 report and Summary for Policy Makers, also raised the profile of GEO-5 and provided media exposure and general global interest.

145. Data presented in Annex 7 shows that the GEO-5 English report was downloaded over 2,011,167 times between June 2012 and June 2014 with the greatest downloads recorded during and right after the launch of the report in June 2012. DCPI also identified that in the months following the launches, close to 5,000 references to the GEO-5 assessment were made in the media. According to an internal media coverage report assembled by DCPI, a large part of the GEO-5 coverage in the media was linked to the Rio+20 conference stating that the assessment report set the tone for the negotiations at the conference.

146. Regional Policy briefs were also developed with media releases organized to propel the uptake of the key messages by governments and other stakeholders and highlighting key options for policy action as part of the rigorous GEO-5 scientific assessment that analysed state and trends in the global environment.

Evaluation Rating: Highly Satisfactory

[115] http://www.unep.org/tunza/conference2013/geo.aspx
[116] Greenlight Group is a software consulting and systems integration services firm. See: http://www.greenlightgroup.com/index.php/pages/about-us
[117] SustainAbility is a business consulting firm. See: http://www.sustainability.com/company
[118] http://sd.iisd.org/news/geo-5-report-highlights-impacts-of-a-changing-environment-on-business/
[119] ICLEI – Local Governments for Sustainability is an international association of local and metropolitan governments dedicated to sustainable development. ICLEI provides technical consulting, training, and information services. See: http://www.iclei.org
[120] http://worldcongress2012.iclei.org/blog.html

1.14.7 Summary: Achievement of Outputs

147. GEO-5 developed and applied procedures to ensure a credible assessment and the SPAB, authors and reviewers all judged that, overall, their credibility standards were met. The limited number of countries surveyed by the evaluation also found credibility of the assessment satisfactory and it was not questioned by the media. The SPAB prepared guidelines to ensure scientific credibility and conducted two reviews which were both positive and sources of advice to GEO-5. GEO-5 contributors had the capacity to undertake the assessment and authors and reviewers were quite positive about the credibility of the Chapters they contributed to.

148. GEO-5 pursued legitimacy aiming for and foremost at global use of the assessment and GEO-5 contributors suited the global priorities. Less attention was given to legitimacy in the eyes of lower scale and more interest-specific users – including the interests that are disproportionately affected by the environment including nations with lower HDI rankings[121], and the major groups and stakeholders usually consulted by UNEP, nor for cross-cutting issues such as gender. Sources of knowledge and representation from these groups were given far less prominence in the assessment process and substance than scientists and governments.

149. GEO-5 proved to be salient for global uses aligning constructively with the global discussions on sustainable development and sustainable development goals. It was less salient for national/(sub-)regional scales of use, however while these were still important they were lower priority applications of GEO-5. The GEO-5 assessment was completed in time for the Rio+20 Conference. Even if the main report came quite late to be fully digested, its precursor products came well on time to feed into the preparatory discussions leading up to the Conference.

150. Capacity building was the main victim of the budget reductions in the GEO-5. In particular capacity development for policy analysis and enhancing use of the assessment at different scales and by different stakeholder groups was largely absent from the GEO-5. The Fellowship Programme, based entirely on in-kind contributions, was considered a success.

151. Communication and dissemination was primarily targeted at global and national governments, and very well planned and implemented using multiple media to reach a variety of audiences.

Evaluation Rating: Satisfactory[122]

1.15 Effectiveness: Attainment of project objectives and results

152. GEO-5 implemented contemporary approaches to a GEA as well as some innovative efforts to assess performance on internationally accepted environmental goals. It was undertaken within a very limited time frame yet was able to provide the first key products – a negotiated and agreed SPM, two attractive summary booklets and the main report – in time for the main, very important and targeted venues for use of GEO-5 at global levels. Contributors are satisfied with the quality of the products and with the processes, and numerous claims of use suggest that it was fit for purpose. Fundamentally GEO-5 delivered under constraints suggesting an effective attainment of objectives and results.

1.15.1 Achievement of direct outcomes

153. The evaluation found reasonable evidence to support a claim that GEO-5 has contributed to global environmental discussions, including at Rio+20 and in the SDG deliberations. It was also able to identify a number of claimed contributions of GEO-5 to national and (sub-)regional levels, many of which appear credible. If these claims come to fruition and the trend continues this suggests that GEO-5 also had (and still has) influence at these levels. The evaluation also found some evidence of high level use of GEO-5 within UNEP, but little operational use. Other venues for use

[121] GEO-5 report pg. 470

[122] The composite rating achievement of outputs is not a mathematical average of ratings given to individual project outputs. It is an overall, informed and independent judgment of the evaluation criterion by the Evaluation Team, taking into account the relative importance of the sub-criteria in relation to the project objectives and implementation context.

can contribute to public and organisational awareness and deliberative processes. These include research and teaching and directly by individuals and organisations, availability through web and physical depositories, and so on.

1.15.1.1Capacity gains from GEO-5

154. Capacity building outcomes were less than anticipated as most capacity building activities, with the exception of the Fellowship Programme, were not executed. There were, however, considerable capacity gains from participation in GEO-5 by contributors (authors and Fellows in particular) who increased both their assessment skills and social capital. Through working on GEO-5 some authors extended their networks, some, including many Fellows, gained their first experience on a GEA, and for those who had worked previously on another GEA but not a GEO, GEO-5 provided their first experience with a UNEP GEO.

155. Approximately 45 percent of the authors reported that they did not have prior experience with an earlier GEO or with any other GEA[123]. It was more likely that this was the first GEO or GEA assignment for authors from countries classed as Medium HDI (over 60 percent) suggesting capacity gains that could contribute in future at national levels and in future GEAs. As noted by a Chapter Coordinator: "GEO has a big downwards cascading effect at regional, sub-regional and national levels. Scientific experts from individual countries whose capacity was previously enhanced on use of methodologies would be able to apply this knowledge and skill". GEO-5 authors indicated that about a third of the authors in their chapter were recruited with the ambition that being part of the GEO-5 process would contribute to national capacity or use at the national level. However the overall HDI level for the typical contributor to GEO-5 came from a country with quite high levels of human development (median HDI ranking of 26 - see Legitimacy discussion paragraph 79), hence the proportion of people from developing countries gaining from participation in GEO-5 was relatively lower.

156. Working on GEO-5 provided opportunities for some authors to build their social capital by creating or joining networks and receiving opportunities to work with others that they did not have previously. These gains appear to have been present. 43 percent of contributing authors and 57 percent or coordinating lead and lead authors reported having previously worked with others from their chapter. 37 percent of the contributing and 41 percent of the coordinating lead and lead authors reported working with other contributors with whom they had not previously worked before, suggesting that real, new opportunities for collaboration were created[124]. The evaluation cannot know how much of this would have occurred in the absence of GEO-5, but it seems reasonable that GEO-5 facilitated significant new network opportunities that have already resulted in new or potential joint undertakings. HDI values were at the high-medium cusp for both those with prior collaborations with their chapter colleagues and those with new collaborations with these peers, close to but slightly higher than the average HDI value for all authors. This might be related to relatively less favourable contextual conditions for collaboration among experts from developing countries compared to experts from developed countries – conditions which did not change with their participation in the GEO-5.

157. Several respondents to the author and reviewer survey suggested ways that returns to their careers could be enhanced with modest effort from GEO[125].

- *I wish there was a way that UNEP facilitated ongoing collaborations among the group in GEO-5 because we are constrained by resources to talk or do stuff together.*

[123] Q4: "Were you involved with another Global Environmental Outlook prior to GEO-5?" and Q5: "Were you involved in any global environmental assessments other than a UNEP GEO prior to your involvement with GEO-5?". 230 responses to Q4 and Q5. Q6 asked "What other global environmental assessments were you involved with prior to you involvement with GEO-5?" 99 responses.

[124] Q44 and Q53: "Which other GEO-5 authors in any of the chapters you contributed to did you have a professional association prior to working on GEO-5? Please indicate their name and type of relationship." Q45 and Q54: "Since working on GEO-5, have you started to work or communicate professionally with any of the other GEO-5 authors from your Chapter or other Chapters and with whom you had not previously worked?" 164 eligible author respondents (question not asked of Fellows or reviewers).

[125] Selected comments from Q65 *"Do you have any additional comments?".* The comments are illustrative and should not be considered representative.

- *My current employer does not recognize participation in GEO as having any 'research' value and so it will not help me in terms of formal performance evaluation. Likewise, Google Scholar cannot find the chapter so I will not get credit for any citations. I have since worked on two papers linked to GEO-5 which helps; perhaps some space could be created within the process to discuss other outputs like these to help (especially early-career) academics to get some professional reward for the hundreds of hours they put in.*
- *One comment on the final report. I noticed that the list of contributors have been put as an annex at the end of the report. And the list has been put in such a way that it is difficult for an author to find his name, and especially for a scholar to quote or show, prove that he was a leading author in such a report. Even within the chapters, the effort the leading author has exerted was not reflected.*

158. GEO-5 Fellows described their experience as professionally beneficial (enriching, educative, mind-opening), stimulating (meaningful, progressive, exciting, rewarding, thrilling, thought-provoking) and challenging (contradictory, disconnected, exhausting, frustrating, important); and cited various benefits such as increased recognition, networking, experience with collaborative and multicultural undertakings, stimulating commitment to career, awareness of international policy processes, and a "gem on my CV".

Evaluation Rating: Moderately Satisfactory

1.15.1.2 GEO-5 assessments are used for environmental decision making on global goals and agreements

159. Global decision processes are complex and strongly influenced by a web of contextual and directed inputs making it near impossible to identify the weight of the contribution of a single input such as GEO-5 to the decision. The evaluation considers this issue from the perspective of whether GEO-5 had a plausible presence at Rio+20 and SDG deliberations – *it did*; and whether there were appropriate promoters of the GEO-5 messages at these fora – *there were*. While the evaluation cannot demonstrate attribution, it is certainly plausible that there is a causal link from GEO-5 to the Rio+20 Decisions, to the gains of UNEP from Rio+20, and to the increased attention for environment in the SDG discussions.

160. The main GEO-5 report Environment for the Future We Want was launched on the World Environment Day just two weeks prior to the Rio+20 Conference, and followed the release of the Summary for Policy Makers (SPM) several months earlier. The SPM was drafted by UNEP with guidance from members of the GEO-5 High-level Intergovernmental Advisory Panel and technical inputs from the coordinating lead authors, and negotiated and endorsed at the intergovernmental meeting on 31 January 2012 in Gwangju, Republic of Korea. The agreement on the SPM represented an early global use of GEO-5, as did the use of the SPM in deliberations leading up to and at Rio+20. The ToC emphasises the importance of the assessment process in promoting use. Experience of the long term research underlying the ToC is that an emphasis on the product, in this case the main GEO-5 report, is less likely to promote use than is a good process leading to the report. However, an important utility of a product such as the main GEO-5 report is its existence value providing assurances of the scientific credibility of the underlying knowledge and analysis. And the credibility of the GEO-5 assessment rests on the GEO-5 processes, especially those contributing to assuring scientific credibility. Thus the evaluation team expects that the assessment process was the driver for use of GEO-5 at Rio+20 and subsequently at the SDG discussions, particularly those associated with the SPM. The credibility of the knowledge presented in GEO-5 was assured by the entire GEO-5 process especially those associated with credibility.

161. At least two members of the High Level Intergovernmental Advisory Panel who were deeply engaged with and strong proponents of GEO-5 were active participants in the Rio+20 discussions, and several sources confirmed that they provided strong ambassadorial functions for the GEO-5 messages at those venues. The UNEP Senior Management Team were also strong proponents of the

GEO-5 messages at Rio+20 as well as subsequent discussions concerned with the Sustainable Development Goals (SDGs). The two High-Level Intergovernmental Advisory Panel members also promoted GEO-5 messages at SDG discussions. In effect the High Level Panel offered a boundary spanning function for both the GEO-5 approach and process, and for its use at global levels. Representation in the High Level Intergovernmental Advisory Panel is considered very legitimate with a HDI value near the world median, and through negotiations and endorsement it echoed the salience of the SPM, but more importantly was a social process aligning with the driver for use. Also, the existence of the full assessment and existence of the full GEO-5 report documented credible knowledge processes and products underlying the assessment and the SPM.

162. GEO-5 is credited by many with stimulating inclusion of both the GEO itself and UNEP as the UN's leading environmental organisation in the Future We Want Outcome Document (paragraphs 88 and 90) that was endorsed by the 66th General Assembly. This provides an indication of the timeliness and relevance of GEO-5 in addressing pertinent global challenges and focusing on solutions in the global and regional arena. The SPM was the main GEO-5 vehicle in these venues.

Evaluation Rating: Satisfactory

1.15.1.3 GEO-5 assessments are used for environmental decision making at national, (sub-) regional and sectoral levels

163. There is evidence of national level use where GEO-5 appears to have contributed to decisions. However it is important to recognise that a) it is still too early to expect much direct use to be occurring and b) an ambition about widespread use at national and (sub-)regional levels was likely beyond the capacity of GEO-5 and was not the strategic priority. Despite these limitations this evaluation is able to point to already occurring national level uses which is notable given the questions this evaluation raises about the GEO-5 approach to use at national/(sub-)regional levels and the short time period for use to occur.

164. Scale is a major challenge for efforts to promote use of a GEA at national and (sub-)regional levels. The premise is that salience and legitimacy are promoted through engagement of decision makers and key stakeholders in a GEA. Consider that an individual country might consider a number of potentially different policy decisions at different levels of fruition and that there are many countries; one quickly fills all the contributor spots in an assessment but still needs the technical experts. Clearly some form of aggregation or representation is more workable, perhaps by broad classes of policies and level of national development, or by interests affected by environmental policies, or by regions as in GEO-4. This is relatively unknown ground, the literature is fairly convincing that participation makes a difference, but it is ambiguous how representation should be pursued across such wide scales.

165. For the purposes of this evaluation, many respondents tended towards comparing the approach taken in GEO-5 to the more regional collaborating centre engaging approach in GEO-4, and tended towards observing that national and (sub-)regional interests were not very well represented in GEO-5 compared to the previous assessment. However, it is important to observe that GEO-5 prioritised use at the global level, selected internationally agreed goals to implement the GC decision[126], and operationalized these in 2010 at the first meeting of the High Level Intergovernmental Advisory Panel[127] prior to the conduct of GEO-5 and then used these internationally agreed goals to structure the assessment. This was a clear top-down strategy, understandable given the global focus, and it did include some subsequent consultation with

[126] GC Decision 25/2 paragraph 13: http://www.unep.org/GC/GC25/Docs/GC25-DRAFTDECISION.pdf , retrieved 25, August 2014
[127] Summary Report of the Intergovernmental Meeting on the Fifth Global Environmental Outlook Summary for Policy Makers, January 29-31 2012. p.2

regions[128]. However from national and regional perspectives this approach no doubt diminished the salience of GEO-5.

166. There is a disconnect between, on the one hand, directing GEO-5 to target and strategically pursue global decisions, and on the other hand calling for GEO-5 to engage national/(sub-)regional decision makers in the assessment to promote salience and legitimacy and ultimately their use of the assessment. While the ambition of the GC and Intergovernmental and Multi-stakeholder Consultation are understandable, they do not appear to have been feasible, especially given resources and time frame. Nonetheless, GEO-5 has and will likely continue to contribute to national policy and environmental decisions in a range of ways such as those mentioned by respondents to the several evaluation surveys. In many instances of perceived use the true influence of GEO-5 was impossible to verify and in most cases use seems to be rather superficial. The following are reports of use or influence of GEO-5 from the author survey[129]:

- Canadian Public Health Association *Health and the Environment* Position Paper
- Chapter 16 of GEO-5 was used by Mangroves for the Future (MFF) for developing its methodology for resilience analysis.
- Chinese government affiliated research institute referred GEO-5 for domestic policy research
- Climate change mitigation actions in Mexico, improved the discussion on this topic
- Climate Change, National Communications, Argentina.
- Discussion about successful policies in biodiversity in Peru
- E-waste Regulation in Nigeria in 2011 by the National Environmental Standards and Regulations Enforcement Agency (NESREA)
- Formulation of the Climate Change Policy in Malawi
- In defining programs at the National Environmental Authority, drafting the National Policies in the Ministry of Environment
- At present, multiple actions in the Republic of Moldova take in consideration GEO5 report: Development of legislation and normative acts according the international requirements; Approval of the new Environment Strategy for 2014-2023 years; Development of the green economy in the country; Development of new institutional infrastructure in field of the environment protection;
- In Mauritius, the Ministry of Environment uses the UNEP reports as an inspiration for its environmental policies
- Integrated Coastal Management examples in Colombia
- IUCN resolutions
- National state of the environment surveys in Kenya

167. Survey responses from national environment agencies provided some additional perspectives on national use and challenges to this[130]:

- Found GEO-5 methodologies useful for their settings (*The greatest strength of the GEO process is its methodology for determining the cause-effect of different environmental problems through the use of FMPIER framework[131]. Establishes policy options for different*

[128] IISD reporting on regional consultations: http://www.iisd.ca/crs/geo/geo5/ and GEO-5 website on regional consultations: http://www.unep.org/geo/geo_Photogalleries.asp

[129] Q10: "*Are you aware of situations where GEO-5 has been used or had influence on environmental decisions or policy?*" Q11: "*Please provide information about use or influence of GEO-5 in sufficient detail that the evaluation team can follow-up (up to four examples).*" All responses to Q11 are listed here.

[130] Compiled from 13 responses from national environment agencies. All responses are listed here.

[131] Fuerzas, Motrices, Presiones, Estados, Impactos, Respuestas (FMPIER) Framework which translates to the Drivers, Pressures, States, Impacts, Responses (DPSIR) Framework in English

regions in order to meet the goals of the various international agreements. One would expect that decision makers nationally incorporate this knowledge to develop public policy)

- Found the scale and focus of GEO-5 helpful (*Provides a unique global, cross-disciplinary perspective on environmental issues and captures some regional variation*)
- Found GEO-5 to be a useful base document for reference when developing policy (*Australia uses GEO-5 primarily as a reference document - for example, Australia referred to GEO-5 in developing National Sustainability Indicators for Australia in 2012*)
- Found GEO-5 to provide good comparison information against which to assess national levels (*The GEO-5 serves as a significant indicator in the Gambia's MDGs and the national programme for Accelerated growth and Employment*)
- Found GEO-5 provided guidance (*I think that GEO-5 plays a good role in development of our policies and practices, since we use it as a guide to make the Iraq's National Environmental Strategy and Action Plan*)

168. National environment agencies also pointed to several GEO-5 shortcomings that limited utility of the assessment[132]:

- Insufficient use of traditional knowledge and grey literature (*At face value, it would appear that there is an overreliance on peer-reviewed literature in GEO-5. We note the work of other international bodies and processes to redress the balance between peer-reviewed and grey literature and the integration of other knowledge systems (e.g. indigenous and local knowledge) into assessments. For example, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Science (IPBES) has established an Indigenous and Local Knowledge Taskforce to develop procedures and approaches for working with indigenous and local knowledge systems. IPBES will also look at ways of incorporating grey literature and traditional knowledge into its procedures for the preparation of the Platform's deliverables due to be discussed at IPBES-3 in 2015.*)
- Shortfall in capacities limits use (*Capacity building in the process should be given priority if GEO is to be taken to the national level*)
- And the scale of GEO-5 reduced utility at the national level (*Too broad and general to make it relevant to the local level conditions. With the overwhelming number of information on the environment coming from different sources, the GEO-5, with its global aim has not in any significant way influenced development of policies and practices in our country), (The main obstacle for GEO-5 to inform decisions and practices at a national level is the high level nature of the report - as an overarching global assessment it lacks the specificity and detail to deliver answers to policy questions in a given context*).
- And need for communications targeting national users (*Greater promotion by governments (e.g. UNEP could request that relevant government departments advertise GEO on their websites). A road show to showcase and facilitate discussions with government and business leaders.*)

169. Awareness of the scale of identifying ripe moments for national or (sub-)regional decisions, and the logistical, resource and protocol issues that responding to these would involve could lead one to be more pragmatic about the feasibility of observing connectivity between an individual GEA such as GEO-5 and use at these levels. One interview respondent usefully suggested regarding a GEA as a wholesaler of knowledge about specific classes of environmental issues, presumably the reports, with communications products and processes, and networks connecting potential users to the GEO warehouse. This concept has appeal. But potential users need to know about the warehouse

[132] Compiled from 12 responses from national survey respondents, bullet list present all responses.

and that the warehouse could hold potentially useful material (awareness). Potential users also need to know how to use the knowledge, and the knowledge needs to addresses salient questions (to users). A wholesaler needs representatives to communicate with potential users, to assess their needs and what is required for the knowledge to work for them, and provide some guidance and support. For GEAs the concept of the boundary spanner applies. Recalling the discussion of this in section 4.2.3 on Salience above, a boundary spanner most fundamentally connects organisations (such as a national department addressing environmental issues or considering policy options) with relevant external sources of knowledge and is key to bringing new knowledge to the decision process. The processes adopted by GEO-5 did not include boundary spanning organisations or provide for boundary spanning functions at the national and (sub-)regional level to connect the assessment to national and (sub-)regional decision venues. But it did produce the warehouse stocked with analysis, some policy options and methods. And the warehouse appears to be finding uses at national and other more local scales. For a GEA focusing on global decisions, the potential contribution to national decisions is an added gain.

Evaluation Rating: Satisfactory

1.15.1.4Use of GEO-5 within UNEP for strategic planning

170. The GC Decision requested the UNEP Executive Director to undertake GEO-5 "which should also inform, as appropriate, the strategic directions of the United Nations Environment Programme." The evaluation found no evidence that GEO-5 findings or policy options were used to inform UNEP strategic planning processes. The GEO-5 assessment did not come in time to influence the preparation of the UNEP Medium-Term Strategy which was done in the course of 2011, but it was in time to potentially inspire the Programme of Work, the Programme Framework documents for each Sub-programme and the cohort of new projects proposed for the biennium 2014-2015[133]. However, the evaluation couldn't find any substantive reference to GEO-5 findings or recommendations in the corresponding planning documents. In reality, GEO-5 might have been consulted without proper referencing as referencing of sources is often neglected in UNEP planning documents. Internal use of GEO-5 in UNEP, while possible, is certainly not evident. Due to the lack of evidence, the evaluation was unable to rate this direct outcome.

1.15.1.5Use of GEO-5 in research and academia

171. These uses were not an explicit objective of GEO-5 and cannot be connected directly to environmental policy decision making. The evaluation did, therefore, not investigate these uses in any depth and does not provide a rating for them. However, some "unintended" findings regarding use of GEO-5 in environmental education and research are worth mentioning in this report.

172. The CPR Focus Group meeting to discuss use of GEO at the national level mentioned that the GEO-5 was increasingly used in schools and universities as a reference in environment-related courses. They also mentioned, however, that previous GEO reports were still being used as each of them has its own emphasis and strengths. GEO-4, for instance, was considered more comprehensive than GEO-5 in terms of presenting environmental state and trends, in particular at the regional level, as its data and analysis is not focused on a set of internationally agreed environmental goals.

173. The evaluation team was able to retrieve about 70 direct citations of the GEO-5 main report in academic and research papers published between mid-2012 and mid 2014 (See Annex 8). However, while this proves that the GEO-5 report is used by researchers, the number of direct citations is not indicative of the frequency with which the GEO-5 report is consulted by researchers. Many researchers may still use the GEO-5 publication as a source of meta-data and analysis, and then go back to and cite only the original source of the data or analysis.

[133] The evaluation looked at over 30 project documents approved after the GEO-5 publication and did not find any explicitly referenced GEO-5 contents. The GEO-6 and UNEP Live project documents refer to the GEO-5 assessment as a process, but not to its contents.

1.15.1.6Summary on achievement of direct outcomes: use and influence of GEO-5

174. The goals of GEO-5 concerned use and influence in policy and environmental decisions across a very broad palate of decision venues. Global decisions and in particular those associated with Rio+20 were the priority but UNEP and the national and (sub-)regional levels were also important venues for GEO-5 use. The GEO-5 approach to achieve use through a joint knowledge production process is supported by recent literature on use of GEAs and articulated in the Theory of Change for GEO-5.

175. The evaluation observed that the approach at global level was indeed through joint knowledge production, but due to strategic priorities, resource and time constraints, and issues of scale and diversity of audiences, this cannot be claimed at national/(sub-)regional levels or with UNEP. GEO-5 has plausible claims to very important uses at global levels which was the priority scale. Some potential use is also observable at smaller scales, national/(sub-)regional and similar.

176. Authors and peer reviewers of GEO-5 were mainly representatives of two broad interests, science (including social sciences) and governments (including intergovernmental organisations). Other important parts of GEO-5, most notably the High Level Intergovernmental Advisory Panel and the Intergovernmental and Multi-stakeholder consultation group were drawn from similar interests. This aligns with the focus of GEO-5 on global decisions and the direction from the GC strongly referencing scientific credibility and consistent with the procedures of GEO-5 assuring credibility. This application of the ToC to achieve use and influence in global venues combined with excellent timing and communication established a social knowledge process among global decision makers, driving global use. GEO-5 targeted and is perceived by many to have already contributed to global and international policy and environmental decisions. The evaluation is satisfied that there is a plausible connection between the GEO-5 products and discussions and decisions at Rio+20 and discussions at the SDG dialogue – decisions and discussions that proved favourable to UNEP and advanced the inclusion of environmental issues in the sustainable development agenda. These are complex settings and it is rarely if ever possible to demonstrate a direct connection between an intervention and decisions made in these fora. The evaluation is comfortable recognizing that GEO-5 products and processes very likely contributed and had some influence in the venues. This was the priority targeted scale of use for GEO-5.

177. There is some evidence that use at national/(sub-)regional levels is supported by GEO-5 products and could be occurring. The evaluation has much lower expectations of causality between GEO-5 products and processes at this scale because it regards as unrealistic any ambition to achieve significant use at these smaller scales with a process and product that was designed to address much higher scale use. With priority given to scientific credibility, GEO-5 could be regarded as less legitimate and salient by some important developing regions and countries, by those interested is important issues such as gender and the environment, and also by non-science and non-governmental interests. The priority given to credibility largely excluded their knowledge and experience. Peer review is also less likely to be regarded as a fair or appropriate screen for admitting knowledge they consider relevant into the assessment process. This is summarised in the Bridging Scales and Knowledge Systems document from the MA:

> "…assessments traditionally have relied almost exclusively on scientific information, yet considerable knowledge relevant to decisions regarding the environment and development can be found outside formal scientific disciplines. This includes knowledge held within businesses, knowledge held by local resource managers, and traditional knowledge passed down from one generation to the next. But how can a science assessment be transformed into a knowledge assessment? Scientific disciplines have well-developed means of validating information through peer review that would rule out incorporating many other forms of

knowledge. How can multiple forms of knowledge be incorporated into an assessment when each type of knowledge has its own mechanisms for determining validity and utility?"[134]

178. In addition, the useful boundary spanning functions were lacking, either from direct involvement in the GEO-5 knowledge process of national or regional decision makers and key stakeholders, or from a transparent and legitimate boundary spanning institution. However, the evaluation did collect many reports of GEO-5 contributing to discussions on environmental policy at these smaller scales, reflecting that use is at least perceived to be occurring there even at these very early stages.

179. In the absence of proper referencing of sources in UNEP planning documents, the evaluation could not establish whether and how GEO-5 was used within UNEP for strategic planning purposes with any degree of certainty. Use in research or academia was not assessed in-depth by the evaluation.

Evaluation Rating: Satisfactory[135]

1.15.2 Likelihood of impact

180. Considering the difficulties to attribute environmental decisions to the GEO-5 process, findings and recommendations, it is particularly challenging to assess the likelihood of impact on the environment and human well-being which are much higher up the causal pathways of the Project. The Project Document foresaw an impact/influence study for GEO-5 but this was not available at the time of this terminal evaluation which, with its limited resources (see limitations of the evaluation discussed above), could not conduct an evidence-based impact assessment. Instead the evaluation was constrained to explore likelihood of impact from a theoretical standpoint. Due to the impossibility for this terminal evaluation to attribute measurable impact on the environment and human well-being to GEO-5, it would be unwise to rate this evaluation criterion.

181. The evaluation considers that the reconstructed Theory of Change for GEO-5 is robust and, as discussed above, there is a very strong perception – including by the evaluation – that the GEO-5 has contributed to environmental decision making at the global level and had some influence already at the national level. How likely these global decisions and dispersed national influences are to contribute to better environmental management, and, ultimately, to improved environmental conditions and human well-being, depends on many external factors which are present in highly varying degrees across the world. For instance, long-term political commitment is not present in many parts of the world including some influential developed countries; adequate availability of resources (human and financial) for implementation and enforcement of decisions, is often not present in countries where national budgets are small or environment doesn't receive priority in budget allocation, and where environmental research and education is very poor; strong public awareness and civil society action, is certainly on the rise but still alarmingly suppressed in some countries with major environmental challenges; and whether effective incentives are in place for the for-profit sector is highly dependent on political commitment and consumer awareness. The GEO-5 is likely to influence political commitment and resource allocations in countries –mostly due to its use for global decision making but also as a global reference to support national arguments. It is also expected to contribute to environmental research and education. In the view of the evaluation team, GEO-5 is likely to support civil society action as an advocacy tool, though the scope of this was not be verified by the evaluation. GEO-5 is quite unlikely to have contributed significantly to consumer awareness and motivation of the for-profit sector, as those interests were not strongly involved in the assessment process and the reach of targeted products was rather limited.

[134] Reid et al p.2

[135] The composite rating for achievement of direct outcomes is not a mathematical average of ratings given to individual project outcomes. It is an overall, informed and independent judgment of the evaluation criterion by the Evaluation Team, taking into account the relative importance of the sub-criteria in relation to the overall project objectives and implementation context.

1.16 Sustainability and replication

182. There is strong internal and external political support for UNEP to continue conducting global integrated environmental assessments. Senior UNEP managers and some members of the High Level Intergovernmental Advisory Panel were critical in the effort to secure GEO-5 a place in the targeted global deliberations. Recognizing the need to continue keeping the global environment under review and the value of the UNEP-led GEO process in this regard, the Rio+20 Outcome Document "The future we want" adopted by the United Nations General Assembly on 27 July 2012 (Resolution A/RES/66/288) invited in its paragraph 89 "the Assembly, at its sixty seventh session, to adopt a resolution strengthening and upgrading the United Nations Environment Programme in the following manner: […] (d) Promote a strong science-policy interface, building on existing international instruments, assessments, panels and information networks, including the Global Environment Outlook, as one of the processes aimed at bringing together information and assessment to support informed decision-making; […]". In its paragraph 90, the Outcome Document stressed "the need for the continuation of a regular review of the state of the Earth's changing environment and its impact on human well-being," and in this regard welcomed "such initiatives as the Global Environment Outlook process aimed at bringing together environmental information and assessments and building national and regional capacity to support informed decision-making."

183. The subsequent General Assembly resolution 67/213 on strengthening UNEP reiterated "the continuing need for the United Nations Environment Programme to conduct up-to-date, comprehensive, scientifically credible and policy-relevant global environment assessments, in close consultation with Member States, in order to support decision-making processes at all levels, and in this regard takes note of the fifth report in the Global Environment Outlook series and its related summary for policymakers, and stresses the need to enhance the policy relevance of the Outlook by, inter alia, identifying policy options to speed up the achievement of the internationally agreed goals and to inform global and regional processes and meetings where progress towards the agreed goals will be discussed".

184. Supported by the mention of GEO in the Rio+20 Outcome Document and the consecutive UNGA resolution 67/213, the organization has managed to secure UN Regular Budget funding for roughly 20 percent of the total estimated cost of future GEOs. This contributes significantly to the financial sustainability of the GEO flagship in UNEP.

185. GEO-5 demonstrates that UNEP is able to deliver a credible GEO that successfully achieves the priority contributions to global environmental policy and decisions in a relatively rapid timeframe and with constrained budgets. This placed considerable strain on DEWA staff and managers and is potentially not a sustainable approach. One way to address this is for contributions from a broader UNEP base.

186. A GEO is a large (and growing, both in scope and complexity) investment that, over time, needs to be considered against the benefits. Some benefits do not appear to diminish even as the GEO becomes dated, for instance older GEOs are still frequently downloaded and referenced. However, as environmental and sustainable development issues are pushed to the fore through the SDGs and more generally, there could be a need for GEO approaches that are applicable across widely differing scales and temporal periods. It is difficult to envision how this could be sustained with the current approach to GEO with a large effort every few years to provide an assessment, or with similar credibility approaches. It suggests that a more updateable approach would lengthen the shelf life of the benefit stream. It would also reduce the need to redo all sectors every time and at the same time which would fit more readily into annual budget and project planning and reduce the lumpiness of demands on staff and managers caused by the current episodic approach. It could also enable GEO to address emerging issues in a more timely manner – whether a newly emerging topic such as electronic waste or contaminants in drinking water, or newly emerging geographies of importance, or important emerging decision opportunities. This new setting can significantly alter how GEAs are used at different scales. The existing approach to GEO could prove very quickly

dated given these changes. This is illustrated by comments from several respondents in the author and reviewer survey[136].

- *Do we need a GEO6? Or, should UNEP re-invent a better way to transmit knowledge? Is GEO duplicating other assessments?*
- *GEO's are chunky pieces of work. A lot of time and effort is put into gathering experts from across the world to draft chapters, but relatively little effort is placed on involving policy makers into the assessment in the first place. The GEO process takes more than a year and chapters can quickly become outdated. I guess this is why UNEP live has been launched.*
- *Think of WIKIPEDIA how it inspired people to contribute.*
- *The GEO process should be more geared to helping member states tackle environment problems rather than just informing what the outlook is.*
- *I think it would be better to focus more; to be useful for a wide audience, it must be relevant to a national audience. It could provide a benchmark against which countries can compare themselves to.*
- *A different approach is UNEP's green economy report more clearly written with national policy makers in mind -- it identifies benefits and options that national actors can take.*
- *I look forward to UNEP Live to understand how all the important work of GEOs can be translated quicker into actionable knowledge in the hands of policy makers and decisions makers. i.e. shorten the science-policy interface.*
- *The global T21 model used by UNEP in the Green Economy Report and mentioned in GEO-5 should be used more extensively in GEO-6 to more clearly analyse the environmental issues to be addressed and illustrate how policies work across all sectors.*

187. The rating of moderately likely for sustainability reflects the strong internal and external political support and a more secure budget for future GEOs, but also the need to adapt the overall approach of conducting GEOs to better meet environmental information and analysis requirements at widely differing scales and temporal periods, to match the changing profile of environmental issues, in recognition of the connectivity of sustainable development and the environment, and in light of increased technical capacities for data management, analysis and dissemination.

Evaluation Rating: Moderately Likely

1.17 Efficiency

188. GEO-5 was implemented to inform governments and other stakeholders on the state of the environment. GEO-5 used contemporary approaches to a GEA as well as some innovative efforts to assess performance on internationally accepted environmental goals. The approach adopted by GEO-5 brought together a wide range and number of partners across disciplines and nationalities/regional representation to deliver the key products.

189. The GEO-5 process was undertaken within a limited time frame (27 months between the Intergovernmental and Multi-stakeholder consultation and the launch of the main report in June 2012) yet was able to provide the first key products – a negotiated and agreed SPM and the main report – in time for the main, very important and targeted venues for use of GEO-5 at global levels. Translations of the main document in Spanish, Russian and Chinese and some important side-products (GEOs for Local Government, Youth and Business) were delivered within one year after the launch of the main report in English.

[136] Selected comments from Q65 *"Do you have any additional comments?"*. The comments are illustrative and should not be considered representative.

190. GEO-5 experienced a shortfall in funding of about 21 percent as discussed in section 3.6 of this report, however the GEO-5 team was able to make some considerable adjustments, mobilise additional resources and maximize the limited resources available to enable the successful and timely production of the GEO-5 report and SPM.

191. Table 13 below shows where the main budget reductions were made as roughly estimated by the GEO-5 team. The main budget cuts were made on the Environmental Data Explorer which was not maintained or updated with GEO-5 project funding; project operations costs which were largely absorbed by UNEP/DEWA; the Data and Indicators Working Group which met only once and did not contribute additional data to the chapter groups; capacity building which was delivered only through the Fellowship Programme relying entirely on in-kind contributions; and translations of the main report in Chinese (funded by a Chinese foundation), Spanish (funded by the Inter-American Development Bank), French and Arabic (which were not done).

Table 13. Main budget reductions in the GEO-5 project

Output	**Planned activity** ***Real implementation status***	**Original budget**	**Expenditures***
Output A: GEO-5 is a legitimate process that involves a diverse range of stakeholders and partners in the design and conduct of the assessment.			
Activities on which savings were made	3) Develop tailor made Integrated Environmental Assessment training module for GEO-5 to include a new module for Policy Analyses *Not conducted*	200,000	0
	4) Design and implement a fellowship Programme that encourages the participation of young scientists *At least 20 Fellows participated in GEO-5 and were adequately coached using in-kind contributions from partner research and academic institutions.*	100,000	0
	7) Operations costs (equipment, reporting, staff travel, communications, M&E) to ensure smooth functioning of the process and on-going networking and communication with stakeholders *Some reductions on staff travel, practically no monitoring, no equipment purchases, and use of free or very cheap communication means (email, Skype etc.). Also heavy reliance on in-kind contributions from other ongoing projects in UNEP and partners.*	532,000	150,000
	9) Consultant support for regional consultations and capacity building *Capacity building element abandoned.*	200,000	100,000
Total Output A**		3,392,000	2,910,000
Output B: GEO-5 Report is scientifically credible			
Activities on which savings were made	11) Set-up a Data and Indicators working group. *Only one meeting held and very little further engagement of working group members.*	500,000	70,000
	12) Functioning and maintenance of the global and regional GEO Data Portals (data coordination with UN agencies & key partners; networking, travel, update and add data sets) *Abandoned.*	800,000	0
Total Output B**		1,410,000	180,000
Output C: GEO-5 and its Summary for Policy Makers is policy-relevant to the specified target audience			
Activities on	None	0	0

which savings were made			
Total Output C**		710,000	710,000
Output D: GEO-5 is effectively communicated to the specified target audiences			
Activities on which savings were made	22) Translation of the main report in French, Spanish, Chines and Arabic *Translations were done in Russian, Chinese and Spanish. Translations in Arabic and French were not done.*	960,000	720,000
Terminal Evaluation		0	50,000
Total Output D excluding project activities not related to GEO-5 assessment***		2,070,000	1,880,000
Estimation error****			293,366
GEO-5 project total excluding project activities not related to GEO-5 assessment***		7,582,000	5,973,366

*) Rough estimates as no detailed information on expenditure per project activity is available
**) This is the total estimated cost for the output, comprising all activities funded under the output including those on which no savings were made that are not listed in the table. The total therefore is higher than the sum of the cost of activities on which savings were made presented in the table.
***) UNEP Live, GEO-SIDS, Chemicals chapter in UNEP Year Book 2013, UNEP Year Book 2014
****) The estimation error is the difference between the total estimated expenditure on each Output and the total funds mobilised by the GEO-5 project as per the 2014 Project Revision Document. It is most likely due to an over-estimate of budget reductions by the GEO-5 team.
Sources: Project Document, Project 44-P1 (Signed: 13/05/2010), Project 44-P1 Annex: Project Document Supplement (Signed: 28/03/2014) and Email communications with GEO-5 team.

192. Meetings involving many participants and a lot of travel consumed a significant proportion of the budget. While certain high-level meetings with live presence of participants are probably unavoidable, the evaluation believes that more use could have been made of telecommunication tools, in particular for the chapter working group meetings. That said, GEO-5 realised a satisfactory performance against its goals in a constrained time frame and budget leading the evaluation team to rate efficiency as satisfactory.

Evaluation Rating: Satisfactory

1.18 Factors affecting performance

1.18.1 Preparation and readiness

193. A Global Intergovernmental and Multi-stakeholder Consultation meeting was held in March 2010 to set the scope, objectives and process of the GEO-5[137]. The conclusions of the consultation set out in the Final Statement[138] provided a clear and practicable basis for the conduct of the assessment. The GEO-5 project was prepared by DEWA based on the directions provided in the final statement, the UNEP MTS (2010-2013) and experiences and lessons learnt from previous GEOs. Financial resources for the project were majorly sourced from the Environment Fund and co-financing from five countries as further detailed in the financial planning and management section 4.6.5 below. GEO-5 was set to be implemented within 33 months. However, the project was extended twice, in 2012[139] and 2014[140], to complete project activities bringing its total duration to 45 months.

194. A survey of GEO-4 Working Group members was undertaken part way through GEO-4 and was available for planning of GEO-5. The evaluation team notes several findings from the GEO-4 report that are consistent with findings of this evaluation for GEO-5. Among these, some important GEO-4 findings have provided an early warning of sorts on important issues.

[137] GEO-5 Project document - Project 44-P, Pg. 10; Pg. 26;
[138] Global Intergovernmental and Multi-stakeholder Consultation Final Statement - http://www.unep.org/geo/pdfs/geo5/GEO-5_FinalStatement.pdf
[139] Project 44-p1; annex: Project Document Supplement (Signed 31/10/2012)
[140] Project 44-p1; annex: Project Document Supplement (Signed 18/03/2014)

- GEO-4 was highly credible – this was also concluded for the GEO-5.
- More than half of respondents to GEO-4 survey indicated that their GEO-4 experience led to other collaborations and partnerships – the same was found for GEO-5.
- The GEO process can be significantly improved and strengthened by paying greater attention to the clarity of roles, responsibilities, intended results and target audiences and more efficient cross- organizational management of the process – some progress was made on these aspects by GEO-5 though there is still room for improvement as regards stakeholder participation processes, country ownership and resource management (see the sections 4.6.2 – 4.6.5 below).
- The platform for capacity building created through GEO-4 has a real and potentially higher value and […] is currently recognized or utilized by UNEP – GEO-5 has significantly scaled back on capacity building compared to GEO-4.
- The policy, private sector and development aspects of GEO-4 need special attention and significant strengthening – GEO-5 does not seem to have made the required progress on these aspects.

195. The quality of project design was assessed in detail during the inception phase of the evaluation and detailed findings are presented in Annex 10. The complex nature of the GEO-5 project required the identification of a wide range of contributors, internal and external to UNEP that would be engaged in various ways and levels throughout the process. The identification of stakeholders and partners was well documented in the GEO-5 Project Document, as were processes to engage a cross-section of interests. In addition, initial plans were made to build the capacity of partners and stakeholders in order for them to effectively engage in the process as further detailed in section 4.6.3 below, although few capacity building activities and stakeholder engagements were undertaken. Credibility, legitimacy and policy relevance were three attributes that were given prominence in the GEO-5 project planning in addition to communication and outreach. In fact, these four attributes were very explicit in the four formal outputs of the project. These, among other attributes, are noted in research literature on GEAs to be important for encouraging use of a global assessment (Clark et al, and Mitchell, 2006). Therefore, the overall design of the project was assessed to be appropriate and sufficient.

Evaluation rating: Satisfactory

1.18.2 Project implementation and management

196. The general quality of project implementation was good with appropriate response and adoptive strategies taken to overcome challenges for the GEO-5 project. Implementation of GEO-5 started in May 2010 targeting the production and launch of the two main products, the GEO-5 report[141] and Summary for Policy Makers[142], at the Rio+20 UNCSD held in June 2012. The approximately two year timeframe was very tight and should have started earlier to provide a more realistic time frame for delivery.

197. The project team was able to meet most of their outputs and milestones (albeit with delays on some milestones). A key component on capacity building, Milestone 3 (M3)[143], was, however, not achieved mainly due to funding constraints. The project did not enhance training modules on Integrated Environmental Assessment practice, policy analyses and methodology, which were expected to be made available to all of GEO-5's participants within and outside UNEP as well as to UNEP's broader stakeholder community.

[141] UNEP (2012). Global Environment Outlook 5. Nairobi, UNEP.
[142] UNEP (2012). GEO-5 Summary for Policy Makers, United Nations Environment Programme.
[143] Annex 1: Project milestones and outputs

198. Another Milestone (M10)[144] , which is yet to be attained, was modified into a research project which is a joint initiative between UNEP and the Mercator Research Institute on Global Commons and Climate Change (MCC)[145]. This project, which is currently ongoing, was commissioned to review the overall integrated environmental assessment approach using GEO-5 as a case study. It is further described below.

199. The 2012 and 2014 revisions listed 15 milestones, an increase from the original 10 milestones in order to accommodate new activities related to additional/complementary products produced under the GEO-5 banner. All the activities under M11-M15[146] were completed and products successfully produced.

200. As part of Milestone 2 (M2[147]), guidelines for selection of members of the advisory groups, specialist groups and Chapter groups[148] were developed and applied leading to the selection of a wide range of experts and authors totalling over 600 individuals. Despite funding challenges, key activities and outputs were delivered on time including the production of first and second drafts which were submitted to expert scientific reviewers, governments and stakeholders and for peer review. The functioning and operations of the different groups maintained efficiency which was a credit to the GEO-5 team and the group/panel/board heads who coordinated and in many cases fast tracked the processes to enable timely submissions and the final successful launch of the products. It is important to recognize that staff, authors, reviewers and members of the different panels, boards and working groups dedicated extra hours to enable the process to run relatively on schedule and drive the attainment of milestones and outputs.

201. Contributors to GEO-5 are very positive about management of the undertaking[149]. Reviewers judged management across six different attributes and provided an overall rating of 7.6 on a 0 to 10 scale where 10 represents complete agreement that the functions were provided very well. Perhaps most indicative was an agreement level of 7.9 that the *review process did not present any barriers to my offering constructive comments*. The vast majority (84 percent) of lead and coordinating lead authors indicated that GEO-5 was well managed. They felt that the strengths included very committed, adaptable, and open management staff and approach with support from the organization. Weaknesses included lack of connectivity between chapters and chapter authors, logistics, some leadership weaknesses, problems with direction and guidance and sense that it was a top-down approach. Overall a positive appreciation of management of the GEO-5 but not uncritical.

202. The GEO-5 team initiated the production of other specialized products, capitalizing on opportunities and collaborating with non-traditional stakeholders to produce the GEO for Business and GEO for Local Governments. This was a clear example of adaptive management, maximizing on opportunities that arose in the implementation process, which can be credited to the GEO-5 team. However, the need to take on additional requests for publications and participation to events put additional strain on already limited financial and human resources.

203. The GEO-5 team is currently collaborating with the Mercator Research Institute on Global Commons and Climate Change (MCC) on a joint research initiative: *Four decades of GEAs: Reflecting on past experiences to inform future choices*. The study, which uses the GEO series as an exploratory case study, provides a retrospective analysis of the global environmental assessment landscape and the changing character, orientation and dominant focus of contemporary GEAs. More specifically, the research provides an overarching conceptual framework for analysing and evaluating GEA objectives, means and consequences embedded in their wider societal context; advances perspectives on the types of impacts that can reasonably be expected from GEAs;

[144] M10 - GEO-5 Influence/Impact Study implemented once the GEO-5 assessment has been undertaken in order to measure the impact of the GEO-5 process and products
[145] http://www.mcc-berlin.net/en/research/cooperation/unep.html
[146] Refer to annex 1 for list of milestones
[147] Guidelines for the selection of experts are available and applied
[148] GEO-5 Expert Selection process - http://www.unep.org/geo/pdfs/GEO5_Experts_select_process.pdf
[149] Q41: "*How well was the GEO-5 project managed by UNEP?*" Q42: "*What were the strong points and weak points of the management of GEO-5 by UNEP?*" Q23 (reviewers): "*Please rate the extent to which you agree with the following statements about the review process and its management*."

considers options for enhancing policy assessments within GEAs; analyses different general approaches in GEAs for responding to divergent viewpoints and better understanding the conditions under which they can be effective; and considers promises and challenges of stakeholder engagement.

204. Considering the deficit in human and financial resources, the team maintained a high quality of implementation of the GEO-5 project, executing the GEO process including organizing and facilitating multiple authors, boards, working groups and panels to produce and deliver multiple products, was commendable.

Evaluation rating: Satisfactory

1.18.3 Stakeholder participation and public awareness

205. Due to the complex nature of the project, GEO-5 involved a large number of contributors including governments, international organisations, NGOs, Multilateral Environmental Agreement Secretariats, scientific and policy institutes, universities, UN Agencies and numerous individual experts among others. This diversity and range in participants/partners in the process and target audience was both an opportunity and a challenge for GEO-5. Only a limited range of interests were directly involved in most GEO-5 functions including authors and reviewers and the advisory groups and panels; GEO-5 participants were largely drawn from science (including social science) and research interests and from government and intergovernmental interests. The information is presented above in section 4.2.2 Legitimacy where the evaluation observed that this contrasts with the broader stakeholder involvement in other areas of UNEP and suggested by the research on use of GEAs.

206. For previous GEOs UNEP Collaborating Centres formed the core of the partnerships and content development in the GEO process, integrating regional input through these centres and creating a combined top-down integrated assessment with bottom-up environmental reporting[150]. GEO-5 departed from this, working more with individual experts from governments, partner institutions, the scientific community, and, to a limited extent, the for-profit sector across the regions. GEO-5 seemed to lack individuals or organisations that could span the boundaries between the assessment products and processes and potential applications at national/(sub-)regional levels.

207. GEO-5 experts were selected through stakeholder and government nomination processes[151] through a call made of the GEO-5 website (nomination portal). Nominated experts were then screened and selected based on criteria matched against qualification, experience and relevance. This process resulted in over 600 experts selected to take part in the GEO process either under different working groups including: the advisory, specialist, chapter or regional (i.e. region-specific experts to provide information on the region specific policy analysis). Among these experts, GEO Fellows were recruited to take part in the process and supported by their host institutions as a contribution to the GEO process and to build the capacity of upcoming scientists and experts.

208. The project also set to maximize the capacities available within the UNEP structures allocating roles to the different divisions as appropriate. UNEP's regional offices were involved through making recommendations for selecting regional scientific and policy partners and identifying key relevant partners to provide region specific policy analyses. The regions also contributed to the development of summaries that were targeted region-specific publications. However, in the implementation of the project, Divisions and Regional offices contribution was limited mainly due to funding constraints.

209. Non-traditional stakeholders/sectors were also targeted in the GEO-5 project through opportunistic collaborations which resulted in the production of additional publications such as the *GEO for Local Government* and *GEO for Business* and *GEO for youth*, which essentially captured a unique audience for GEO. The evaluation noted, however, that preparation of these three additional publications did not reflect contemporary practice in achieving use and influence as incorporated in

[150] GEO-5 Project document - Project 44-P1, Pg. 5
[151] GEO-5 Expert Selection process - http://www.unep.org/geo/pdfs/GEO5_Experts_select_process.pdf

the ToC. While the evaluation did not systematically assess participation of non-traditional stakeholders in the main GEO-5 work, it noted for example that none of the polar experts were drawn from Northern Peoples organisations seeming to miss an opportunity to improve the legitimacy and salience for polar issues and to bring traditional knowledge into the process. The evaluation also noted with concern that gender differences were inadequately addressed in GEO-5.

210. Capacity building of stakeholders, especially developing countries, was to be an important component of the project in order to boost capacity of governments to contribute to data and analysis and promote use. This was weakly attained in the project and mainly through actual participation in the process and not the intended training modules as planned. However, the evaluation observed potentially important capacity gains from participation in GEO-5, for almost half of the participants this was their first GEA experience, there were networking gains leading to follow-on collaborations and the Fellows gained value experience and connections (see 4.2.4 Capacity and social capital building).

211. The GEO-5 website was also a key tool used as a conduit for communication to stakeholders and to the public who could access all the GEO products through the site. Media press releases were also available on the site providing a centralized source of information and reference. The online/ICT tool utilized can therefore be deemed to have been effective and cost efficient tool for GEO-5 and its use should be maximized in subsequent GEOs.

212. It is important to also note that GEO-5 was not pitched to the general public, except through media that picked up the highlights of the report – especially at the Rio+20 conference. This was a missed opportunity to build interest in a people-driven platform such as UNEP Live which is intended to build in part on people's science.

213. It is quite easy to understand that the focus on global use likely contributed to the narrow band of interests found amongst contributors, namely academic/research and multilateral/government. It is harder to understand the absence of serious consideration of important stakeholder interests in the substantive work of the assessment, for example women and environment. And it is even harder to understand why the many pools of high quality science of interests such as Northern Peoples organisations or business and industry were not accorded roles in GEO-5. The evaluation also notes that the important professional gains realised by many participants are unlikely to benefit countries at medium and low levels of development because a large majority of contributors came from countries with high levels of development. GEO-5 missed on too many points on stakeholder engagement and public awareness to warrant a satisfactory rating.

Evaluation rating: Moderately Satisfactory

1.18.4 Country ownership and driven-ness

214. GEO-5 was not targeted at the national level but instead took a global and regional focus - presenting the state and trends of the global environment and a separate section dedicated to regional policy options. In addition, GEO-5 did not only focus on the production of the final products but also on the social knowledge process, which is recognized as best practice for GEAs, creating ownership.

215. Country engagement and ownership of the outcomes was however an important dimension of legitimacy[152] in GEO-5. Specific examples of countries engagement included: (i) countries were involved in the Intergovernmental and Multi-Stakeholder consultation meetings that set the scope, objectives and process of GEO-5; (ii) members of the High Level Intergovernmental Advisory Panel that guided and negotiated the Summary for Policy Makers; (iii) countries involved in developing the Regional Policy Options section of the GEO-5 report based on priorities identified by the countries in the regions - regions and countries were asked to contribute region-specific data, case studies and analysis of environmental challenges and their impacts on human wellbeing and review the feasibility analysis of relevant policy options for their specific region; (iv) countries nominated

[152] Further discussed in section 4.2.2 of this report

experts to the process – based on the criteria provided by the GEO-5 team; (v) countries were given two separate opportunities to review the drafts of the GEO report (draft 1 in June 2011 and draft 2 in October 2011).

216. The Summary for Policy Makers was a targeted product for decision makers at global, regional and national level. This document was negotiated by government representatives who agreed on priorities and options for policy action. The final agreed document, available in English, French, Spanish, Russian, Chinese and Arabic & Korean, was endorsed by 53 governments in Korea in February 2012.

217. GEO for Local government, a specialized product that was done in conjunction with ICLEI, was targeted at national and sub-national government levels. GEO-5 also targeted specific audiences (youth, business etc.) which could potentially play a major role in ownership at country and other levels.

218. Weak participation at national and regional levels was captured as a risk in the Project Document[153]. GEO-5 intended to build capacity of stakeholders including those at national level (especially from developing nations) in order to boost capacity to use and apply the assessment knowledge and to support national decision making, which would have boosted country ownership of the assessment. However, this component of the GEO-5 process was weakly executed, which is mainly attributed to funding deficits.

Evaluation rating: Moderately Satisfactory

1.18.5 Financial planning and management

219. As the high level preparatory meeting (the Global Intergovernmental and Multi-stakeholder Consultation) was held in March 2010 before the Project Document was approved in UNEP, it was largely funded with left-over funds held by UNEP/DEWA. This meeting set rolling the GEO-5 project implementation with the project actually commencing in May 2010. The GEO-5 project was designed with a total estimated cost of US$9,288,600 of which no funding was secured at project approval. The GEO-5 team made significant efforts to mobilise funding for the project, and despite the absence of a well-designed and coordinated resource mobilisation strategy, they managed to mobilize US$7,032,600 of which US$5,973,366 could be allocated to the four original components/outputs of the project – about 21 percent short of the initially approved budget (see 3.6 Project financing). As explained above under section 4.5 Efficiency, over US$1.6 million in savings and budget cuts were made by reducing operation costs and the scope of certain project activities, by relying heavily on in-kind contributions, and by abandoning certain activities altogether.

220. The receipt of funds by the project was frequently delayed due to internal administrative and other procedures, unpredictable and gradual resource mobilisation and slow availability of funds from the UNEP Environment Fund and some donors, causing challenges to the implementation process. The delayed funding resulted, for example, in late recruitment of project and support staff. According to the GEO-5 team, these delays did not have significant impact on milestone delivery. However, as funding became only gradually available, true financial planning in the medium and long term was impossible and expenditures were decided on the basis of immediate needs and current fund availabilities.

221. Financial reporting for the project was done through the UN Secretariat-wide Integrated Management Information System (IMIS), with limited financial information also provided in UNEP's Programme Information Management System (PIMS). No independent external audits were undertaken for the GEO-5 project. Financial reports (only due at the end of the project) have not been prepared as the project was extended to December 2014[154]. Despite numerous requests, the evaluation team has been unable to obtain accurate information on actual expenditures of the project for each activity or output. Project expenditures were recorded in IMIS without information on the output or activity they are linked to. The GEO-5 team attempted to keep track of spending for each

[153] GEO-5 Project document - Project 44-P1, Pg. 19;
[154] Project 44-p1; annex: Project Document Supplement (Signed 18/03/2014)

project activity using its own tool (e.g. an Excel sheet), but those did not provide cumulative activity or output-based expenditure information over the project lifetime either. The evaluation recognises that it would be a very daunting task at the end of the project to link from memory the several hundreds of expenditures recorded in IMIS with specific project activities and outputs, even with the help of the Excel tool used by the project team. Up to now, UNEP does not provide guidance or tools to project managers on how to keep activity or output-based expenditure records.

222. The challenges with financial planning and the absence of cumulative activity or output-based record keeping made financial oversight and steering of project nearly impossible. In fact, the project did not have a Steering Committee to approve periodic works plan and budget or verify periodic financial reports.

Evaluation rating: Moderately Unsatisfactory

1.18.6 Supervision, guidance and technical backstopping

223. Clear structures and oversight arrangements were established for GEO-5 with a governance model depicting reporting and responsibility lines across the UNEP divisions and with the various working groups. DEWA was the division responsible for implementing the GEO-5 project with a GEO-5 Head - who were supervised by UNEP Senior management – and a GEO-5 team established to coordinate the process. In addition to the GEO-5 Head and team, various advisory groups/boards were tasked with certain supervisory activities. These resulted in multiple supervisory levels ranging from UNEP management to the Boards and Panels set up to provide guidance and technical backstopping to the process. According to the GEO team this set-up was not without its challenges, but made sense for achieving a high level of credibility and legitimacy of the assessment process.

224. The Coordinating Lead Authors (CLAs) were charged with drafting and supervising the Lead authors and contributing authors in the content development of chapters. Each chapter had up to four CLAs to coordinate the authors, contributions and drafting of the chapters. Chapter Coordinators (mostly UNEP staff) provided backstopping, guidance to the process and in many cases contributed content to the chapters. Oversight for the regional chapters was provided by the UNEP/DEWA regional coordinators who were also the regional Chapter Coordinators. Several contributing lead authors and lead authors commented positively about the quality of UNEP backstopping, for example one said “When required, more senior staff stepped up to take the reins”.

225. The GEO-5 draft underwent two rounds of external peer review. The first review was undertaken by various stakeholders including government, GEO-5 Collaborating Centres, UNEP scientists and individual experts. After the second draft was completed, a second peer review was performed by government and over 70 expert reviewers coordinated by the Earth System Science Partnership[155]. In addition, each Chapter was reviewed by a principal scientific reviewer together with 2-3 supporting science reviewers. The reviews were undertaken within the intended period and were useful in informing the final drafting of the GEO-5 report.

226. The Science and Policy Advisory Board, chaired by UNEP Chief Scientist and comprised of world leading experts, undertook mid-term and terminal reviews to assess the scientific credibility and policy relevance and ensure that the scope, objectivity and process of GEO-5 were met. They also provided technical guidance to the authors and team during the chapter content development. The High Level Intergovernmental Advisory Panel discussed and provided guidance on the Summary for Policy Makers. 53 countries later endorsed the Summary for Policy Makers.

227. The multiple reporting, guidance and supervisory levels were complex and inter-twined in nature. However, they were very useful in driving accountability, quality and relevance of content and creating a credible process.

Evaluation rating: Satisfactory

[155] http://www.diversitas-international.org/activities/essp-1

1.18.7 Monitoring and evaluation

1.18.7.1M&E design

228. The GEO-5 project set separate monitoring and evaluation plans for the duration of the project. The project monitoring plan was based on ten key project milestones with specific targets, timeframes and responsible parties assigned to each. The log frame of the Project Document further detailed the indicators and means of verification of each milestone. Monitoring of GEO-5 was primarily focused on measuring the attainment of outputs and milestones using quantitative indicators. These indicators were therefore unable to fully contribute to capturing attainment or departure from the expected quality for the outputs or important connectivity between outputs/milestones. Specifically, the performance indicators on policy use were weakly developed and therefore unable to trigger adoptive strategies in the project implementation process, unless actively sought and acted upon by the GEO-5 Head and GEO-5 team. This was a design shortcoming that limited adaptive management of GEO-5.

229. The project scheduled two evaluations in the duration of the project – mid-term and terminal evaluations to be undertaken by the UNEP Evaluation Office (EO)[156] who would develop the evaluation plan in collaboration with DEWA. The terminal evaluation was scheduled to be done in conjunction with the start of the Impact/Influence Study that would detail the level and type of impact the GEO-5 had on the target audiences. This study was planned for completion in late 2012 but was later revised to late 2013[157].

230. GEO-5 would have benefited from a substantive ongoing monitoring and evaluation function. This would have been important given the number of relatively unproven innovations included in GEO-5, for example the effort towards policy relevance, the methods to select environmental goals for review and the consequences of this for the goals of GEO-5, or tracking how GEO-5 was interpreting and addressing the directions provided such as on inclusion of a wide range of stakeholders and sectors. Contemporary evaluation in the form of formative and developmental evaluation has much to offer in these circumstances and could have contributed to key GEO-5 decisions. This is akin to the constructive advice and mid-term and terminal reviews provided by the independent SPAB, but for the entire GEO-5 undertaking.

Evaluation rating: Moderately Satisfactory

1.18.7.2M&E budget and funding

231. A specific budget for M&E activities was not assigned; rather these activities were integrated into the general operation costs totalling US$ 532,000. As the operations budget was significantly reduced, only a minimal amount was available for actual monitoring.

232. The initial budget for the terminal evaluation was US$50,000, later raised to US$63,000. This represents less than one percent of the GEO-5 budget and was not sufficient for the complexity of the undertaking as discussed under the limitations of the evaluation. This compares to a recent benchmark of 3.7 percent of program budgets allocated to evaluation (Twersky and Arbreton, 2014)[158].

Evaluation rating: Moderately Unsatisfactory

1.18.7.3M&E Plan Implementation

233. Monitoring of the project is vital to assess progress against deadline and outputs, monitoring and managing risks and monitoring the financial situation of the project. For GEO-5 the monitoring system was implemented with six-monthly progress reports and reporting in the annual Progress

[156] The evaluations were however not included in the GEO-5 schedule Gantt chart
[157] Project 44-p1; annex: Project Document Supplement (Signed 31/10/2012)
[158] Twersky, Fay and Arbreton, Amy (2014) ; Benchmarks for Spending on Evaluation, William and Flora Hewlett Foundation, p.4

Performance Reports (PPR). The half-yearly progress reports were prepared in the UNEP Programme Information Management System (PIMS) – UNEP's monitoring tool to track progress. These reports are all available. However, they have broad-stoke descriptions on progress and challenges with limited detail. In addition, financial progress/monitoring was hardly reported in PIMS. The PIMS tool could have been more actively utilized to monitor project implementation and to intervene as needed. The limited use can also be attributed to the largely quantitative indicators that were set for the project that limited adaptive management.

234. The milestones of the project were necessary but not sufficient to contribute for the attainment of the outputs of the project which are intended / designed to contribute to/connecting to the higher levels of outcomes and objectives. Monitoring the effectiveness and efficiency of outputs and milestones in the GEO-5 project was, however, limited due to the focus on quantitative indicators and not a combination of quantitative and qualitative indicators.

235. A range of activities were held to evaluate the project. This included the mid-term and final reviews done by the Science and Policy Advisory Board in April 2011[159] and November 2011[160] respectively. The Board provided recommendations for improvements and guidance for authors to strengthen scientific credibility and policy relevance of the draft report in the mid-term review while the final review assessed scientific credibility and policy relevance of the GEO-5 report and assessed whether the scope, objectives and process were met as directed by the Governing Council. This terminal evaluation commissioned by the EO is expected to contribute recommendations and lessons with regards to the implementation of the project.

236. The planned impact/influence study of GEO-5 was not conducted. Instead, the GEO-5 project opted to fund research on GEAs by the Mercator Research Institute on Global Commons and Climate Change, which takes GEO-5 as a case study. The study does not involve an impact assessment of GEO-5, which was therefore not available to this evaluation.

Evaluation rating: Moderately Satisfactory

[159] Report of the Mid-term Evaluation of the GEO-5 Assessment by the Science and Policy Advisory Board, 13-14 April 2011, Nairobi, Kenya
[160] Final Evaluation of the GEO-5 Assessment – summary of Recommendations to the GEO-5 Team by the Science and Policy Advisory Board, 23-25 November 2011, London, UK

Conclusions and recommendations

1.19 Conclusions

237. The GEO-5 assessment is plausibly connected to important global decisions and discussions advancing the position of the environment in global development agendas and strengthening the position of UNEP, hereby satisfactorily achieving the priority goals set by the UNEP Governing Council and UNEP itself. Those goals that were not achieved to a satisfactory level included legitimacy and salience at lower (below-global) scales and capacity building for contributing and using the assessment. While important, these were not central to the main priorities of GEO-5.

238. GEO-5 produced an assessment that aligned with the directions of the GC for a credible assessment that included a scientific analysis of selected environmental challenges and illustrated regional options that have had some success in addressing these challenges. GEO-5 also produced a Summary for Policy Makers (SPM) that was negotiated and endorsed at an intergovernmental meeting and launched in January 2012. The SPM was presented at Rio+20 and UNEP senior management and some members of the GEO-5 High Level Inter-governmental Advisory panel carried the messages of the assessment to delegates and participants. The document *The Future We Want* endorsed by the 66th General Assembly of the United Nations included specific statements (paragraphs 88 and 90) about UNEP as the lead UN organization for the environment and need for continuing scientific assessment such as the Global Environmental Outlooks. Also through the Rio+20 discussions and decisions UNEP was given a role of influence at the Sustainable Development Goals (SDGs) discussions and UNEP and GEO-5 participants are advocating for the messages of GEO-5. In this way, GEO-5 having satisfied the priority direct goals set by the GC has contributed to deliberations and discussions that have strengthened consideration of the environment in very important development agendas and elevated the standing of UNEP in these deliberations and discussions and also more broadly.

239. GEO-5 struggled with the effort to analyse policy options that were drawn from regional experience. While it succeeded in delivering regional policy chapters it appears unlikely that the effort has resulted in lasting methodological gains for this relatively new focus for environmental assessments. Nor have the results found an appreciative audience at national levels. The evaluation recognises that this was a challenging undertaking and suggests that analysis of regionally relevant policy options was a long reach and perhaps unattainable for a top-down process such as this GEO.

240. Global Environmental Assessments (GEAs) must set priorities and, for GEO-5, use and influence at the global level was the priority. To improve prospects of an assessment and policies that resonate across developing regions and nations, a GEA should include regional and national voices that can and do articulate questions that are relevant to developing nations and regions. And it should also engage those who can provide a bridge between the assessment and developing regions and nations. However, an assessment such as GEO-5 has limited budget, time and organisational space and it seems that the necessary prioritization of global contributions meant there was insufficient capacity to also engage regional and national users beyond what was useful for the global priority. It might also have proved more challenging to secure intergovernmental agreement for the resulting assessment. Indeed, it appears that the top-down approach adopted for the global priorities made it unlikely that the assessment could also prove very relevant for regional and national users.

241. Legitimacy, credibility and salience are the attributes that research and practice have shown to be influential in promoting use of GEAs. GEO-5 was structured around these attributes, but gave priority to credibility. Legitimacy and salience were achieved at the global scale through GEO-5 groups such as the High Level Intergovernmental Advisory Panel and the intergovernmental meeting to negotiate and endorse the SPM. The driver of use was fostered through the constitution of these groups and the negotiation processes used by the latter; the role of the full assessment report was to testify, through its existence, that the GEO-5 processes and products were credible. By engaging relevant stakeholders and decision makers in a joint knowledge process along with scientific experts, the assessment was more likely to address questions that were salient to policy

and environmental decisions. Also, the assessment was more likely to be regarded as fair and balanced when there was a reasonable representation from the user settings, most notably national and including an appropriate and sufficiently inclusive range of interests. The GEO-5 was successful in maintaining fidelity to procedures intended to ensure a scientifically credible assessment targeting global use, less successful at including knowledge and salient questions from nations and crosscutting issues that were not well represented in peer reviewed literature. There was a tension between adherence to these credibility protocols and to salience for developing regions and nations and to the ability to draw from their experience for relevant policies. It is possible that for a GEA a selection process that balances credibility with legitimacy and salience would be sufficient. Perhaps if this had been implemented with GEO-5 the assessment might have proved more salient for developing regions and nations, on gender and the environment and more inclusive of interests such as business and civil society and drawn from their experiences addressing environmental issues. However, this might have proved less effective in addressing the priority global goals.

242. GEO-5 is reported to be used at national and at smaller scales. The evaluation expects that GEO-5 achieved a value as a credible stock-taking of the limited success in addressing internationally agreed environmental goals and of worsening environmental conditions and this is proving useful to developing regions and nations. Perhaps given the priority on global uses this is as successful as one should expect. However the evaluation suspects that if good practice boundary spanning functions had been added the assessment and assessment processes might have benefited, and been more salient for developing regions and countries. This would likely have expanded the range of stakeholders contributing to GEO-5 beyond the relatively narrow range of science research and government and intergovernmental interests. While GEO-5 did not provide the capacity building for developing countries as directed by the GC, there were still capacity gains for participants of which a relatively small proportion originate from developing countries. It is notable that GEO-5 was more successful than two comparison GEAs (IPCC AR5 and the Millennium Ecosystem Assessment) at engaging participants from developing countries as contributors.

243. Overall the evaluation judges GEO-5 to have been a success and understands the challenges GEO-5 faced in achieving aspects judged less successful. Considering the high strategic relevance of the project, its satisfactory delivery of outputs and successful achievement of global use, and its satisfactory efficiency, but also its limited contribution to capacity for use of the assessment at national and (sub-) regional scales and challenges in sustaining the current approach for a global integrated environmental assessment, the evaluation rated the GEO-5 project overall satisfactory.

Table 14. Summary of evaluation ratings by criterion

Strategic relevance	Highly Satisfactory
Achievement of outputs	Satisfactory
Credibility	Highly Satisfactory
Legitimacy	Satisfactory
Salience	Satisfactory
Capacity building	Moderately Unsatisfactory
Timeliness	Highly Satisfactory
Communication	Highly Satisfactory
Effectiveness: Attainment of objectives and planned results	Satisfactory
Achievement of direct outcomes (as per the Theory of Change)	Satisfactory
Capacity gains from GEO-5	Moderately Satisfactory
GEO-5 assessments used for environmental decision making on global goals and agreements	Satisfactory
GEO-5 assessments are used for environmental decision making at national, (sub-)regional and sectoral levels	Satisfactory
Use of GEO-5 within UNEP for strategic planning	Not rated
Use of GEO-5 in research and academia	Not rated
Likelihood of impact	Not Rated
Sustainability and replication	Moderately Likely

Efficiency	Satisfactory
Preparation and readiness	Satisfactory
Project implementation and management	Satisfactory
Stakeholder participation and public awareness	Moderately Satisfactory
Country ownership and driven-ness	Moderately Satisfactory
Financial planning and management	Moderately Unsatisfactory
Supervision, guidance and technical backstopping	Satisfactory
Monitoring and evaluation	Moderately Satisfactory
Overall rating for the project	**Satisfactory**

244. When setting goals for future GEOs consideration should be given to the possibility that there can be inherent tensions in achieving use at different scales and clear and non-contradictory priorities are important. GEO processes need to be adapted towards the priority scales of use. As awareness of the urgency of environmental challenges continues to increase along with knowledge of the essential connectivity of the environment to sustainable development, it is possible that one adaptation in GEO processes can be in the priority given to existing procedures to ensure credibility. For example adopting procedures that continue to ensure credibility but are more inclusive of the knowledge and experiences of developing countries would enhance prospects for an assessment to be relevant for developing regions and nations. New forms of observing environmental conditions and effects are emerging and credibility protocols need to adapt to incorporate these. Likewise a future GEO should consider selecting contributors who will raise questions salient to development, to gender and to a wider range of interests complimenting the necessary science capacity and improving prospects for a more relevant assessment. A future GEO seeking to inform policy and environmental decisions for developing regions and nations will need to achieve a different balance across legitimacy, credibility and salience and would benefit from monitoring and evaluation inputs addressing all three attributes, not just credibility as with GEO-5.

245. The recently approved UNEP-Live and GEO-6 Project Documents appear to mirror many of the concerns of the evaluation with sustainability of the existing GEO approach, with the possibility of responding to the knowledge and policy relevant needs of multiple scales, with the need to incorporate grey and traditional knowledge into the assessment to respond to these needs and the challenge this presents for a scientific assessment based in an environmental organization, and with developing an assessment process that would incorporate a much broader range of potential users and stakeholders at multiple scales.

1.20 Recommendations

246. The primary objective of GEO-5, as stated in the approved GEO-5 Project Document, was to conduct a legitimate and scientifically credible global integrated environmental assessment that results in policy relevant options that help inform decision-making at multiple scales, most importantly global and national. At the core of the evaluation's understanding of use of GEAs is a social knowledge process involving knowledge experts, decision makers and other key stakeholders working together to frame, generate and disseminate the knowledge. The social knowledge *process* is the driver; knowledge *products* such as a GEO-5 report are less important for improving prospects that an assessment will be used.

247. Yet, GEO-5, like most GEAs, prioritised credibility and hereby largely managed to engage experts and global decision makers in the social knowledge process, at the cost of engaging with

nationally more influential stakeholders making, in effect, the quality of the knowledge products the driver of use at those lower scales. GEO-5 itself is a testimony to the importance of the knowledge process since the final GEO-5 report was not itself part of the global deliberations at Rio+20 – the GEO-5 product that was part of the process was the Summary for Policy Makers and that did involve decision makers and key stakeholders in its production through the High Level Intergovernmental Advisory Panel that negotiated and endorsed the report. The challenge was (and is) to achieve legitimacy and salience at smaller scales.

248. Smaller scale effectively means more seats at the GEA table – there are many countries and other interests that could be part of a representative knowledge process – but finding procedural room at the table can be overwhelming. Fortunately it is not needed. Individuals and organisations able to span the boundary between the assessment (processes and products) and potential users provide a workable mechanism so long as they function transparently and collaborate with those whose interest they are representing.

249. The world is also changing in ways that are important for a GEA. One is that increasing awareness about and concern for the environment requires different knowledge, another is that there are technological means to address the logistical issue of a crowded table. In effect we have moved from a setting where the top need was to *prove the case* to a new setting where there is an urgent need for *knowledge that points the way forward* for the very many and very diverse places where actions need to be taken. This is not saying that globally-focused assessments are no longer appropriate, but assessments need to adapt to more usefully contribute at national and regional, and even sub-national scales. These are the scales where mitigation and adaptation decisions are made and increasingly those decisions are around what to do, not about whether to do something. Indeed, in many cases global and even regional scales will prove too large to capture successful experiences and the important success-influencing factors that are the key to useful advice and guidance. This requires a bottom-up approach to the essential policy contributions from GEO.

250. The Theory of Change for GEAs is still relevant, and indeed GEO-5 has validated that model, but in the future it will be important to increase the weight of legitimacy and salience relative to credibility by ensuring that key interests are part of the assessment process including gender, sustainable development, and the full range of Major Groups and Stakeholders. The logistical issues will be challenging, but with contemporary technology and boundary spanning approaches the next GEO could achieve a high level of salience and legitimacy for all affected interests and still be regarded as credible by them and other key stakeholders. It is also necessary to provide new ways to undertake some of the thorny data issues for an assessment. In particular, we need to think about credibility in new ways beyond peer reviewed standards. Standards are needed to ensure sufficient credibility for policy-focused decisions at much smaller scales and using grey and traditional sources. This is an urgent undertaking because those who are most directly affected by environmental problems are women and less developed nations and those who affect the environment the most are private entrepreneurs – and these voices are far less likely to be heard in the scientific information and analysis that is currently admitted to a GEA.

251. Recommendation 1: The utility of future GEOs will be enhanced by reaching lower scales and addressing stakeholder interests directly affected by/affecting environmental change. Therefore, future GEOs need to:

- *a) Find ways to engage in the knowledge process an appropriate range of contributors who represent the interests who are affected by or at the origin of environmental problems;*
- *b) Ensure that the assessment is salient at these smaller scales by addressing questions that are relevant to these interests;*
- *c) Ensure that the questions can be addressed at these scales (e.g. national) and for these diverse interests (e.g. women, SMEs) by finding ways to more appropriately balance scientific credibility with other information sources and assessments. This will require better knowledge of how to achieve appropriate and transparent quality*

in assessments and will require going beyond heavy reliance on established approaches to scientific credibility;

d) Consider a more continuous assessment process with periodic summaries of information and analysis at relevant geographic scales and new "chapters" addressing emerging issues, when there are ripe opportunities for use of the assessment for environmental decision making. This would require a different platform for a more adaptable GEO undertaking; and

e) Make full use of new technologies for users, even at the most local levels, to access the assessment without having to go through a printed or online report. At the same time, explore how boundary spanning approaches can provide workable bridges from the assessment to users.

252. A shift in approach as recommended by this evaluation and by the proposal documents for GEO-6 and UNEP-Live is not a trivial undertaking and requires sound planning, appropriate resources and full use of accumulated performance management knowledge. The evaluation noted with concern the output focus for planning, implementing and monitoring GEO-5, absence of a plausible program logic and insufficient financial planning and management. These shortcomings likely did not seriously undermine GEO-5 which applied largely approaches previously used by UNEP for earlier GEOs (with the exception of the policy work), and in any case the tight timelines meant that GEO-5 had to mobilize and execute without sufficient time for planning.

253. Recommendation 2: With the shifting needs and new challenges appropriate planning and management will be critically important to develop and implement a plausible outcome based approach and use that to monitor progress and identify improvements and problems. The next GEOs will need to be much more adaptive than the previous ones, and prospects for success will be affected by the quality of planning, resourcing and on results focused management. Therefore:

a) An adapted GEO approach moving onto challenging territories will absolutely require an outcome-focused planning framework including a plausible program theory. One can read similar recommendations in many evaluations; the persistent lack of attention to sound intervention planning processes clearly indicates that senior management attention will be required. Almost always planning timelines and resources are in short supply; this is something that is within the reach of senior managers to address.

b) Formative and developmental monitoring and evaluation can contribute to an effective learning and improvement process from more innovative and ground breaking future approaches which by their nature will likely entail considerable ambiguity and uncertainty.

254. GEO-5 represented a positive departure from previous GEOs by including policy options for addressing observed environmental state and trends thereby pointing to potential solutions and approaches. However, the global focus of GEO-5 and the importance of ensuring credibility to potential global audiences affected the approach. To be more useful at smaller scales and address important issues such as gender, future GEOs will need to develop methods that emphasise legitimacy and salience more strongly and use grey literature and traditional knowledge more frequently. Following the GEA Theory of Change discussed in the evaluation, policy assessment should be conducted as a joint knowledge process with the interests involved. Clearly, national and regional governmental interests should be involved as well as the other stakeholders who can influence the policy design and outcomes and who are affected by the conditions that the policies address. The UNEP Major Groups and Stakeholders can serve as a proxy for these interests. With a large number of potential points of policy activity, joint knowledge production becomes a significant challenge.

255. Recommendation 3: Future GEOs should continue to address policy but using improved approaches and resulting in information that is relevant at different scales and for major issues. It is recommended that:

a) Policy assessment and development should move closer to the points of use and scales of use. This suggests that where external experts are needed or helpful, that their role includes working with key interests and local experts to assess and develop policies and build local capacities as part of the process. A future GEO should go beyond expert-validated policy options and actively seek local and national, sectoral and issue-specific policies and actions;

b) Policy assessment and development should document and share: the conditions that are being addressed, important external and internal factors that could affect success of the policy, costs and expected benefits, and other information that will help others understand the rationale, context and character of policies so that they can consider efficacy of these for their own use. Users should have a decision tree or similar decision tool that will aid them in seeking to match their environmental problems, scale, context, and other matters of importance with proposed policy options;

c) Stronger partnerships should be established with the appropriate organisations to address the challenges of developing the needed policy understanding and to span the boundaries between where policy is analysed and where decisions are made. UNEP Regional Offices and Collaborating Centres could play an important role in this regard. Successful efforts by the for-profit sector should also be included but an appropriate balance needs to be achieved between credibility and confidentiality of information from these organisations, perhaps using public-private intellectual partnership vehicles; and

d) GEO or an associated undertaking such as UNEP Live should develop a trusted and useful mechanism where the knowledge from policy assessment, development and implementation can be collected, stored, discussed and accessed.

256. A GEO targeting use at smaller scales will need to address the capacity of potential users to adapt the methods and findings to their setting, and develop appropriate responses. Capacity is a critical bridge between being interested in doing something, and actually being able to do it, and doing it well. A provider of knowledge such as a GEO that targets use and influence needs to be aware of and contribute to addressing capacity gaps with the user communities.

257. Recommendation 4: Directed efforts to build the capacity of key stakeholders to take an active part in the joint knowledge production process, and to make the best possible use of GEO information and analyses are required at smaller scale points of use. Therefore:

a) Capacity building of stakeholders to contribute to the assessment and to make meaningful use of assessment findings and recommendations should be an explicit objective and component of any future GEO. It should use an appropriate mix of approaches using multiple media and linking theory to practice. This critical capacity building component, in both its dimensions, should never be reduced for time or budget reasons.

b) Capacity building to contribute to the assessment should be targeted as a priority to the expanded range of stakeholders at multiple scales that need to be involved in the assessment process to ensure its legitimacy (e.g. civil society, but also the for-profit sector) and policy relevance (e.g. government advisors in developing countries). Policy analysis should be a main topic of capacity building for assessment contributors.

c) Capacity building to use the assessment should be targeted primarily to environmental decision makers including government policy advisors at multiple scales and the business sector, but should also target the broadcasters of the assessment (e.g. the popular media), ensuring wide-spread, appropriate communication of the most relevant assessment findings and feasible solutions at multiple scales.

258. The ambiguity over funding was not helpful to GEO-5, nor was short-changing the time needed to adequately plan and staff an undertaking on the scale of GEO-5. Future GEOs now have at least 20 percent of funding secured up front which is an important change. Participation of other UNEP Divisions in UNEP was also minimal due to the lack of planning such collaborations and funding constraints.

Recommendation 5: Future GEOs should secure adequate staff and financial resources before the project is initiated and put in place more rigorous financial management and oversight systems.

a) Projects should be planned with a realistic duration and activities should be started on time to reduce time pressures on staff and partners/stakeholders involved in the process.
a) Funding allocation decisions should be made in advance of project implementation to enable the team to do adequate financial planning, start activities on time and meet the set milestones in a timely fashion.
b) Activity/output-based financial records should be kept in the course of the project and periodic activity/output-based financial reporting should be required.
c) An appropriate financial oversight mechanism should be put in place to approve periodic budgets and verify periodic financial reports.
d) A UNEP undertaking of the stature of the GEOs should have access to the most suited UNEP staff for the assessment including from other divisions. Staff time allocation and budgetary implications need to be agreed well in advance between divisions to enable successful interdivisional collaboration.

Annex 1: GEO-5 Project Outputs and Milestones

Expected Accomplishment 4a: *Improved Access by national and international stakeholders to sound science and policy advice for decision-making is improved*	
Output	**Milestone**
Project output A	M1) GEO-5 Intergovernmental and multi-stakeholder consultation organized where the Scope, Objectives, and Process for GEO-5 Report can be finalized and agreed by governmental and other stakeholders M2) Guidelines for the selection of experts are available and applied M3) Tailor made Integrated Environmental Assessment training module for GEO-5 is made available and includes a new module for Policy Analyses
Project output B	M4) Guidelines for ensuring scientific credibility developed and disseminated for use M5) Review editors sign-off after two rounds of scientific peer-review
Project Output C	M6) Final draft of the Summary for Policy Makers completed and available for negotiation at an Intergovernmental consultation M7) An endorsed Summary for Policy Makers is published
Project Output D	M8) Outreach plan developed (will include a schedule of products to be developed, events to be organized, communications to be sent in 2011 and 2012) M9) GEO 5 report published and available in electronic and hard-copy M10) GEO-5 Influence/Impact Study implemented once the GEO-5 assessment has been undertaken in order to measure the impact of the GEO-5 process and products (the Influence/Impact Study Plan is designed in 2010 & will highlight target audiences for GEO-5 and include indicators to measure impact in late 2012)
Revised Milestones (Project Supplement 2012 and 2014)	
Project Output D •	M11) Measuring Progress: Environmental Goals and Gaps; M12) GEO-5 for Local Government; M13) Two technical briefs on Water and Land; M14) GEO for Youth; and M15) GEO for Business. In addition, revision on Output D added activities related to the UNEP Live pilot and the UNEP Year book 2013 that was produced as an anniversary edition for UNEA

Annex 2: Evaluation Questions and Sub-questions

Evaluation Question
1. To what extent was the GEO-5 a legitimate process that involved the appropriate stakeholders (scientists and decision-makers) in the design, conduct, up-scale and use of the assessment?
1a What did key decision makers in GEO-5 think legitimate means and how it contributes to use?
1b How was legitimacy pursued and what difference did it make?
1c What categories of participants and interests in GEO-5 are plausibly connected to use in decisions (policy and other)? What is the distribution of GEO-5 participants across these categories and by time (along the GEO 5 process)?
1d What categories of GEO-5 participants and interests are plausibly connected to up-scale, if any? What is the distribution if needed?
1e What are the causal connections from involvement as a use-participant/interest and actual use in decisions?
2. How well did the project ensure scientific credibility of the report (and its by-products) by following accepted procedures and involving scientific experts, scientific peer reviews and using scientifically credible and authoritative sources?
2a What was the standard that GEO-5 applied to scientific credibility (how would one recognise and distinguish between credible or not credible) and how does this compare to other assessments?
2b How did global, regional, national and other potential users regard this standard as appropriate, fair, useful, and connected to use? To what extent did GEO-5 address these concerns?
2c How did GEO-5 implement this standard and how well did they do?
2d Were credibility efforts of GEO-5 associated with any use of GEO assessment methods at regional, national and local levels?
2e What are the causal connections from credibility to actual use in decisions both directly and contingently with other attributes in the ToC?
2f What sources and types of knowledge was excluded from the assessment by the screen adopted for credibility e.g. indigenous knowledge, grey literature (including on policy) and practitioner knowledge, citizen science and other sources? Who and what interests were excluded from the knowledge process by the screen and what difference did it make?

3. To what extent did the project generate salient (timely and relevant) decision-making options at multiple scales/levels (global, regional and national)[1]?
3a What did key decision makers in GEO-5 think policy relevance means and how it contributes to use?
3b How was policy relevance pursued and what difference did it make?
3c Was GEO 5 capable of proposing relevant policy options for the global and regional scale?
4. Is there any early evidence of GEO-5 influence on decisions? What were the most effective strategies used by the project and what were the key drivers and assumptions required to influence decision-making?
4a What was the conceptual framework connecting the GEO 5 assessment to decisions at global, regional, national, sectorial and community/NGO levels?
4b What were the specific channels, drivers and assumptions of influence to decision-making and how well did they work?
4c Does GEO have an existence value and what difference does it make for UNEP? How is the existence value achieved and maintained?
4d Does GEO 5 provide stakeholders including UNEP with political capital, and how is this deployed to improve environmental decisions?
4e Are there decisions at the national, regional and global levels that have been influenced by the GEO-5 process and products at this stage? To what extent do these decisions reflect the issues and questions addressed by GEO (and within a plausible timeline connection) in general and GEO-5 in particular?
5. How well were the GEO-5 process and products brought to scale to reach all target audiences?
5a What was the strategy/conceptual model of GEO 5 to extend use of the assessment across different scales?
5b How was the strategy/conceptual model realized in GEO 5 e.g. the sector targeted products, participation of varied stakeholders at different stages?
5c What specific strategies were employed to disseminate/communicate the assessment of GEO-5 and how well did it work? How useful was the communication strategy in enabling effective communication in the process and product of GEO-5 and how well did it work?
5d Did the communication strategy contribute to the legitimacy, credibility and policy relevance of GEO-5?
5e How did communication of the assessment contribute to actual use of the assessment for

decision making?
5f Who were the target audiences for the GEO-5 processes and the different resulting products, and were they appropriate?
6. To what extent did the project contribute to establishing the capacity of participants and targeted users to conduct assessments and to formulate policy on various levels?
6a What gaps in the capacity of the GEO team and stakeholders/participants were identified and addressed (e.g. consensus building and evaluation for chapter coordinators and lead authors) and what difference did it make?
6b What specific strategies and activities were adopted/undertaken, and at what stages of the GEO 5 process to build capacity of participants and targeted users?
6c Did the GEO-process specifically increase capacity to utilize the assessment into national, regional and global processes?
6d What were the benefits accruing to GEO 5 participants from their involvement with GEO-5 e.g. social capital, partnerships?
7. Did the GEO-5 recognise and take advantage of opportunities (ripe situations) for use of the assessment findings and policy options?
7a Was the importance of grasping opportunities recognized in the prodoc / statement and/or did these point to specific opportunities? (See prodoc / statement)
7b How did GEO-5 contribute to Rio+20 processes and the "Outcome Document"? (Interviews with UNEP senior managers, survey of SPAB and HLIAP, outcome document). How did this contribute to UNEP and to improved environmental decisions?
7c What specific opportunities in addition to Rio+20 did the GEO 5 (attempt to) take advantage of and how? What were the successes and failures and why was success achieved or not achieved? (Interviews with GEO-team, UNEP senior managers). How did this contribute to UNEP and to improved environmental decisions?
7d To what extent is the general global environmental assessment approach of GEO in general and GEO-5 in particular able to recognise and respond to emerging questions connected to ripe decision opportunities?
8. To what extent and at what stages were chapter authors and other scientific members of GEO-5, decision makers and other key stakeholders at global, regional and national levels involved in a joint knowledge process? (Glean from other questions).
8a Identify objects (intermediate and final products) and functions (meeting opportunities for discussion and cross-fertilisation of reflexion and knowledge) that spanned boundaries between the scientific community and intended users of GEO-5 (Interview GEO-5 team,

interview chapter coordinators and authors, survey of S&PAB and HLIAP)
8b How did GEO 5 and the GEO 5 team provide boundary spanning functions e.g. across science and policy?
8c Is UNEP an appropriate convener for a global environmental assessment?
9. How effectively and efficiently was the overall project planned, coordinated and monitored? What was the performance of the multiple UNEP divisions and partners involved in the project?
9a What were the particular strengths and weaknesses in the design of the project (prodoc, GEO-team interview)
9b How well was the GEO-5 project planned and managed by UNEP? What were the strong points and weak points? Was the monitoring system adequate for management purposes?
9c Were resources (financial and human) available on time and in sufficient quantity (and quality for HR) and when not, how did the project deal with that? Where were savings/sacrifices made?
9d How well did collaboration function between UNEP branches, divisions and regional offices?
9e How well did the partnerships and collaborations function between contributors to chapters, and collaboration within different advisory bodies and working groups?

Annex 3: CPR Member participants to focus group discussion

1. Algeria
2. Austria
3. European Union
4. Finland
5. Germany
6. Indonesia
7. Kenya
8. Norway
9. Oman
10. People's Republic of China
11. South Africa
12. Spain
13. United States of America
14. Zimbabwe

Switzerland – not in attendance but gave comments via email

Annex 4: GEO-5 Member State survey respondents

1. Afghanistan
2. Australia
3. Bhutan
4. Bosnia and Herzegovina
5. Costa Rica
6. Czech Republic
7. Ecuador
8. Gambia
9. Guinea
10. Iraq
11. Somalia
12. Turkey

Annex 5: Evaluation Reference Group (ERG)

Name	Title	Organization
Jacqueline McGlade	Chief Scientist and Acting Director Division of Early Warning and Assessment	UNEP
Majid Shafie Pour	International Affairs Officer	Department of Environment - Islamic Republic of Iran
Ronald Mitchell	Professor at the Department of Political Science	University of Oregon
Susanne Bech	Evaluation Officer	UN-Habitat
Tom Okurut	Executive Director	Uganda National Environment Management Authority (NEMA-Uganda)

Annex 6: Survey methods

Overview

The evaluation undertook three surveys:

- Survey 1 was an online survey directed to all members of the GEO-5 team and all representatives of UNEP regions who were involved in GEO-5.
- Survey 2 was an online survey directed all authors and reviewers contributing to GEO-5
- Survey 3 was an email survey directed to national environment agencies (GEF operational focal points).

Basic information on the surveys is provided in table below.

	Survey 1	**Survey 2**	**Survey 4**
Purpose	Gain additional information about how GEO-5 understood and approached the elements in the Theory of Change	Gain inputs from GEO-5 contributors on a range of topics including demographics, prior GEA experience, UNEP as an appropriate convenor, use of GEO-5, quality of approach and management, capacity of contributors, credibility of GEO-5, comparison to other GEAs, experience as a Fellow, gains in working relationships with other contributors and suggestions for improvements.	Email survey to obtain views on the likelihood of use and influence of GEO-5 at the national level, the main obstacles for use of GEO-5 at the national level, the balance between different types of information sources, and the main strengths and weaknesses of the GEO process and products.
Survey method	Web based survey	Web based survey	Email survey
Potential respondents	11 – (6 from GEO-6 team, 5 from UNEP regions)	408	182
Responses (response rate)	11 (100%)	243 (60%)	12 (7%)

Survey questionnaires

GEO-5 Evaluation Survey 1 (GEO-5 team and UNEP regions)

Before we get too deeply into the evaluation we need to ensure that we adequately understand key attributes of GEO-5. Five attributes were central to the design of GEO-5 and to earlier

GEOs. The attributes are: legitimacy, credibility, policy relevance, capacity building and scaling up. We are interested in how you understood each of these attributes contributed to GEO-5.

1. Legitimacy can be understood as contributing to perceptions of the fairness of the assessment by involving key stakeholders and decision makers in the assessment process.
   Do you regard this as an appropriate description of legitimacy as applied to GEO-5?

   - Yes, fully appropriate (go to 3)
   - Yes, mostly appropriate
   - Yes, but needs modification
   - No

Legitimacy

2. How would you modify the description of legitimacy as *perceptions of fairness and inclusiveness of the assessment by involving key stakeholders and decision makers in the assessment process?*
Open response

3. How would achieving a high level of legitimacy according to the description above (or as modified by you) be expected to contribute to use of an environmental assessment such as GEO-5?
   Open response

4. Which of the following interests are most important to engage in the assessment process to promote the perception of legitimacy of the GEO-5?
   Provide list, select most and second most important (page break)

Credibility

5. Credibility can be understood as the perception that the assessment *appropriately addressed matters of data reliability and is based on appropriate methods, inferential claims, and hypotheses.*

6. Do you regard this as an appropriate description of credibility as applied to GEO5?
   - Yes, fully appropriate
   - Yes, mostly appropriate
   - Yes, but needs modification
   - No
   - DK
7. How would achieving a high level of credibility according to the description above (or as modified by you) be expected to contribute to use of an environmental assessment such as GEO5?

Legitimacy and Credibility

8. We welcome any comments you would like to add regarding legitimacy and credibility in GEO-5.

Policy relevance

In some of the questions that follow we refer to "global" and "national/subregional policies". These are used as a way of distinguishing:

a)"global" policies that could be enacted by international actors such as multilateral organisations (e.g. UNEP) or INGOs or multinational companies and/or a large number of countries with multiregional coverage.

b)"national/subregional" policies that could be enacted at the national or subnational level such as by a national or state, municipal, or regional government, NGO, forprofit company or which can cross national boundaries to coordinate or combine policies of multiple governments or other organisations.

9. Policy relevance can be understood as an assessment that is provides information and analysis relevant to policy decision makers and available at the right time.

Do you regard this as an appropriate description of policy relevance as applied to GEO5?

- o Yes, fully appropriate
- o Yes, mostly appropriate
- o Yes, but needs modification
- o No
- o DK

10. How would you modify the description of *provides information and analysis relevant to policy decision makers and available at the right time?*

11. How would you differentiate what would be considered policy relevant and timely by global and national/subregional policy decision makers?
    - o Relevant _____
    - o Timely _____

12. What were the two main challenges encountered in GEO5 with providing options relevant to national/sub-regional policy?
13. What were the two main challenges encountered in GEO5 with providing options relevant to global policy?
14. We welcome any comments you would like to add regarding the policy relevant focus of GEO5.

Capacity building

15. What were the initial and revised goals of capacity building under GEO5?
    - o Initial _____
    - o Revised _____

16. In hindsight, how might GEO5 have approached capacity building better?

Upscaling and dissemination

17. What was your view of how national/sub-regional policy makers would utilize GEO5 processes and products to stimulate and inform policy?

Priorities

Most endeavours involve compromising on some important ambitions, often due to resource or time constraints, internal or external priorities, or external forces. We would like to learn more about some of the trade-offs in GEO5.

18. Please rate the level of difficulty of integrating sustainable development into a global environmental assessment such as GEO-5 (On a scale of 1-10 - near possible to not difficult at all).
19. Assess the relative potential of the three main attributes of a GEO assessment to stimulate and inform policy at national/subregional levels.
    Assign A Percentage Indicating The Relative Importance Of Each. The Total Must Be 100%.

Credibility	__%
Legitimacy	__%
Salience (relevant and timely)	__%

20. Looking over the next five years, how do you think the GEO5 products and processes are most likely to influence development of policies and practices that will contribute to improved environmental conditions?
21. We welcome any comments you would like to add regarding the policy relevant focus of GEO5.

<u>GEO-5 Evaluation Survey 2 (Authors and Reviewers of the Main GEO-5 Report)</u>

PART A: All (coordinating, lead, contributing authors and chapter reviewers)

Background

1. What is your age?
   - o Under 25 years
   - o 25-30 years
   - o 31-35 years
   - o 36-40 years
   - o 41-45 years
   - o 46-50 years
   - o 51-55 years
   - o 56-60 years
   - o 61-65 years
   - o 66-70 years
   - o 71-75 years
   - o Over 75 years
2. What is the highest degree you have been awarded?
   - o Bachelor
   - o Masters
   - o PhD/Dphil.
   - o Other (Please specify)

3. What is your primary discipline?

Experience with Global Environmental Assessments

4. Were you involved in another Global Environmental Outlook prior to GEO-5?
    - o Yes GEO-4
    - o Yes GEo-3
    - o Yes GEO 2000
    - o Yes GEO-1
    - o No
5. Were you involved in any global environmental assessments other than UNEP GEO prior to your involvement with GEO-5?
    - o Yes
    - o No

Other Global Environmental Assessments

6. What other global environmental assessments were you involved with prior to your involvement with GEO-5? Please List them below.

UNEP as a Convenor

7. Is UNEP an appropriate convener for a global environmental assessment that aims at influencing policies and decisions at different levels?

Appropriate convener to influence <u>global</u> policies and environmental decisions	**Appropriate convener to influence <u>national/sub-regional</u> policies and environmental decisions**
o Very appropriate	o Very appropriate
o Yes, appropriate	o Yes, appropriate
o Somewhat appropriate	o Somewhat appropriate
o Not appropriate	o Not appropriate

8. Is there another organization that would be an appropriate convener for a global environmental outlook?
    - o Yes (specify)
    - o No
9. Do you have any comments on the suitability of UNEP as a convener of a global environmental assessment?

Use or Influence of GEO-5

10. Are you aware of situations where GEO-5 has been used?
    - o Yes – *list in follow-up*
    - o No
11. Please provide information about use of GEO-5 in sufficient detail that the evaluation team can follow-up.

Nationality

12. In what country(s) do you hold citizenship?

13. If you were asked what country you represented as a member of the GEO-5 author team, what country would you reply? (Identify more than one country if appropriate).

PART B: GEO-5 Chapter Coordinators

14. What Chapter(s) did you contribute most to as coordinator, author or reviewer to?
If you worked on more than one chapter select the chapter for which your responsibility was greatest (*e.g. Chapter where you were a lead author chapter over a chapter where your role was as a contributing author).*

	Check if contributing to this Chapter was a major part of your work with GEO-5
Chapter 1 Drivers	
Chapter 2 Atmosphere	
Chapter 3 Land	
Chapter 4 Water	
Chapter 5 Biodiversity	
Chapter 6 Chemicals and Waste	
Chapter 7 An Earth System Perspective	
Chapter 8 Review of Data Needs	
Chapter 9 Africa	
Chapter 10 Asia and the Pacific	
Chapter 11 Europe	
Chapter 12 Latin America and the Caribbean	
Chapter 13 North America	
Chapter 14 West Asia	
Chapter 15 Regional Summary	

15. Please rate the extent to which you agree with the following statements. *(0-10 scale)*
    - We were clear on the approach we would take to review policies and develop policy options?
    - The level of rigor for the policy analysis and options was sufficient that potential users should have string confidence in the work.
16. Were there gaps in the capacity of contributors to the policy sections that affected the quality of the product?
    - Yes (describe with follow-up)
    - No, not that made a difference
17. Do you have comments on the effort to develop policy options or advice for future efforts to do this?

Characteristics of a Successful Global Environmental Assessment

18. What, to you, are the top three distinguishing characteristics of a credible global environmental assessment?
19. How did your Chapter fare against these characteristics? *Greatly exceeded; Exceed; Met; Fell somewhat short; Fell significantly short scale)*
    - Characteristic 1 from previous question

- Characteristic 2 from previous question
- Characteristic 3 from previous question

20. What constraints, if any, did you experience with the Chapter you contributed to with achieving a fully credible assessment?

PART C: GEO-5 Reviewers and Fellows

21. Were you either a Reviewer of Fellow for GEO-5?
    - Reviewer
    - Fellow
    - Neither

Reviewers

22. As you were reviewing the Chapter(s) who did you envision as the targets for the assessment?

Types of user *(list types and other)*	Main target	Second main	Third main
Global users such as multilateral agreements or international organizations			
Regional users such as regional cooperation agreements			
National governments			
National or local civil society organizations			
Academics and students			
Business and industry			
Environmental organisations			
Other (specify)			

23. Please rate the extent to which you agree with the following statements about the review process and its management. *0 to 10 scale with NA*
    - All necessary materials were provided in a timely fashion.
    - All directions were clear.
    - The review process did not present any barriers to my offering constructive comments.
    - The GEO-5 team and authors I dealt with were very well informed about the review process.
    - The review process was fully transparent.
24. Do you feel that working in English constrained the authors?
    - Not at all constrained
    - Somewhat constrained
    - Some important constraints
25. Is there another assessment that you feel would provide a suitable comparison to [Chapter] you reviewed?
    - Yes
    - No

26. What was the other assessment?
27. Please rate your level of agreement with the following statements comparing GEO-5 to the other assessment you identified in the previous question.
    - Does GEO-5 add value
    - Quality
    - Uniqueness of GEO-5
28. In addition to being a reviewer did you also fill any other these roles for GEO5?
    - Coordinating lead author
    - Lead author
    - Chapter Coordinator
    - Contributing author
    - None of the above

Fellows

29. Was the level of support provided by your sponsoring institution fully adequate for you to participate fully in the GEO-5 processes?
    - Fully adequate
    - Some minor limitations
    - Unable to participate in some key elements
30. Do you feel that working in English constrained the authors?
    - Not at all constrained
    - Somewhat constrained
    - Some important constraints
31. What five adjectives would you use to describe your GEO-5 Fellow experience?

32. What would you say that the two key differences that being a GEO-5 Fellow will make in your career?

33. What advice would you provide to UNEP about how the Fellow program could be improved?

34. Were you also a contributing author to GEO-5?

35. What was your primary role in GEO-5?

    - Coordinating lead author
    - Lead author
    - Chapter Coordinator
    - Contributing author
    - None of the above

Part D: Chapter Coordinators, Coordinating Lead and Load Authors, All Chapters

36. How would you rate the knowledge of the other authors about the topic of your Chapter ? *Use 100% scale where 0 = marginal capacity in the area, 10= highly knowledgeable and a leader in the area*

- Contributing authors
- Coordinating lead authors and lead authors
- Reviewers

37. How would you rate the capacity to collaborate of the other authors in your Chapter ? *Use 100% scale where 0 = unable to collaborate, 10= highly effective collaborator*
    - Contributing authors
    - Coordinating lead authors and lead authors
    - Reviewers
38. How would you rate the communication skills of the other authors in your Chapter ? *Use 100% scale where 0 = extremely poor communicator, 10= highly effective communicator*
    - Contributing authors
    - Coordinating lead authors and lead authors
    - Reviewers
39. Were there gaps in the capacity of authors that affected the quality of the chapter?
    - Yes (describe with follow-up)
    - No, not at all or nothing that made a difference
40. Approximately what percentage of the contributing authors were included primarily with the ambition that being part of the GEO-5 process would contribute to national capacity? Do not include Fellows.
41. How well was the GEO-5 project planned and managed by UNEP?
    - Excellent management
    - Very well managed, some issues that were resolved quickly
    - Adequately managed, there were some unresolved or unnecessary issues
    - Inadequate management that impaired the quality of the assessment
42. What were the strong points and weak points of the management of GEO-5 by UNEP? *(space for strong and weak).*
43. Was there anything that you considered important to the process or product that could not be undertaken because of shortage of resources?
    - Yes
    - No
    - Don't know
    - Briefly describe what could not be undertaken because of shortage of resources.
44. With which other GEO-5 authors in your Chapter did you have a prior professional association? Please indicate their name and type of relationship. *Use radio bullets*
45. Since working on GEO-5, have you started to work or communicate professionally with any of the other GEO-5 authors from your Chapter or other Chapters?
46. As you were drafting the Chapter(s) who did you envision as the principal users of the information?

Types of user ***(list types and other)***	**Main target**	**Second main**	**Third main**
Global users such as multilateral agreements or international organizations			
Regional users such as regional cooperation agreements			

National governments			
National or local civil society organizations			
Academics and students			
Business and industry			
Local government			
Individuals including youth			
Environmental organisations			
Other (specify)			

47. Do you feel that working in English constrained you or the other authors?
    - o Not at all constrained
    - o Somewhat constrained
    - o Some important constraints
48. Are there any comments you would like to offer about your experience in the role as chapter coordinator, coordinating lead author or lead author?

PART E: Contributing authors, all Chapters

49. Approximately how many words or figures did you contribute to the first draft of [Chapter # and title]?
50. How would you rate the knowledge of the other authors about the topic of your Chapter ? *Use 100% scale where 0 = marginal capacity in the area, 10= highly knowledgeable and a leader in the area*
    - o Contributing authors
    - o Coordinating lead authors and lead authors
51. How would you rate the capacity to collaborate of the other authors in your Chapter ? *Use 100% scale where 0 = unable to collaborate, 10= highly effective collaborator*
    - o Contributing authors
    - o Coordinating lead authors and lead authors
52. How would you rate the communication skills of the other authors in your Chapter ? *Use 100% scale where 0 = extremely poor communicator, 10= highly effective communicator*
    - o Contributing authors
    - o Coordinating lead authors and lead authors
53. With which other GEO-5 authors in your Chapter did you have a prior professional association? Please indicate their name and type of relationship. *Use radio bullets*

List of names included in form	**No association**	**Some association (e.g. discuss at conferences, participate in same meetings)**	**Worked together (e.g. on a grant or publication)**	**Shared a lab, same department, advisor-student**
Author A				
Author B				
Authors from other GEO-5 chapters				

54. Since working on GEO-5, have you started to work or communicate professionally with any of the other GEO-5 authors from your Chapter or other Chapters?

List of names included in form	**No**	**Communicating**	**Planning to collaborate**	**Involved in a joint undertaking**
Author A				
Author B				
Authors from other GEO-5 chapters				

55. As you were drafting the Chapter(s) who did you envision as the targets?

Types of user *(list types and other)*	**Main target**	**Second main**	**Third main**
Global users such as multilateral agreements or international organizations			
Regional users such as regional cooperation agreements			
National governments			
National or local civil society organizations			
Academics and students			
Business and industry			
Local government			
Individuals including youth			
Environmental organisations			
Other (specify)			

56. Do you feel that working in English constrained you or the other authors?
    - o Not at all constrained
    - o Somewhat constrained
    - o Some important constraints
57. Are there any comments you would like to offer about your experience in the role as contributing author?

PART F: All (coordinating, lead, contributing authors and chapter reviewers)

58. How well do you think GEO-5 struck an appropriate balance for the purpose of global environmental decisions and policy between peer-reviewed, grey literature and traditional knowledge?

	Too much	**About right**	**Needed more**
Peer reviewed sources			
Grey literature			
Traditional knowledge			

59. How well do you think GEO-5 struck an appropriate balance for the purpose of national and regional environmental decisions and policy between peer-reviewed, grey literature and traditional knowledge?

	Too much	**About right**	**Needed more**
Peer reviewed sources			
Grey literature			
Traditional knowledge			

60. Please rate the level of difficulty of integrating sustainable development into a global environmental assessment such as GEO-5. *From Survey 1*
61. Looking over the next five years, how do you think the GEO-5 is most likely to influence development of policies and practices that will contribute to improved environmental conditions? *From Survey 1*
62. What do you think will be the main challenges faced by those using GEO-5 to stimulate and inform national/sub-regional policies? *Open - two boxes stimulate and inform*.
63. Would you recommend to a close colleague that they join a future GEO assessment led by UNEP?
    - Yes
    - No
64. What aspects of participating in a GEO would lead you to recommend to a close colleague that they also do so?
65. Do you have any additional comments?

Survey 3: UNEP GEO-5 email survey for national environment agencies

Dear Sir, Madam,

The Evaluation Office of UNEP is currently conducting an evaluation of the Fifth Global Environment Outlook (GEO-5). The purpose of the evaluation is to provide a basis for accountability towards stakeholders and donors, and to generate useful lessons for the next GEO or similar large-scale environmental assessments. The evaluation uses different tools for data collection including an extensive desk review, in-depth interviews and surveys.

The GEOs are fore and foremost targeted at national decision makers in the field of environment. We would therefore like to ask for your kind participation in a short survey to collect your views on the GEO-5 process and possible benefits your country may have drawn from GEO-5.

Your participation in the survey is critical for the evaluators to be able to present a reliable picture of the views of countries on the GEO-5 process and to consider any suggestions you may have on how to improve the GEO in the future.

We would be very grateful if you could please take a few minutes of your valuable time to respond to the survey questions below if possible latest by 4 July 2014. Kindly send your responses, which will be kept confidential, directly to me at Michael.carbon@unep.org copied to Dr. Andy Rowe at andy.rowe@earthlink.net.

Thank you beforehand and kind regards,
Michael Carbon

Survey questions

1. Since GEO-5 was released and looking over the next five years, how do you think the GEO-5 is most likely to influence development of policies and practices that will contribute to improved environmental conditions in your country?

2. What do you think are or will be the main obstacles or challenges in your country for using GEO-5 to stimulate and inform environmental decisions and policies?

3. Is use of GEO-5 in your country likely to contribute indirectly to use in other countries? If yes, please explain.

4. Do you have suggestions about how use of a global environmental assessment can be promoted at national level?

5. Did GEO-5 strike an appropriate balance between (1) peer-reviewed literature using scientific data, (2) grey (not peer reviewed) literature, and (3) traditional knowledge, in order to feed appropriate information and analysis into national and regional environmental decision making and policy?

6. Please describe how GEO-5 is/is not relevant to the sustainable development issues in your country.

7. What were in your view the main strengths and weaknesses of the GEO process and products?

Methodological notes on the author and reviewer survey (Survey 2)

Details of the survey population

Authors, Reviewers and Fellows in GEO-5 file		818
Not eligible from initial review		
Duplicate names	171	
Email address missing	161	
Incorrect email	7	
Not part of target population	38	
Ambiguous information	2	
Total not eligible		379
Eligible respondents		439
Ineligible through information from respondent	8	
Emails bounced	23	
Total eligible respondents		408
Responded		243
Response rate		60%

Bias in the survey

The evaluation had to rely on administrative data to assess bias. There are three relevant measures: role in GEO, the HDI score, and gender. There are more missing values in this data for those not included in the survey lists.

GEO-5 role for those surveyed	**% responding**	
Coordinating lead author	78%	
Lead author	62%	
Contributing author	48%	
Reviewer	50%	
Fellow	61%	
Missing data on GEO role	54%	
Overall response rate	60%	
HDI Score for all GEO-5 participants	**HDI value**	
Not surveyed - Insufficient information	54	
Not surveyed – No email	70	
Surveyed – No response	63	
Surveyed - Responded	55	
Overall HDI score for respondents	58	
Gender	**% women**	**% men**
Surveyed - responded	42%	31%
Surveyed - no response	27%	19%
Not surveyed	32%	49%
Overall women percentage in GEO-5	35%	

Source: Calculated from survey data.

Role in GEO-5 - Higher response rates from coordinating lead authors, lower rates from contributing authors

HDI values – Little difference in the surveyed population

Gender- Female response rates are higher

Annex 7: GEO-5 Publication Downloads[161]

	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Total Downloads
GEO-5 English Full Report	64,856	19,327	763,471	83,401	7,013	8,226	7,243	7,183	8,821	8,719	6,032	4,788	7,354	20,279	34,418	16,373	139,873	96,611	61,415	104,400	144,138	143,204	106,078	89,571	58,373	**2,011,167**
GEO-5 Spanish Full Report	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22,971	162,144	103,636	87,838	155,346	173,306	141,742	41,907	116,465	66,616	209,793	105,348	175,066	88,013	**1,650,191**
Keeping Track - English	243,662	92,861	68,328	79,191	124,990	105,313	34,795	46,543	57,165	41,264	65,888	46,822	33,819	31,409	33,412	40,171	42,149	43,425	16,899	38,761	33,943	39,480	45,489	31,946	20,373	**1,458,098**
GEO-5 Chinese Full Report	N/A	N/A	N/A	91,548	77,759	47,737	46,192	55,070	51,604	24,950	40,788	45,869	27,774	22,003	34,173	29,246	31,354	39,201	35,182	16,245	17,414	11,804	16,863	44,286	8,627	**815,689**
GEO-5 for Business	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	173,716	144,288	64,795	81,482	63,305	31,391	13,083	15,880	23,366	33,690	18,219	17,340	11,490	**692,045**
SPM (English)	72,541	15,201	10,155	10,052	14,521	14,949	12,453	10,954	12,615	27,534	46,281	13,200	8,461	10,909	6,948	9,010	19,184	11,814	6,780	37,980	49,695	67,841	26,981	20,210	9,805	**546,074**
GEO-5 for Youth	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	95,630	28,043	45,203	30,259	11,044	16,060	18,493	12,195	17,897	14,551	10,549	29,265	15,842	31,998	14,917	12,567	16,224	**420,737**
Keeping Track - Spanish	32,910	8,143	5,539	9,456	7,205	5,557	8,596	5,509	17,610	13,817	123,188	24,416	12,725	11,414	1,337	5,771	1,174	7,980	8,213	7,671	14,903	6,337	6,509	7,686	1,864	**355,530**
SPM (Spanish)	108,322	7,447	8,790	10,982	13,737	15,437	8,141	12,017	11,009	9,469	9,914	5,448	10,848	5,050	5,309	8,862	15,285	10,481	6,814	9,534	6,734	13,434	12,858	13,509	7,778	**347,209**

[161] List comprises of publications listed in the top 100 UNEP downloads in the period of June 2012 and June 2014

Measuring Progress	61,497	9,998	8,138	10,371	11,424	8,686	13,057	11,680	7,562	8,543	9,980	10,854	5,206	6,507	2,408	14,257	8,361	10,976	4,494	12,276	6,852	9,410	3,914	3,304	2,223	**261,978**
SPM (French)	64,111	11,005	13,226	8,727	8,266	11,335	4,102	3,958	3,229	5,388	5,242	2,946	2,538	2,129	3,044	6,937	2,646	4,094	2,159	4,989	1,581	3,261	1,940	2,526	961	**180,340**
GEO-5 Water Technical Brief	1,237	7,604	5,534	7,643	5,454	6,268	5,904	6,202	5,773	6,799	5,263	7,008	4,617	4,059	5,305	8,377	5,367	7,122	8,793	7,103	6,288	6,899	4,640	6,236	2,147	**147,642**
Regional Summaries: Latin America/ SP	1,723	* [162]	1,236	2,212	3,676	4,836	1,007	1,836	2,611	1,347	1,148	1,240	1,159	798	1,287	1,083	*	*	*	955	987	62,767	1,673	1,884	951	**96,416**
GEO-5 Land Technical Brief	874	*	*	4,785	4,410	4,963	2,245	2,007	3,210	2,078	2,433	3,525	3,376	3,254	*	2,668	1,228	5,470	2,760	4,544	3,451	5,840	5,512	7,367	4,175	**80,175**
GEO for local Government	6,458	3,873	2,736	3,058	3,735	2,764	2,452	2,940	1,881	2,486	2,370	1,624	1,416	1,121	1,333	1,868	1,224	1,904	1,560	1,521	1,379	1,956	1,799	1,688	1,577	**56,723**
SPM (Korean)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,571	2,404	3,026	3,190	6,844	1,440	2,572	1,773	5,262	6,057	1,577	*	3,849	2,482	3,133	1,931	**47,111**
GEO-5 Russian Full Report	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	1,668	*	6,535	2,049	14,124	5,430	10,442	951	**41199**
SPM (Russian)	1,448	1,054	*	861	1,771	*	438	*	*	1,148	805	14,005	*	761	624	865	1,644	1,905	1,198	*	*	*	*	*	1,136	**29,663**
SPM (Arabic)	761	*	*	603	*	2,215	409	*	*	1,767	930	1,112	962	1,074	1,440	912	1,678	1,436	1,671	2,110	2,728	1,894	2,557	1,695	968	**28,922**
Regional Summaries: Asia Pacific	2,442	763	960	1,115	1,209	1,204	605	608	883	1,004	675	995	650	777	*	800	*	*	*	*	5,162	*	*	*	*	**19,852**
SPM	7,0	1,9	1,7	3,7	78	*	1,1	*	1,1	1,1	*	*	*	90	*	*	*	*	*	*	*	*	*	*	*	**19,631**

[162] * denotes downloads below 500

(Chinese)	15	70	12	68	0		15		91	77				3											
Regional Summaries: North America/SP	*	*	793	1,380	2,712	2,390	*	556	*	812	*	958	*	*	*	*	*	*	*	*	*	5,431	*	1,495	2,816	**19343**
SPM(Portuguese)	*	*	*	*	*	*	755	585	*	1,049	635	1,356	1,816	755	753	*	*	1,769	*	1,302	*	*	*	*	*	**10775**
Regional Summaries: Europe	3,124	765	676	653	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	**5,218**
Regional Summaries: Europe/ SP	*	*	552	782	1,138	970	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	**3,442**
Regional Summaries: Latin America/ PR	1,511	*	708	1,115	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	**3,334**
Regional Summaries: West Africa/ EN	630	*	613	751	*	734	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	**2,728**
Regional Summaries: Europe/RU	*	*	*	*	730	691	542	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	**1,963**
Regional Summaries: North America	1,946	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	**1,946**
Regional Summaries: Asia Pacific/ CH	676	*	*	699	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	**1,375**

Regional Summaries: Latin America/ EN	1,333	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	**1,333**
Regional Summaries: Europe/ PR	*	*	539	700	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	**1,239**
Regional Summaries: Europe/ FR	866	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	**866**
Regional Summaries: Africa/ EN	860	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	**860**

Annex 8: Articles that have cited the GEO-5 Report

1. Albrecht S., Braun R., Heuschkel Z., Marí F., Pippig J. (2013). Future of Food State of the Art, Challenges and Options for Action. Bibliografische Information der Deutschen Nationalbibliothek
2. Ardron J. A et al. (2014). The sustainable use and conservation of biodiversity in ABNJ: What can be achieved using existing international agreements? Marine Policy.
3. Atisa G. et al. 2014. Economic Assessment of Best Management Practices in the Mara River Basin: Toward Implementing Payment for Watershed Services. Water Resources Management, 28(6), 1751-1766.
4. Baum R.M. (2012). Prospects For Rio+20. Volume 90 Issue 25, p. 5 | Editor's Page https://cen.acs.org/articles/90/i25/Prospects-Rio20.html
5. Beckers T. (2012). After Rio+ 20: From patchy achievements to sustained reform. *Environmental Development*
6. Bohórquez J. et al. (2013). Effects of green macroalgal blooms on the meiofauna community structure in the Bay of Cádiz. *Marine Pollution Bulletin*, 70(1–2), 10-17.
7. Borras Jr. S.M., Franco J.C., Gómez S., Kay C., Spoor M. (2013). Land grabbing in Latin America and the Caribbean. The Journal of Peasant Studies, Volume 39, Issue 3-4, 2012
8. Brebbia C. A. (eds). (2013). Environmental sustainability agenda: Metropolitan Area of Mexicali, Baja California, Mexico. Sustainable Development and Planning VI, Rojas-Caldelas, R et al. pp.268.
9. Brownlie S., King N.,Treweek J . (2013). Biodiversity tradeoffs and offsets in impact assessment and decision making: can we stop the loss? *Impact Assessment and Project Appraisal*, Volume 31, Issue 1.
10. Bruyninckx, H., Belis, D. (Eds.). (2013). The Governance of Climate Relations Between Europe and Asia. Edward Elgar Publishing.
11. Cadman T. (2013). Climate Change and Global Policy Regimes: Towards Institutional Legitimacy
12. Center for Governance and Sustainability, University of Massachusetts Boston; Ivanova, Maria; Murphy, Craig; Speth, James Gustave; Figueres, Christiana; and Odingo, Alice, "Activities and Achievements: Progress Report 2011-2013" (2013). Center for Governance and Sustainability Publications. Paper 2.http://scholarworks.umb.edu/cgs_pubs/2
13. Cesaretti G. et al. (2013). Economia E Diritto, Questione ambientale e occupazione: competitività o convergenza? ***Economia e Diritto Agroalimentare***, 18(1), 55-68.
14. Coole D. (2013). Agentic Capacities and Capacious Historical Materialism: Thinking with New Materialisms in the Political Sciences. *Journal of International Studies* June 2013 vol. 41 no. 3 451-469.
15. Dijst M. (2013). Space–Time Integration in a Dynamic Urbanizing World: Current Status and Future Prospects in Geography and GIScience, *Annals of the Association of American Geographers*, *103*(5), 1058-1061.
16. Dittmar M. (2014). Development Towards Sustainability: How to judge past and proposed policies? *Science of the Total Environment*, Volume 472, 15 February 2014, Pages 282–288.
17. Dodds F. et al. (2014). From Rio+20 to a New Development Agenda: Building a Bridge to a Sustainable Future. Routledge.

18. Drolet J.L. (2014). Adaptive Social Protection Social Protection and Social Development, Springer
19. Drolet, J. L. (2013). Social Protection and Social Development: International Initiatives, Springer.
20. Edward G. J. Stevenson and Carol M. Worthman. (2014). Child Well-Being: Anthropological Perspectives: Handbook of Child Well-Being. Springer. 2014, pp 485-512
21. Elmqvist T. et al (2013). Stewardship of the Biosphere in the Urban Era. Urbanization, Biodiversity and Ecosystem Services: Challenges and Opportunities, 2013, pp 719-746,
22. Fritsche U.R., Eppler U. (2013). Global Land Use Scenarios: Findings from a review of key studies and models- GLOBALANDS Working Paper AP 1.3. INAS
23. Galaz V., Biermann F., Folke C., Nilsson M., Olsson P. (2012). Global environmental governance and planetary boundaries: An introduction. *Ecological Economics*, Volume 81, September 2012, pp. 1–3
24. Ges, Editeur- La Découverte I.S.B.N. 9782707173843 DOI : 10.3917/mouv.070.0013
25. Githeko A.K., Ototo E.N., Guiyun Y. (2013). Progress towards understanding the ecology and epidemiology of malaria in the western Kenya highlands: Opportunities and challenges for control under climate Acta tropica, 2012 – Elsevier
26. Habtezion S. (2013). Promoting marine and coastal ecosystem functions through direct economic incentives. - Economic Incentives for Marine and Coastal 2013 - books.google.com.
27. Heinrichs H. (2013). Sharing Economy: A Potential New Pathway to Sustainability, *Gaia*, 22(4), 228-231.
28. Holt W.G. (2012). Climate Change Impacts on Urban Areas, in William G. Holt (ed.) Urban Areas and Global Climate Change (Research in Urban Sociology, Volume 12), Emerald Group Publishing Limited, pp.xiii-xvii
29. Holt. W.G. (2012). Urban areas and global climate change. Research in Urban sociology. Emerald.
30. Hsu A., Lloyd A., Emerson J.W. (2013). What progress have we made since Rio? Results from the 2012 Environmental Performance Index (EPI) and Pilot Trend EPI. *Environmental Science & Policy*, 2013 – Elsevier
31. Hsua A., et al. (2013).Toward the next generation of air quality monitoring indicators. *Atmospheric Environment*, Volume 80, December 2013, Pages 561–570
32. Hung H., MacLeod M., Guardans R., Scheringer M.(2013). Towards the Next Generation of Air Quality Monitoring: Persistent Organic Pollutants (POPs). *Atmospheric Environment* Volume 80, December 2013, Pages 591–598 Elsevier
33. Ivanova, M. (2012). Institutional design and UNEP reform: historical insights on form, function and financing. *International Affairs*, Volume 88, Issue 3, pages 565–584, May 2012
34. Ivanova, M. (2013). The Contested Legacy of Rio+20. *Global Environmental Politics.* November 2013, Vol. 13, No. 4, Pages 1-11(doi:10.1162/GLEP_e_00194) © 2013 Massachusetts Institute of Technology
35. Jabbour, J. & Hunsberger, C. (2012). Visualizing relationships between drivers of environmental change and pressures on land-based ecosystems. *Natural Resources, 5*(4), 146-160.

36. Jabbour, J. et al. (2012). Internationally agreed environmental goals: A critical evaluation of progress. Environmental Development
37. Jean-Marc Y-M. Salmon. (2013). La dissipation de l'esprit de Rio. Mouvements 012/2 (n° 70)
    a. Journal of International Wildlife Law & Policy, 2012 - Taylor & Francis
38. Kallbekken S. & Sælen H. (2013). 'Nudging' hotel guests to reduce food waste as a win–win environmental measure *Economics Letters*, 119(3), 325-327.
39. László P., Hardi P., Martinuzzi M., Hall J. (2012). Bellagio STAMP: Principles for sustainability assessment and measurement. *Ecological Indicators*, Volume 17, June 2012, Pages 20–28
40. Lina Y.C et al. (2013). Potential impacts of discharges from seawater reverse osmosis on Taiwan marine environment. Desalination, Volume 322, 1 August 2013, Pages 84–93
41. Loot, J.A. (2013). The child or the adult: Who can save the porbeagle? Ethan's CRIER project http://en.wikipedia.org/wiki/File:Porbeagle_head.jpg
42. Mancosu E. et al. (2014). Future land-use change scenarios for the Black Sea catchment. *Environmental Science & Policy*.
43. Matthews R. (2012). If We Want to Protect our Children from Gun Violence Shouldn't We Also Want to Protect them from Deadly Pollution? globalwarmingisreal.com
44. Maurrasse, D. (2013). Strategic Public Private Partnerships: Innovation and Development. Edward Elgar Publishing.
45. Morrow K. (2012) Rio+20, the Green Economy and Re-orienting Sustainable Development. Environmental Law Review: December 2012, Vol. 14, No. 4, pp. 279-297.
46. Mulsow S., Coquery S.M., Dovlete C., Gastaud J., Ikeuchi Y., Pham M.K., Povinec P. (2013). Underground water radionuclide concentrations from Mururoa and Fangataufa AtollsInternational Atomic Energy Agency, Marine Environment Laboratory, Monaco http://www.iaea.org/inis/collection/NCLCollectionStore/_Public/30/038/30038786.pdf
47. Murray, F. (2013). The changing winds of atmospheric environment policy. *Environmental Science & Policy*, 29, 115-123
48. Nakamura H. (2012). Revisiting the Operational Principle of Sustainability: Physical and Economic Aspects, *Journal of Sustainable Development* , 5(9), 98-105.
49. Ngo T.B., Nguyen T.A, Vu N.Q., Chu T.T.H., Cao M.Q. (2013). Management and monitoring of air and water pollution by using GIS technology. Journal of Vietnamese Environment DOI: http://dx.doi.org/10.13141/jve.vol3.no1.pp50-54
50. Nielsen T.D. (2013). The role of discourses in governing forests to combat climate change International Environmental Agreements: Politics, Law and Economics -September 2013
51. Nillsson D. (2013). Implementing environmental commitments, Sida's Helpdesk for Environment and Climate Change: http://sidaenvironmenthelpdesk.se/wordpress3/wp-content/uploads/2013/05/RegAfrica_Implementation-of-Env-Committments_8March2013.pdf
52. O'Brien K. (2013). Global environmental change III: Closing the gap between knowledge and action. *Progress in Human Geography*, 37(4), 587-596.
53. Pérez-Arriaga I. J. (2013). Regulation of the Power Sector (Power Systems), Springer, London.
54. Pretzsch, J. et al (2013). Forests and Rural Development, Springer.

55. Redclift M.R., Grasso M. (2013). Handbook on Climate Change and Human Security
56. Reid C.T. (2012). Towards a Biodiversity Law: The Changing Nature of Wildlife Law in Scotland
57. Robinson N.A. (2013). Reflecting on Measured Deliberations, 42 Environmental Law & Policy 219
58. Sala S., Goralczyk M. (2013).Chemical footprint: A methodological framework for bridging life cycle assessment and planetary boundaries for chemical pollution. Integrated Environmental Assessment and Management, Volume 9, Issue 4, pages 623–632, October 2013
59. Scanlon J.E., (2012). Enhancing Environmental Governance for Sustainable Development: Function-Oriented Options. *Governance and Sustainability Issue Brief Series.* Paper 5 http://scholarworks.umb.edu/cgs_issue_brief_series/5
60. Schade S. and Granell C. (2013). Shaping Digital Earth applications through open innovation–setting the scene for a Digital Earth Living lab. *International Journal of Digital Earth*, 2013 - Taylor & Francis
61. Schultz M. (2013). Embedding environmental sustainability in the undergraduate chemistry curriculum: a case study. *Journal of Learning Design*, 2013, *6*(1), 20-33.
62. Silva J. A., Mosimane, A. W. (2013). Conservation-Based Rural Development in Namibia: A Mixed-Methods Assessment of Economic Benefits, *Journal of Environment and Development*, 22(1), 25-50.
63. Sutton P.C. (2012). Alone in the Void: Getting Real about the Tenuous and Fragile Nature of Modern Civilization. *Humanities* 1(3), 178-191; doi:10.3390/h1030178
64. Svensson, S. (2013). UNEP Major Groups Facilitating Committee: An Evolving System http://hdl.handle.net/2077/33850
65. Van der Perk, M. (2013). Soil and water contamination, CRC Press.
66. Van Leeuwen C. J., (2013). City Blueprints: Baseline Assessments of Sustainable Water Management in 11 Cities of the Future. *Water Resources Management*, 27(15), 5191-5206.
67. van Vuurena DP, Kok MTJ, Bastien Giroda, Paul L. Lucasa, Bert de Vriesa. (2013). Scenarios in Global Environmental Assessments: Key characteristics and lessons for future use. *Global Environmental Change*, Volume 22, Issue 4, October 2012, Pages 884–895
68. Voigt C.(2013). Rule of law for nature: new dimensions and ideas in environmental law. Cambridge.
69. Ward H. (2012). Beyond the Short Term: Legal and Institutional Space for Future Generations in Global Governance. Yearbook of International Environmental Law, yielaw.oxfordjournals.org

Annex 9: Project partners[163]

GEO-5 Collaborating Centres[164]

1. Arab Centre for the Studies of Arid Zones and Drylands (ACSAD)
2. Asian Development Bank
3. Asian Institute of Technology (AIT)
4. Bangladesh Centre for Advanced Studies (BCAS)
5. Central European University (CEU)
6. Centre for Environment and Development for the Arab Region and Europe (CEDARE)
7. Centre for International Earth Science Information Network, Columbia University
8. Commission for Environmental Cooperation of North America (CEC)
9. Development Alternatives
10. Environmental Policies Institute (Instituto de Políticas Ambientales)
11. ETH Zürich
12. European Environment Agency (EEA)
13. Gateway Antarctica GRID-Christchurch
14. GRID-Arendal
15. Indian Ocean Commission (IOC)
16. Institute for Global Environmental Strategies (IGES)
17. Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis/
18. International Centre for Sustainable Development (Centro Internacional para el
19. International Institute for Sustainable Development (IISD)
20. IUCN - The World Conservation Union
21. Ministry of Environment Protection, P. R. China
22. Moscow State University (MSU)
23. Musokotwane Environment Resource Centre for Southern Africa - Southern African Research and Documentation Centre (SARDC-IMERCSA)
24. National Environmental Management Authority (NEMA), Uganda
25. National Institute for Environmental Studies (NIES)
26. Netherlands Environmental Assessment Agency (PBL)
27. Network for Environment and Sustainable Development in Africa (NESDA)
28. Peking University
29. Red Mercosur de Investigaciones Económicas
30. Scientific Committee on Problems of the Environment (SCOPE)
31. Scientific Information Centre (SIC)
32. Stockholm Environment Institute (SEI)
33. Thailand Environment Institute (TEI)
34. The Commonwealth Scientific and Industrial Research Organization (CSIRO)
35. The Energy and Resources Institute (TERI)
36. The Pacific Regional Environmental Programme (SPREP)
37. The Regional and International Networking Group (RING)

[163] List of contributing partners, institutions and individuals available in the GEO-5 report (UNEP 2012) Pp. 498-504
[164] Collaborating centres source: http://www.unep.org/geo/pdfs/P_Collaborating_Centres.pdf

38. The Regional Environmental Center for Central and Eastern Europe (REC)
39. United Nations Environment Programme - World Conservation Monitoring Centre
40. Universidad del Pacífico
41. Universidad Federal Rio de Janeiro
42. University of South Pacific
43. University of the West Indies (UWI), Barbados
44. UWI Mona Campus, Jamiaca
45. UWI St. Augustine Campus, Trinidad and Tobago
46. Water Center for the Humid Tropics of Latin America and the Caribbean (CATHALAC)
47. World Resources Institute (WRI)

Multilateral Environmental Agreements

Stockholm Convention on PoPs -	http://chm.pops.int/
United Nations Convention to Combat Desertification (UNCCD)	http://www.unccd.int/
Convention on Biological Diversity (CBD)	http://www.cbd.int/
CMS Secretariat	http://www.cms.int/
CITES Convention on International Trade in Endangered Species of Wild Fauna and Flora Secretariat	http://www.cites.org/
United Nations Framework Convention on Climate Change (UNFCCC)	http://unfccc.int/2860.php
The Basel Convention	http://www.basel.int/
RAMSAR Convention on Wetlands	http://www.ramsar.org/

UN Agencies

United Nations Economic and Social Commission for Asia and Pacific (UNESCAP)	www.unescap.org
AIT/UNEP Regional Resource Centre for Asia and the Pacific (RRC.AP)	www.rrcap.unep.org
Economic Commission for Latin America and the Caribbean (ECLAC)	www.eclac.org/default.asp?idioma=IN
Food and Agriculture Organization of the United Nations (FAO)	www.fao.org/
UN Economic Commission for Europe (UNECE)	www.unece.org
International Organization for Migration (IOM)	www.iom.int
UN-Habitat	www.unhabitat.org
United Nations Educational, Scientific and Cultural Organization (UNESCO)	www.unesco.org
United Nations Industrial Development Organization (UNIDO)	www.unido.org
World Meteorological Organization (WMO)	www.wmo.int
Organization for Economic Co-operation and Development (OECD)	http://www.oecd.org/

Other Contributing UN Agencies[165]

World Health Organization (WHO)	www.who.org/
The World Bank	www.worldbank.org/
United Nations Development Programme (UNDP)	www.undp.org/
Pan American Health Organization (PAHO)	www.paho.org/
United Nations Economic Commission for Europe (UNECE)	www.unece.org/
United Nations Economic and Social Commission for Asia and the Pacific (UN ESCAP)	www.unescap.org/
United Nations Office for Project Services (UNOPS)	www.unops.org/
United Nations High Commissioner for Refugees (UNHCR)	www.unhcr.org/

[165] Source: (UNEP 2012), Pg. 501

Annex 10. Assessment of project design

Relevance		Evaluation Comments	References
Are the intended results likely to contribute to UNEPs Expected Accomplishments and programmatic objectives?		• The primary objective of the GEO-5 is to conduct a global integrated environmental assessment that is legitimate, scientifically credible and results in policy relevant options that help inform decision-making at multiple scales. Intended results are to deliver a credible scientific assessment of the global environment with a strong regional emphasis and actionable policy options that is legitimate. GEO-5 should also inform, as appropriate, the strategic directions of UNEP. These are consistent with the MTS goals to catalyse change, and GEO-5 was undertaken in a manner that built on existing or established partnerships with scientists and institutions. • A major attribute of the project was to catalyse change through engaging regional and global policy resulting in legitimacy of the process and products. The project is intended to provide decision-makers with policy-relevant, up-to-date information to enable formulation of rapid responses of priority and emerging issues. Policy makers are also specifically targeted as an audience to be influenced resulting in the Summary for Policy Makers.	• GEO-5 Project document Pg. 3; Pg. 6; Pg. 18-19 • UNEP Governing Council Proceedings Pg.17
Does the project form a coherent part of a UNEP-approved programme framework?		Yes it does. The project is presented as a concept under the Environmental Governance Sub-programme's Expected Accomplishments EA (d) Programme Framework.	GEO-5 Project document Pg. 3; PF Doc for EA(d) under the EGSP
Is there complementarity with other UNEP projects, planned and ongoing? But not other divisions		Various projects in UNEP were identified as complementary to the GEO-5 either by providing guidelines or being references sources to GEO-5 - directly feeding into the GEO-5 report in terms of data. Other complementary projects were targeted at using information from GEO as a source of information and data. More links between GEO-5 and other UNEP projects had been set to be elaborated by April 2010 (as per the pro doc).	GEO-5 Project document Pg. 30
Are the project's objectives and implementation strategies consistent with:	i) Sub-regional environmental issues and needs?	GEO-5 had a section specifically with a regional focus giving regional policy options. The GEO regions were: Africa, Asia and the Pacific, Europe, Latin America and the Caribbean, North America and West Asia with priorities for assessment identified by regional stakeholders. Regions were planned to: i. Make recommendations for selecting regional scientific and policy partners and will identify areas for scientific collaboration; ii. Be instrumental in the identification of regional target audiences and in regional outreach activities; iii. Recommend methods for incorporating regional environmental governance into GEO-5 policy analysis; and iv. Contribute region-specific data, case studies, and analysis of	GEO-5 Project document Pg. 6

		environmental challenges and their impacts on human well-being and will review the feasibility analyses of relevant policy options/solutions for their specific region. Regional participation in the GEO-5 process was also recognized as critical for a successful process. In addition, the involvements of UNEP's Regional offices in the GEO-5 design from the outset. Sub-regions on the other hand were not the focus of the GEO.	
	ii) the UNEP mandate and policies at the time of design and implementation?	UNEP is mandated to be the principal United Nations body in the field of the environment and to contribute to the assessment of the state of the world environment. GEO-5 was also requested by Governing Council Decision.	GEO-5 Project document pg. 5; GC25/2 para.11
	iii) the UNEP MTS and PoW?	GEO-5 contributes to the PoW Output #441: Global, regional, sub-regional and thematic environmental assessments, outlooks, indicator reports and alerts are produced, communicated and used by decision makers and relevant stakeholders in decision-making in national and international policy processes. GEO-5 was developed based on the MTS (2010-2013) under the expected accomplishment: *That national and international stakeholders have access to sound science and policy advice for decision-making*. In addition the UNEP MTS and PoW (2014-2015) were planned based on needs identified through analysis and data from the GEO (among other reports).	• GEO-5 Project document Pg. 3 • UNEP MTS (2013-2014) Pg. 12 • Statement by the Global and Multi-stakeholder consultation on GEO-5 Pg. 1 (no.4)
	iv) Stakeholder priorities and needs?	The expected accomplishment was: Improved access by national and international stakeholders to sound science and policy advice for decision-making. The scope, Objectives and Process of the Fifth Global Environment Outlook Report (GEO-5) were agreed to at a Global Intergovernmental and Multi-stakeholder Consultation. Business, local government and youth were lead authors in three sectorial GEO-5 products targeting these constituencies.	• GEO-5 Project document Pg. 5; Pg. 7; Pg. 8; Pg. 9 • Statement by the Global and Multi-stakeholder consultation on GEO-5 Pg. 1 (no.4)
Overall rating for Relevance		**GEO-5 is solidly within the mandate and consistent with the policies of UNEP, delivery of expected results will contribute to UNEP goals - *Highly satisfactory***	

Intended Results and Causality	**Evaluation Comments**	**References**
Are the objectives	The primary objective of this project is to conduct a global	GEO-5

realistic?	integrated environmental assessment that is legitimate, scientifically credible and results in policy relevant options that help inform decision-making at multiple scales contributing to UNEP objectives seem feasible and plausible. Previous GEOs have addressed this objective and been judged successful. The additional objectives of capacity building that runs through all GEOs as an important component of the GEO process should however have been developed further in GEO-5.	Project document Pg. 7
Are the causal pathways from project outputs [goods and services] through outcomes [changes in stakeholder behaviour] towards impacts clearly and convincingly described? Is there a clearly presented Theory of Change or intervention logic for the project?	The Theory of change is not explicitly illustrated and/or explained. However the Project Document has implicitly indicated a theory of change based on four key attributes - scientific credibility, legitimacy, policy relevance and effective communication (integrating capacity building) with an emphasis on the assessment process in addition to the product. These attributes have features strongly in meta evaluations and analyses of other global environmental assessments since prior to the first GEO.	GEO-5 Project document Pg. 7 (sub-section 2)
Is the timeframe realistic? What is the likelihood that the anticipated project outcomes can be achieved within the stated duration of the project?	Initially the project duration was 39 months (10/2009 to 12/2012). However there was a delay in the project commencement (by about 5 months - on 10/03/2010) and the project was extended twice, first until 12/2013 then until XX/2014. Based on the disparity between the allocated and actual time for the project implementation, the timeframe provided was likely not realistic for the completion of set outcomes.	• GEO-5 Project document Pg. 3 • Project document supplement pg. 2
Are the activities designed within the project likely to produce their intended results?	The activities for each output were very detailed and costed accordingly. There are reasonably plausible relationships between the activities and the specific outputs they feed into with clear indications of the responsible parties for each activity. However, activities under Output D (communication and dissemination) could have been more specific, in particular on side-products and opportunities to be targeted in addition to Rio+20. Activities and outputs were also quite well sequenced in a Gantt chart included in the Project Document.	GEO-5 Project document Pg. 23-27
Are activities appropriate to drive change along the intended causal pathway(s)	The activities associated with scientific credibility are well designed and proven by previous GEOs. Activities to ensure policy relevance and legitimacy were less proven and so a higher risk. The least (or weakly) developed attributes were capacity building and opportunities with limited activities to drive change.	GEO-5 Project document Pg. 23-27

Are impact drivers, assumptions and the roles and capacities of key actors and stakeholders clearly described for each key causal pathway?	Some of the drivers and assumptions specific to key stakeholders and actor that catalyse change in GEO include: • The Intergovernmental and Multi-stakeholder Consultations agree on a Scope, Objectives, and Process of the GEO-5 Report. • Key relevant partners, particularly at the regional level, provide region specific policy analyses. • The second Intergovernmental consultation negotiate and endorse the Summary for Policy Makers report, and include representatives that have experience and knowledge in using assessments and work experience in integrating the environment into development. • Strong participation at national, regional and global level, coupled with relative ease in achieving political acceptance of GEO-5 assessment findings to maximize impacts at regional and national level. • Adequate technical and human resources capacity of partners • Available innovations and information technology to propel engagement and communication with stakeholders during and after the assessment process to disseminate the findings of the assessment Each of these drivers/assumptions can be apportioned to the ToC key attributes i.e. legitimacy, credibility, policy relevance, communication, capacity building and opportunity	GEO-5 Project document Pg. 10; Pg. 26
Overall rating for Intended Results and causality	**The approach is well established by previous GEOs and in the literature. The main risks are with the new additional pursuit of capacity building and approach to policy relevance – *Satisfactory***	

Efficiency	**Evaluation Comments**	**References**
Are any cost- or time-saving measures proposed to bring the project to a successful conclusion within its programmed budget and timeframe?	Different cost and time saving measures were planned in the GEO-5 project for example utilizing capacity within UNEP (in the various divisions / sub-programmes); The plan to use Information technology, more than any other GEO, to engage and communicate with stakeholders during the assessment process and later to disseminate the findings of the assessment. However the project was revised (twice) for the successful completion of some project activities therefore the designed project duration may not have been adequate. The design also overestimated the budget that UNEP would be able to mobilise and did therefore propose a more costly approach to the assessment than the one that could be followed in reality.	GEO-5 Project document Pg. 7
Does the project intend to make use of / build upon pre-existing institutions, agreements and partnerships, data sources, synergies and complementarities with other initiatives,	Yes the GEO-5 project is deliberately set to maximize and leverage on: GEO report builds on the assessment findings of its predecessor and also draws from lessons learned on process, the project is set to maximize the capacities available within the UNEP structures allocating role to appropriate divisions, UNEP will build on existing scientific partnerships with Collaborating Centres where applicable, and develop new partnerships that can contribute to the	GEO-5 Project document Pg. 5; Pg. 14; pg. 21-22

programmes and projects etc. to increase project efficiency?	focus and scope of GEO-5. Procedures for elements new to GEO-5 such as policy analysis were insufficiently described to assess efficiency.	
Overall rating for Efficiency	**The intent was to utilise existing capacities within and outside UNEP, and established GEO processes. Some of the newer aspects such as policy analysis were insufficiently described to comment on efficiency - *Satisfactory***	

Sustainability / Replication and Catalytic effects	**Evaluation Comments**	**References**
Does the project design present a strategy / approach to sustaining outcomes / benefits?	• The strategy followed in GEO 5 was developed based on best practices from the literature and lessons learnt from previous GEO assessments and with additional tasks/responsibilities as mandated by the Governing Council. • GEO-5 was designed with consideration of the future of GEO and UNEP - integrating programmes such as UNEP-Live that are strategic to the future direction of UNEP as specified by the Governing Council. • The outcomes of the project could potentially be sustained if the key attributes as designed in project (similar to the attributes of the ToC) are met in the project implementation.	GEO-5 Project document Pg. 13; Pg. 22
Does the design identify the social or political factors that may influence positively or negatively the sustenance of project results and progress towards impacts? Does the design foresee sufficient activities to promote government and stakeholder awareness, interests, commitment and incentives to execute, enforce and pursue the programmes, plans, agreements, monitoring systems etc. prepared and agreed upon under the project?	Yes there is a strong component recognizing the need for political acceptance of the GEO-5 process and product. The recognition of this therefore necessitated various strategies such as developing clear strategic goals for engagement of key stakeholders at various levels, and engaging with key networks and recognized scientific institutions in a bid to encourage ownership of the process and product.	GEO-5 Project document Pg. 19;
If funding is required to sustain project outcomes and benefits, does the design propose adequate measures / mechanisms to secure this funding?	Yes funding was noted important for the sustenance of the project and for the successful attainment of the set outcomes. The key strategy employed was the development of a fund-raising strategy targeting multiple stakeholders.	GEO-5 Project document Pg. 20 (table)
Are there any financial risks that may jeopardize sustenance of project results	Inadequate funding is highlighted as a key risk to the success of the project. To mitigate this risk, the project proposed the development of a multi-stakeholder	GEO-5 Project document Pg.

and onward progress towards impact?		fundraising strategy to deliver high-quality proposals to key interested parties through systematic networking and communication, coupled with early sensitizing of donor community with high quality proposals.	20 (table)
Does the project design adequately describe the institutional frameworks, governance structures and processes, policies, sub-regional agreements, legal and accountability frameworks etc. required to sustain project results?		Yes, the governance model is clearly illustrated with clear designation of roles and responsibilities and reporting lines. The UNEP institutional framework in relation to project implementation is also clearly noted. The GEO-5 process will follow relevant guidelines articulated in UNEP's Science Strategy, the principles for best practices for conducting Integrated Environmental Assessments, and the Bali Strategic Plan for Technology Support and Capacity-Building.	GEO-5 Project document Pg. 6
Does the project design identify environmental factors, positive or negative, that can influence the future flow of project benefits? Are there any project outputs or higher level results that are likely to affect the environment, which, in turn, might affect sustainability of project benefits?		This is not particularly relevant to the project	N/A
Does the project design foresee adequate measures to catalyse behavioural changes in terms of use and application by the relevant stakeholders of (e.g.):	i) technologies and approaches show-cased by the demonstration projects;	There were no demonstrations for GEO	N/A
	ii) strategic programmes and plans developed	GEO-5 was designed and intended to have a strong regional emphasis that enable UNEP and the regions to identify actionable policy options that can inform environmental governance and decision-making at global and regional levels. The Prodoc and Statement ask for policy analysis and options but the documents are not clear on the approach/method to follow for analysis and validation of these options	GEO-5 Project document Pg. 5
	iii) assessment, monitoring and management systems established at a national and sub-regional	Regions and countries were required to contribute region-specific data, case studies, and analysis of environmental challenges and their impacts on human well-being and review the feasibility analyses of relevant policy options/solutions for their specific region. However adequate capacity for data collection and analysis would be necessary to maximize this opportunity and appropriate measures for monitoring and management incorporated.	GEO-5 Project document Pg. 6

	level		
Does the project design foresee adequate measures to contribute to institutional changes? [An important aspect of the catalytic role of the project is its contribution to institutional uptake or mainstreaming of project-piloted approaches in any regional or national demonstration projects]		• Yes, the GEO-5 project feeds into the strategic plans of UNEP especially with regards to UNEP-Live which is an on-line, up-dated communication platform for all of UNEP's assessment work. How UNEP will use GEO-5 internally to inform strategic directions within UNEP was less clear other than potentially for the development of GEO-6. • The capacity of collaborating centres, experts and partners, it is assumed, will be developed as they conduct the GEO-5 assessment - through interactions with other assessment partners from different disciplines; and through the analysis of environmental and economic data and information; capacity building efforts both internal to this project and in related projects such as project 44-P4 (Regional and national level capacity building in the area of environmental monitoring, assessment and early warning to support national decision-making.	GEO-5 Project document Pg. 7; Pg. 13
Does the project design foresee adequate measures to contribute to policy changes (on paper and in implementation of policy)?		A major component/attribute of the project to catalyse change was through influencing regional and global policy. The project is intended to provide decision-makers with policy-relevant, up-to-date information to enable formulation of rapid responses to priority and emerging issues. Policy makers are also specifically targeted as an audience to be influenced with inclusion of successful policy approaches in the main report and production of a S*ummary for Policy Makers.*	GEO-5 Project document Pg. 13; Pg. 5; pg. 7
Does the project design foresee adequate measures to contribute to sustain follow-on financing (catalytic financing)?		The process and products of the GEO-5 assessment will potentially lead to future funding for GEO-6 and UNEP-Live strategically important projects for UNEP	GEO-5 Project document Pg. 13; Pg. 7
Does the project design foresee adequate measures to create opportunities for particular individuals or institutions ("champions") to catalyse change (without which the project would not achieve all of its results)?		There was a deliberate move to involve experts and specialists in different sectors/fields as well as strict selection of project partners to contribute to the GEO-5 process selected by governments, UNEP and Multidisciplinary networks to integrate environment and development. The importance of adequate partner capacity is recognized in the pro doc as a major component of the GEO-5 process to ensure that project outputs will be achieved and sustained.	GEO-5 Project document Pg. 3; Pg. 26; Pg. 15
Are the planned activities likely to generate the level of ownership by the main national and regional stakeholders necessary to allow for the project results		UNEP would encourage ownership from Governments when designing the assessment through (i) Early involvement of key Government ministries in the planning processes; (ii) Inviting governments to nominate experts for various roles in the GEO-5 process	GEO-5 Project document Pg. 8; Pg. 7; Pg. 19

to be sustained?	(iii) constant dialogue with partners at the regional level;. (iv) appeal for the products by designing the assessment to include content that they are looking for; (v) adapting and initiating proactive response measures in case the target beneficiaries remain unenthusiastic throughout; (vi) establishment of a High level Intergovernmental Advisory Panel that includes adequate representation from all regions to ensure on-going involvement throughout the process. Specific activities such as the Intergovernmental and Multi-Stakeholder consultation meetings, High Level intergovernmental advisory panel, government involvement in the Summary for Policy Makers publication and selection of experts by regions. Furthermore the focus on the process and not just the products produced is best practice for global environmental assessments creating ownership. GEO-5 also targeted specific audiences (youth, business, local government etc.) with special products that were representatives of the target audience which could potentially play a major role in ownership.	
Overall rating for Sustainability / Replication and Catalytic effects	**GEO-5 continued the GEO approach of employing best practices shown to promote use of global environmental assessments by strongly emphasising the knowledge process. Policy relevance was a central attribute of the GEO-5 knowledge process and products and representatives of policy domains participated throughout the GEO-5 process. It was unclear how UNEP would use GEO-5 internally - *Satisfactory***	

Risk identification and Social Safeguards	**Evaluation Comments**	**References**
Are critical risks appropriately addressed?	Various risks were identified including: Prioritization of GEO-5 across UNEP sub-programmes; Understaffing of some divisions to undertake assigned roles; Weak participation at different levels (national, regional, global) affecting political acceptance of GEO-5; Lack of capacity (technical and human resources) of partners; Challenges in fund-raising and resource mobilization. Some key risks that were not identified include: The challenges of limited time to undertake the GEO process and production of products; Capacity of the UNEP team undertaking the GEO-5 which may have required internal capacity building to undertake the project. However most of the major risks to the project were noted and specific steps to mitigate them proposed including seeking intervention from the Senior Management Team (SMT) and developing multi-stakeholder fundraising strategy among others (complete list of risk management strategies and safeguards available on pg. 18-20 of the Project Document). However, the mitigation strategies could	GEO-5 Project document Pg. 18-20 (table 3)

	have been better developed for instance the risk of inadequate finances to include short and long term strategies that can be adopted considering impact and severity of the risk.	
Are assumptions properly specified as factors affecting achievement of project results that are beyond the control of the project?	Critical success factors are noted in the Project Document including some factors beyond the control of the project. Examples of key assumptions are: The Intergovernmental and Multi-stakeholder Consultations agree on a Scope, Objectives, and Process of the GEO-5 Report; Government representation to the two consultations planned during this assessment – i.e. the Intergovernmental and Multi-stakeholder Consultation to agree on Scope, Objectives, and Process of the GEO-5 Report and the second Intergovernmental consultation which will negotiate and endorse the Summary for Policy Makers report, includes representatives that have experience and knowledge in using assessments and work experience in integrating the environment into development. However the literature suggests that policy results are more likely when decision makers and key stakeholders are more directly involved in the assessment which is not indicated in the documents.	GEO-5 Project document pg. 15 (sub-heading 2)
Are potentially negative environmental, economic and social impacts of projects identified?	The risks identified in the Project Document are not specifically categorized under social, economic, environmental impacts of the project and therefore there were no specific social, economic, environmental safeguards developed in the Project Document.	GEO-5 Project document pg. 18-20 (table 3);
Overall rating for Risk identification and Social Safeguards	**Risks were adequately identified however the tight timeline and budget and possible capacity gaps in the GEO-5 team itself constrained the ability to address risks fully – *Moderately satisfactory***	

Governance and Supervision Arrangements	**Evaluation Comments**	**References**
Is the project governance model comprehensive, clear and appropriate?	Yes, the governance model is clearly illustrated with clear designation of roles and responsibilities and reporting lines.	GEO-5 Project document Pg. 28; Pg. 33
Are roles and responsibilities clearly defined?	Yes the roles and responsibilities in the structure are clearly specified	GEO-5 Project document Pg. 28; Pg. 33
Are supervision / oversight arrangements clear and appropriate?	Yes this is clearly allocated to the UNEP GEO team headed by the Head of GEO.	GEO-5 Project document Pg. 28; Pg. 33
Overall rating for Governance and Supervision Arrangements	**Governance and supervision was clear and feasible - *Satisfactory***	

Management, Execution	**Evaluation Comments**	**References**

and Partnership Arrangements		
Have the capacities of partner been adequately assessed?	• UNEP would also develop a selection criteria for experts participating in the assessment and select project partners according to strict criteria to ensure that partners are able (technically and in terms of human resources) to contribute added value to the process. Project 44-P3, Multidisciplinary networks that can integrate environment and development, will also inform the selection of key partners for the GEO-5 process. • Governments, regions and other stakeholders would nominate experts from different sectors and disciples to participate in the assessment. In addition, DEWA would select/nominate experts for various working groups that will be established. • The importance of adequate partner capacity is recognized in the pro doc as a major component of the GEO-5 process to ensure that project outputs will be achieved and sustained. • The capacity of collaborating centres and experts will be developed as they conduct the GEO-5 assessment - through interactions with other assessment partners from different disciplines; and through the analysis of environmental and economic data and information; capacity building efforts both internal to this project and in related projects such as project 44-P4 (Regional and national level capacity building in the area of environmental monitoring, assessment and early warning to support national decision-making.	GEO-5 Project document Pg. 5; Pg. 8; Pg. 9; Pg. 11, Pg. 15
Are the execution arrangements clear?	The project execution arrangements are quite clear, specifically, the project was set to be executed by UNEP led by the DEWA Division as the managing and coordinating Division under the Environmental Governance sub-programme. All divisions of UNEP were also involved in the project with specific roles and responsibilities	GEO-5 Project document Pg. 5; Pg. 8; Pg. 9
Are the roles and responsibilities of internal and external partners properly specified?	Yes, The roles and responsibilities are well defined in the pro-doc with timeline and budgets allocated to the responsible parties to execute the activities	GEO-5 Project document Pg.21; Pg. 23-26; Pg. 28
Overall rating for Management, Execution and Partnership Arrangements	**Management, Execution and Partnership Arrangements are addressed and are feasible - *Satisfactory***	

Financial Planning / budgeting	**Evaluation Comments**	**References**
Are there any obvious deficiencies in the budgets / financial planning	The activities in the Pro doc have specific budgetary allocations and responsible parties managing the activity and respective funds. Due to the budgetary breakdown in terms of activity, the financial plan is appropriate for the implementation of activities.	GEO-5 Project document Pg. 23-27

Cost effectiveness of proposed resource utilization as described in project budgets and viability in respect of resource mobilization potential	The budget was drafted based on estimates of the amounts required for successfully implementation of the project. However evidenced by the two project revisions, there is a disparity the fund-raising/resource mobilization potential and the proposed resource utilization. Insufficient resource mobilization was identified as one of the key risks and in response the project team would develop a multi-stakeholder fundraising strategy delivering high-quality proposals to key interested parties through systematic networking and communication, coupled with early sensitizing of donor community with high quality proposals.	GEO-5 Project document Pg. 20; Pg. 23-27
Financial and administrative arrangements including flows of funds are clearly described	The Financial and administrative arrangements for the GEO-5 project are clearly laid out with the budget sub-divided according to activities and responsible parties (i.e. responsible divisions) clearly identified for each activity to deliver specific project outputs.	GEO-5 Project document Pg. 23-27
Overall rating for Financial Planning / budgeting	**Uncertainty about adequate funding of the budget is problematic, especially for a high profile complex undertaking, and even more problematic when this is done within tight timeframes. Program documents adequately addressed financial management - *Satisfactory***	

Monitoring	**Evaluation Comments**	**References**
Does the logical framework:		• GEO-5 Project document Pg. 16-17; Pg. 23 • Project document supplement - pg. 4
· capture the key elements in the Theory of Change for the project?	Most key elements of the ToC were included in the Project Document specifically the attributes of legitimacy, credibility, policy relevance, communication, capacity building and ripe opportunities. Legitimacy, credibility, policy relevance, communication are well covered in the document, categorized as the project outputs. These attributes are set as the key outputs of the project with specific milestones to achieve each of the outputs. However, capacity building is integrated as a component within legitimacy (output A) while specific ripe opportunities to be targeted are not clearly spelled out with the exception of the Rio+20 Summit. The implicit assumption is that if the six attributes are met then the process will feed into international agreements and goals, but it is not clear what mechanisms would cause this to happen.	
· have 'SMART' indicators for outcomes and objectives?	The indicators limit the measurement of the attainment of the outputs and could have better been developed to capture a wider scope i.e. to focus on measuring quality in addition to quantity	
· have appropriate means of verification	Because the indicators have been limited to quantitative measures, the means of verification for are appropriate for this specific profile	
· adequately identify assumptions	Some assumptions are only implicitly noted in the Project Document and include: 1. Recovery strategies from the recent global economic crisis	

	presents an opportunity for GEO-5 to assess how sectors (both traditional and emerging) can provide solutions to prevent, mitigate and adapt to environmental challenges. 2. The approach to legitimacy and capacity building largely that did not articulated the amount or types of involvement that would build legitimacy and capacity to stimulate and enable policy use.	
Are the milestones and performance indicators appropriate and sufficient to foster management towards outcomes and higher level objectives?	The milestones of the project are necessary but not sufficient to contribute for the attainment of the outputs of the project which are intended / designed to contribute to/connecting to the higher levels of outcomes and objectives. This limitation is, however, in line with UNEP (QAS) guidelines according to which milestones in prodocs should only present the most significant milestone to an output / outcome in a given 6 month period. Monitoring the delivery of outputs, effectiveness and efficiency (in the control of the project) against the indicators for GEO-5 would however be limited due to the focus on quantity and not a combination of quantity and quality. In addition, performance indicators on policy use are not developed. Key mechanisms to influence policy use should have been established to be able to rate the probability and magnitude of the gain and trigger adoptive strategies in the project implementation process.	GEO-5 Project document Pg. 16-17
Is there baseline information in relation to key performance indicators?	For most indicators the baseline information would be zero	GEO-5 Project document Pg. 5 (Parag. 1);
Has the method for the baseline data collection been explained?	No specific baseline data collection was provided or required	GEO-5 Project document Pg. 5 (Parag. 1);
Has the desired level of achievement (targets) been specified for indicators of Outcomes and are targets based on a reasoned estimate of baseline??	Yes, for each milestone set as the basis of monitoring, there are specific targets to be achieved. Details also include the responsible party for each activity/output. The log frame also details specific indicators and means of verification.	GEO-5 Project document Pg. 16-17 ; Pg. 21-22
Has the time frame for monitoring activities been specified?	• Specific activities undertaken by responsible parties (as specified in the log frame) are to be reported upon completion and submitted to the UNEP project Manager. However there are no specific/set time frames for reposting which can potentially make management, tracking and reporting more challenging. • Half yearly progress & financial reports were to be produced by the project manager to be submitted to the relevant Programme Framework Coordinating Division with a copy to QAS. • The last Progress & Financial Report (Final Report) was set to be submitted within 60 days of Project Closure.	GEO-5 Project document Pg. 21

	However the project was revised twice extending the end date of the project.	
Are the organisational arrangements for project level progress monitoring clearly specified	The progress of each milestone (information, data and necessary inputs from any sub-contracted partners) is to be monitored by responsible parties assigned to specific activities/outputs with oversight provided by the GEO-5 Head. The project manager is also responsible for producing half-yearly Progress & Financial Reports (on specified dates) to be submitted to the relevant Programme Framework Coordinating Division in an electronic format with a copy to QAS	GEO-5 Project document Pg. 21
Has a budget been allocated for monitoring project progress in implementation against outputs and outcomes?	Monitoring of progress in the GEO-5 project was pegged on key project milestones and therefore each key activity (measured against outputs and outcomes) is allocated a separate budget. However there is no specific budget allocated for monitoring.	GEO-5 Project document Pg. 21
Overall, is the approach to monitoring progress and performance within the project adequate?	Monitoring of progress in the GEO-5 project was pegged on key project milestones specified in the monitoring responsibility table and detailed in the logical framework which included: Project output A M1) GEO-5 Intergovernmental and multi-stakeholder consultation organized where the Scope, Objectives, and Process for GEO-5 Report can be finalized and agreed by governmental and other stakeholders M2) Guidelines for the selection of experts are available and applied M3) Tailor made Integrated Environmental Assessment training module for GEO-5 is made available and includes a new module for Policy Analyses Project output B M4) Guidelines for ensuring scientific credibility developed and disseminated for use M5) Review editors sign-off after two rounds of scientific peer-review Project Output C M6) Final draft of the Summary for Policy Makers completed and available for negotiation at an Intergovernmental consultation M7) An endorsed Summary for Policy Makers is published Project Output D M8) Outreach plan developed (will include a schedule of products to be developed, events to be organized, communications to be sent in 2011 and 2012) M9) GEO 5 report published and available in electronic and hard-copy M10) GEO-5 Influence/Impact Study implemented once the GEO-5 assessment has been undertaken in order to measure the impact of the GEO-5 process and products (the	GEO-5 Project document Pg. 16-17; Pg. 21-22;

	Influence/Impact Study Plan is designed in 2010 & will highlight target audiences for GEO-5 and include indicators to measure impact in late 2012)	
Overall rating for Monitoring	**Monitoring focused primarily on activities using quantitative indicators and, as planned, would not contribute to identification of any problems with underlying assumptions or effects of departure from the plan. As designed it would not provide useful guidance for adaptive management of GEO-5 – *Moderately unsatisfactory***	

Evaluation	Evaluation Comments	References
Is there an adequate plan for evaluation?	An evaluation is specified in the pro doc to be undertaken by the evaluation and oversight unit of UNEP. This includes mid-term and terminal evaluations as well as the development of an impact/influence study (evaluation of the project and impacts). The specific objectives of the evaluation include: • To examine the extent and magnitude of project impacts to-date and determine the likelihood of future impacts. • To assess project performance and the implementation of planned project activities and planned outputs against actual results. It is also noted that GEO-5 will draw on lessons learned from the GEO-4 Self Evaluation and Impact Studies. The evaluation of GEO-5 is categories under output D – the effective communication of GEO-5 to the specified target audiences.	• GEO-5 Project document Pg. 6; Pg. 12 Section D (sub-section ii); Pg. 22; • Statement by the Global and Multi-stakeholder consultation on GEO-5 Pg. 7 (no.21 (i))
Has the time frame for Evaluation activities been specified?	A Terminal Evaluation was planned to be done by the Evaluation Office at the end of the project and in conjunction with the start of the planned Impact/Influence Study. The study of impact of GEO-5 was initially planned for late 2012, with preliminary results planned to be available in late 2012. However, this was revised in the project revision document to late 2013. Evaluation is not included in the Gantt chart for the GEO-5 schedule.	• GEO-5 Project document Pg. 12; Pg. 22; Pg. 26 (Bottom of the table) • Project document supplement Pg. 2; Pg. 6
Is there an explicit budget provision for mid-term review and terminal evaluation?	A total budget of US$50,000 was allocated for the impact/influence study in 2013. However the mid and terminal evaluations were allocated within the operations costs and did not have a specific budget allocated for these activities.	• GEO-5 Project document Pg. 24 • Project document supplement Pg. 6

Is the budget sufficient?	Only US$50,000 allocated to the impact/influence study and mid-term and terminal evaluation budgets included within the operations budget (no specific allocation). This could limit the scope of the impact study and the evaluations, and is contradictory to the complexity and importance of this flagship project. The evaluation is intended to feed into/inform the design of the next GEO assessment.	• GEO-5 Project document Pg. 24 • Project document supplement Pg. 6
Overall rating for Evaluation	**Monitoring focused on attainment of outputs and milestones and indicators were quantitative. This does not include key considerations relating to use of GEO-5, especially policy use. This is a serious shortcoming in the monitoring plan. Evaluation is explicitly part of the programme plan but is insufficiently funded and focused on future GEOs; it is not designed to assist GEO-5. The evaluation budget is insufficient to address causal factors in the success and shortcomings of GEO-5 meaning the contributions to GEO-6 will be constrained - *Moderately unsatisfactory***	

Annex 11: Evaluation TORs

- **Objective and Scope of the Evaluation**

1. In line with the UNEP Evaluation Policy[166] and the UNEP Evaluation Manual[167], the Terminal Evaluation of the Project "Fifth Global Environmental Outlook: Integrated Environmental Assessment (Project 44-P1)" is undertaken at completion of the project to assess project performance (in terms of relevance, effectiveness and efficiency), and determine outcomes and impacts (actual and potential) stemming from the project, including their sustainability. The evaluation has two primary purposes: (i) to provide evidence of results to meet accountability requirements, and (ii) to promote learning, feedback, and knowledge sharing through results and lessons learned among UNEP and GEO-5 partners. Therefore, the evaluation will identify lessons of operational relevance for future project formulation and implementation, especially for the soon-to-be-initiated GEO-6 and the UNEP Live projects. Evaluations/reviews of other large assessments may provide complementary insights on common best practices or mistakes and inspiration for lessons learned of larger relevance beyond the GEO process.

2. It will focus on the following sets of **key questions**, based on the project's intended outcomes, which may be expanded by the consultants as deemed appropriate:

To what extent was the GEO-5 a legitimate process that involved a diverse range of stakeholders and partners in the design and conduct of the assessment?

How well did the project ensure scientific credibility of the report (and its by-products) by following accepted procedures and involving scientific experts, scientific peer reviews and using scientifically credible and authoritative sources?

To what extent did the project generate policy relevant options that informed decision-making at multiple scales/levels?

How well were the GEO-5 process and products communicated to the specified target audiences? Were the findings and messages relevant for the target audiences and did they reach them effectively?

To what extent did the project build capacity of collaborating institutions and experts involved in the process to help support data-management, data gathering and filling identified data-gaps? How well did it build capacity of UNEP's broader stakeholder community through enhanced training modules on Integrated Environmental Assessment practice, policy analyses and methodology?

Is there any early evidence of GEO-5 influence on public awareness and political decision-making? What were the most effective strategies used by the project and what were the key drivers and assumptions required to influence public awareness and political decision-making?

How effectively and efficiently was the overall project planned, coordinated and monitored? What was the performance of the multiple UNEP divisions and partners involved in the project?

How did GEO-5 contribute to Rio+20 processes and the "Outcome Document" and were there any (indirect) implications for UNEP?

- **Overall Approach and Methods**

3. The Terminal Evaluation of the GEO-5 Project will be conducted by independent consultants under the overall responsibility and management of the UNEP Evaluation Office in consultation with the GEO-5 Head in the DEWA and the Sub-programme Coordinators of the Environmental

[166] http://www.unep.org/eou/StandardsPolicyandPractices/UNEPEvaluationPolicy/tabid/3050/language/en-US/Default.aspx
[167] http://www.unep.org/eou/StandardsPolicyandPractices/UNEPEvaluationManual/tabid/2314/language/en-US/Default.aspx

Governance and Environment Under Review[168] Sub-programmes. An Evaluation Reference Group (see section 4 below) will be constituted to provide feedback on the evaluation approach and contextual insights that may help shape the evaluation findings and recommendations.

4. It will be an in-depth evaluation using a participatory approach whereby key stakeholders are kept informed and consulted throughout the evaluation process. Both quantitative and qualitative evaluation methods will be used to determine project achievements against the expected outputs, outcomes and impacts.

5. The findings of the evaluation will be based on the following:

A desk review of:

- Relevant background documentation, inter alia UNEP Medium-term Strategy 2010-2013 and Programmes of Work, Statement by the Global Intergovernmental and Multi-stakeholder Consultation on the Fifth Global Environmental Outlook (Nairobi, March 2010);
- Project design documents; Annual Work Plans and Budgets or equivalent, revisions to the project (Project Document Supplement), the logical framework and its budget;
- Project reports such as six-monthly progress and financial reports, progress reports from collaborating partners, meeting minutes, relevant correspondence etc.;
- Questionnaires and surveys conducted with authors and experts;
- Project outputs: the GEO report and its side-products (Summary for Decision Makers, Geo for Youth GEO for business etc.), press communiques, posters, videos and other advertisement materials, GEO portal (renamed Environmental Data Explorer - EDE), UNEP Live portal etc.;
- Mid-Term Review and near final evaluation by the Science and Policy Board;
- Reports from the Regional Consultations;
- Intermediary outputs from the collaborative research initiative under way with the Mercator Research Institute on Global Commons and Climate Change (MCC) on global environmental assessments with a particular focus on the GEO assessment process;
- Review of external online references to the GEO process and its publications over the last 2 years;
- Evaluations/reviews of other large assessments (GEO-4, Millennium Ecosystem Assessment, Assessment of Impacts of and Adaptation to Climate Change in Multiple Regions and Sectors etc.).

Interviews (individual or in group) with:

- Project management – The GEO Head and GEO Team;
- UNEP Fund Management Officer;
- Collaborating institutions and individual experts involved;
- Relevant resource persons not involved;
- Representatives of target audiences (see next point for list).

E-Surveys of target audiences/users of GEO-5 products:

- Government (policy makers)
- Academia and research institutions
- Youth
- Private sector (businesses)

[168] This is a new Sub-programme introduced for the UNEP Medium-term Strategy 2014-2017. The future GEO-6 Project will be located under this new sub-programme.

- **Key Evaluation principles**

6. Evaluation findings and judgements should be based on **sound evidence and analysis**, clearly documented in the evaluation report. Information will be triangulated (i.e. verified from different sources) to the extent possible, and when verification was not possible, the single source will be mentioned. Analysis leading to evaluative judgements should always be clearly spelled out.

7. The evaluation will assess the project with respect to **a minimum set of evaluation criteria** grouped in six categories: (1) Strategic Relevance; (2) Attainment of objectives and planned result, which comprises the assessment of outputs achieved, effectiveness and likelihood of impact; (3) Sustainability and replication; (4) Efficiency; (5) Factors and processes affecting project performance, including preparation and readiness, implementation and management, stakeholder participation and public awareness, country ownership and driven-ness, financial planning and management, UNEP supervision and backstopping, and project monitoring and evaluation; and (6) Complementarity with the UNEP strategies and programmes. The evaluation consultants can propose other evaluation criteria as deemed appropriate.

8. **Ratings.** All evaluation criteria will be rated on a six-point scale. However, complementarity of the project with the UNEP strategies and programmes is not rated. Annex 3 provides guidance on how the different criteria should be rated and how ratings should be aggregated for the different evaluation criterion categories.

9. In attempting to attribute any outcomes and impacts to the project, the evaluators should consider the difference between *what has happened with and what would have happened without the project*. This implies that there should be consideration of the baseline conditions and trends in relation to the intended project outcomes and impacts. This also means that there should be plausible evidence to attribute such outcomes and impacts to the actions of the project. Sometimes, adequate information on baseline conditions and trends is lacking. In such cases this should be clearly highlighted by the evaluators, along with any simplifying assumptions that were taken to enable the evaluator to make informed judgements about project performance.

10. In the specific case of the GEO-5 project, it will be particularly challenging to accurately assess the influence of the GEO-5 process and products on awareness, knowledge and decision making as the target audiences might have access to multiple information sources (including other UNEP sources) and also receive more direct policy support from different actors. Identifying the exact contribution of the GEO-5 process and products will require a well thought-through combination of information sources and analysis methods, including a Theory of Change approach as discussed under criterion C: Effectiveness below.

11. As this is a terminal evaluation but a follow-up project is certain (the future GEO-6 project), particular attention should be given to learning from the experience. Therefore, the "*Why?*" question should be at front of the consultants' minds all through the evaluation exercise. This means that the consultants need to go beyond the assessment of "*what*" the project performance was, and make a serious effort to provide a deeper understanding of "*why*" the performance was as it was, i.e. of processes affecting attainment of project results (criteria under category F – see below). This should provide the basis for the lessons that can be drawn from the project. In fact, the usefulness of the evaluation will be determined to a large extent by the capacity of the consultants to explain "*why things happened*" as they happened and are likely to evolve in this or that direction, which goes well beyond the mere review of "*where things stand*" at the time of evaluation.

- **Evaluation Reference Group**

12. The Evaluation Reference Group (ERG) will provide strategic direction to the evaluation - based on their own experiences and contextual knowledge- and boost buy-in to the evaluation process from different stakeholders (project partners, GEO-5 users including policy makers, researchers and academia and civil society).

13. The ERG will be comprised of five well-respected, senior individuals with a diverse background including three stakeholders in the GEO-5 process (one member of the High Level Intergovernmental Advisory Panel, one member of the Science and Policy Advisory Board, and one senior government official of an influential country), one scholar who has conducted in-depth research on the utility of large-scale environmental assessments, and one professional evaluator belonging to a UN sister agency.

14. The ERG will discuss and provide comments on:

the overall evaluation approach and the reconstructed Theory of Change of the GEO-5 project (see paragraph 40) to help shape the evaluation;
the preliminary findings and recommendations of the evaluation; and
the draft evaluation report, including the evaluation recommendations, on the occasion of the UNEA meeting to be held in Nairobi in June 2014.

15. The ERG will appoint one of their members as the Chair. The UNEP Evaluation Office will provide the secretariat to the ERG. ERG feedback and comments at different stages of the evaluation process will be collated by the Evaluation Office during planned discussion meetings. The Evaluation Office will, in consultation with the Chair and other ERG members, set the agenda for the discussion meetings and support these meetings logistically. It is expected that four such meetings will be held during the evaluation process, as shown in Table 6.

Table 6. Evaluation Reference Group meetings

Meeting	Purpose	Location	Tentative date
1st	• Introduce the ERG members • Elect the Chair • Discuss the TORs	Virtual	Week of 17 February
2nd	• Discuss the Theory of Change of GEO-5 • Discuss the evaluation framework	Virtual	Week of 10 March
3rd	• Discuss the preliminary findings of the evaluation	Virtual	Week of 7 April
4th	• Discuss the draft evaluation report, including the recommendations	At the UNEA meeting in Nairobi	June 2014

- **Evaluation criteria**

A. Strategic relevance

16. The evaluation will assess, in retrospect, whether the GEO-5 project's objectives and implementation strategies were consistent with global and regional environmental issues and needs.

17. It will also assess whether the project was aligned with UNEP's Medium-term Strategy 2010-2013 and Programmes of Work 2010-2011 and 2012-2013. The UNEP MTS 2010-2013 specifies desired results in six thematic focal areas. The desired results are termed Expected Accomplishments. The GEO-5 project was located under the Environmental Governance Sub-

programme. The evaluation should comment on whether the project makes a tangible contribution to any of the Expected Accomplishments specified in the UNEP MTS. The magnitude and extent of any contributions and the causal linkages should be fully described.

18. The evaluation will also assess whether the project objectives were realistic, given the time and budget allocated to the project, the baseline situation and the institutional context in which the project was to operate. Evaluations/reviews of other large assessments should help to put the GEO-5 process into a broader perspective.

B. Achievement of Outputs

19. The evaluation will assess, for each component, the project's success in producing the programmed outputs and milestones as presented in Table 2 above, both in quantity and quality, as well as their usefulness and timeliness.

20. Briefly explain the reasons behind the success (or failure) of the project in achieving its different outputs and meeting expected quality standards, cross-referencing as needed to more detailed explanations provided under Section F (which covers the processes affecting attainment of project results).

C. Effectiveness: Attainment of Objectives and Planned Results

21. The evaluation will assess the extent to which the project's objectives were effectively achieved or are expected to be achieved.

22. The evaluation will reconstruct the **Theory of Change (ToC)** of the project based on a review of Project Documentation and stakeholder interviews. The ToC of a project depicts the causal pathways from project outputs (goods and services delivered by the project) through outcomes (changes resulting from the use made by key stakeholders of project outputs) towards impact (long term changes in environmental benefits and living conditions). The ToC will also depict any intermediate changes required between project outcomes and impact, called Intermediate States. The ToC further defines the external factors that influence change along the major pathways, whether one result can lead to the next. These external factors are either drivers (when the project has a certain level of control) or assumptions (when the project has no control). It also clearly identifies the main stakeholders involved in the change processes.

23. The assessment of effectiveness will be structured in three sub-sections:

Evaluation of the **achievement of outcomes as defined in the reconstructed ToC**. These are the first-level outcomes expected to be achieved as an immediate result of project outputs. For the GEO-5 project, the main question will be to what extent the project has contributed to enhanced knowledge and understanding by relevant stakeholders of the state and trends of the global environment, including regional diversity and drivers; gaps in achieving internationally agreed environmental goals; and options for regional policy action and a global response. Additional questions would be to what extent the project built capacity of collaborating institutions and experts involved in the process to help support data-management, data gathering and filling identified data-gaps; and how well did it build the capacity of UNEP's broader stakeholder community through enhanced training modules on Integrated Environmental Assessment practice, policy analyses and methodology?

Assessment of the **likelihood of impact** using a Review of Outcomes to Impacts (ROtI) approach[169]. The evaluation will assess to what extent the project has to date contributed, and is likely in the future to further contribute, to improved decision-making by the relevant stakeholders towards the achievement at the regional and global level of internationally agreed environmental goals as a result of the projects outcomes, and the likelihood of those changes in

[169] Guidance material on Theory of Change and the ROtI approach is available from the Evaluation Office.

turn leading to behavioural changes in environmental management and, ultimately, to positive changes in the natural resource base, benefits derived from the environment and human living conditions.

Evaluation of the **achievement of the formal project overall objective, overall purpose, goals and component outcomes** using the project's own results statements as presented in the Project Document and Project Document Supplement (see Table 2). This sub-section will refer back where applicable to the preceding sub-sections (a) and (b) to avoid repetition in the report. To measure achievement, the evaluation will use as much as appropriate the indicators for achievement proposed in the Logical Framework (Logframe) of the project, adding other relevant indicators as appropriate. Briefly explain what factors affected the project's success in achieving its objectives, cross-referencing as needed to more detailed explanations provided under Section F.

D. Sustainability and replication

24. Sustainability is understood as the probability of continued long-term project-derived results and impacts after the external project funding and assistance ends. The evaluation will identify and assess the key conditions or factors that are likely to undermine or contribute to the persistence of benefits. Some of these factors might be direct results of the project while others will include contextual circumstances or developments that are not under control of the project but that may condition the sustainability of benefits. The evaluation should ascertain to what extent follow-up work has been initiated and how project results will be sustained and enhanced over time. The reconstructed ToC will assist in the evaluation of sustainability, as the drivers and assumptions required to achieve higher-level results are often similar to the factors affecting sustainability of these changes.

25. Four aspects of sustainability will be addressed:

Socio-political sustainability. Are there any social or political factors that may influence positively or negatively the sustenance of project results and progress towards impacts? Is the level of ownership by the main stakeholders sufficient to allow for the project results to be sustained? Are there sufficient government and other key stakeholder awareness, interests, commitment and incentives to act on the findings and pursue the recommendations made by the GEO report?

Financial resources. To what extent are the continuation of project results and the eventual impact of the project dependent on financial resources? What is the likelihood that adequate financial resources[170] will be or will become available to use capacities built along the GEO process and to implement the GEO report recommendations? Are there any financial risks that may jeopardize sustenance of project results and onward progress towards impact?

Institutional framework. To what extent is the sustenance of the results and onward progress towards impact dependent on issues relating to institutional frameworks and governance? How robust are the institutional achievements such as governance structures and processes, policies, sub-regional agreements, legal and accountability frameworks etc. required to sustaining project results and to lead those to impact on human behaviour and environmental resources?

Environmental sustainability. Are there any environmental factors, positive or negative, that can influence the future flow of project benefits? Are there any project outputs or higher level results that are likely to affect the environment, which, in turn, might affect sustainability of project benefits? Are there any foreseeable negative environmental impacts that may occur as the project results are being up-scaled?

[170] Those resources can be from multiple sources, such as the national budget, public and private sectors, development assistance etc.

26. **Catalytic role and replication**. The *catalytic role* of UNEP interventions is embodied in their approach of supporting the creation of an enabling environment and of investing in pilot activities which are innovative and showing how new approaches can work. UNEP also aims to support activities that upscale new approaches to a national, regional or global level, with a view to achieve sustainable global environmental benefits. The evaluation will assess the catalytic role played by this project, namely to what extent the project has:

catalyzed behavioural changes in terms of use and application by the relevant stakeholders of environmental assessment capacities built and GEO 5 assessment findings;
provided *incentives* (social, economic, market based, competencies etc.) to contribute to catalyzing changes in stakeholder behaviour;
contributed to *institutional changes*, for instance institutional uptake of project-demonstrated integrated environmental assessment approaches;
contributed to *policy changes* (on paper and in implementation of policy) as a result of GEO-report findings and proposed policy options;
contributed to sustained follow-on financing (*catalytic financing*) from Governments, private sector, donors etc.;
created opportunities for particular individuals or institutions ("*champions*") to catalyze change (without which the project would not have achieved all of its results).

27. *Replication* is defined as lessons and experiences coming out of the project that are replicated (experiences are repeated and lessons applied in different geographic areas) or scaled up (experiences are repeated and lessons applied in the same geographic area but on a much larger scale and funded by other sources). The evaluation will assess the approach adopted by the project to promote replication effects and determine to what extent actual replication has already occurred or is likely to occur in the near future. What are the factors that may influence replication and scaling up of project experiences and lessons?

E. Efficiency

28. The evaluation will assess the cost-effectiveness and timeliness of project execution. It will describe any cost- or time-saving measures put in place in attempting to bring the project as far as possible in achieving its results within its (severely constrained) secured budget and (extended) time. It will also analyse how delays, if any, have affected project execution, costs and effectiveness. Wherever possible, costs and time over results ratios of the project will be compared with that of other similar interventions – the GEO-4 process or other similar global assessments. Evaluations/reviews of other large assessments may provide some comparative information on efficiency.

29. The evaluation will give special attention to efforts by the project teams to make use of/build upon pre-existing institutions, agreements and partnerships, data sources, synergies and complementarities with other initiatives, programmes and projects etc. to increase project efficiency. For instance, the evaluation will consider how well other information sources (on global and regional environmental status and trends, and on the costs and benefits of different policy options) accessible to the different target audiences have been tapped, and how the project ensured the complementarity of its process and products to other assessment processes and information sources, to avoid duplication of efforts? Was there sufficient information about the assessment capacity of collaborating institutions and experts and about other capacity building initiatives, to limit and target training and technical support to what was really needed, avoiding duplication?

F. Factors and processes affecting project performance

30. **Preparation and readiness**. This criterion focusses on the quality of project design and preparation. Were project stakeholders[171] adequately identified? Were the project's objectives and components clear, practicable and feasible within its timeframe? Were the capacities of executing agencies properly considered when the project was designed? Was the Project Document clear and realistic to enable effective and efficient implementation? Were the partnership arrangements properly identified and the roles and responsibilities negotiated prior to project implementation? Were counterpart resources (funding, staff, and facilities) and enabling legislation assured? Were adequate project management arrangements in place? Were lessons from other relevant projects properly incorporated in the project design? What factors influenced the quality-at-entry of the project design, choice of partners, allocation of financial resources etc.?

31. **Project implementation and management**. This includes an analysis of implementation approaches used by the project, its management framework, the project's adaptation to changing conditions (adaptive management), the performance of the implementation arrangements and partnerships, relevance of changes in project design, and overall performance of project management. The evaluation will:

- Ascertain to what extent the project implementation mechanisms outlined in the Project Document have been followed and were effective in delivering project milestones, outputs and outcomes. Were pertinent adaptations made to the approaches originally proposed?
- Evaluate the effectiveness and efficiency of project management and how well the management was able to adapt to changes during the life of the project.
- Assess the role and performance of the teams and working groups established and the project execution arrangements at all levels.
- Assess the extent to which project management responded to direction and guidance provided by UNEP Senior Management including the Chief Scientist, the High Level Intergovernmental Advisory Panel and the GEO-5 Science and Policy Advisory Board.
- Identify operational and political / institutional problems and constraints that influenced the effective implementation of the project, and how the project partners tried to overcome these problems. How did the relationship between the project management team and the collaborating partners (institutions and individual experts) develop?

32. **Stakeholder participation and public awareness**. The term stakeholder should be considered in the broadest sense, encompassing both project partners and target audiences (governments, academia and research institutions, youth, private sector, the general public etc.) of the GEO-5 products. The TOC analysis should assist the evaluators in identifying the key stakeholders and their respective roles, capabilities and motivations in each step of the causal pathway from activities to achievement of outputs, outcomes and intermediate states towards impact. The assessment will look at three related and often overlapping processes: (1) information dissemination to and between stakeholders, (2) consultation with and between stakeholders, and (3) active engagement of stakeholders in project decision making and activities. The evaluation will specifically assess:

- the approach(es) used to identify and engage stakeholders (within and outside UNEP) in project design and implementation. What were the strengths and weaknesses of these approaches with respect to the project's objectives and the stakeholders' motivations and capacities? What was the achieved degree and effectiveness of collaboration and interactions between the various project partners and stakeholders during design and implementation of the project?

[171] Stakeholders are the individuals, groups, institutions, or other bodies that have an interest or 'stake' in the outcome of the project. The term also applies to those potentially adversely affected by the project.

the degree and effectiveness of any public awareness activities that were undertaken during the course of implementation of the project; or that are built into the assessment methods so that public awareness can be raised at the time the assessments will be conducted;

how the results of the project (strategic programmes and plans, monitoring and management systems, sub-regional agreements etc.) promote participation of stakeholders, including users, in decision making.

33. **Country ownership and driven-ness.** The evaluation will assess the performance of government agencies involved in the project, participants to the Intergovernmental and Multi-stakeholder Consultation and High Level Intergovernmental Advisory Panel in particular:

To what extent have Governments assumed responsibility for the project and provided adequate support to project execution, including the degree of cooperation received from the various public institutions involved in the project?

How well did the GEO-5 process stimulate country ownership of GEO-5 findings and policy recommendations?

How effective were the Regional Consultations in engaging national government agencies?

34. **Financial planning and management**. Evaluation of financial planning requires assessment of the quality and effectiveness of financial planning and control of financial resources throughout the project's lifetime. The assessment will look at actual project costs by activities compared to budget (variances), financial management (including disbursement issues), and co-financing. The evaluation will:

Verify the application of proper standards (clarity, transparency, audit etc.) and timeliness of financial planning, management and reporting to ensure that sufficient and timely financial resources were available to the project and its partners;

Assess other administrative processes such as recruitment of staff, procurement of goods and services (including consultants), preparation and negotiation of cooperation agreements etc. to the extent that these might have influenced project performance;

Present the extent to which co-financing has materialized as expected at project approval (see Table 1). Report country co-financing to the project overall, and to support project activities at the national level in particular. The evaluation will provide a breakdown of final actual costs and co-financing for the different project components (see tables in Annex 4).

Describe the resources the project has leveraged since inception and indicate how these resources are contributing to the project's ultimate objective. Leveraged resources are additional resources—beyond those committed to the project itself at the time of approval—that are mobilized later as a direct result of the project. Leveraged resources can be financial or in-kind and they may be from other donors, NGO's, foundations, governments, communities or the private sector. For example, external organisations such as schools or environmental advocacy organisations might fund their own activities to promote the dissemination and use of GEO-5 findings.

35. Analyse the effects on project performance of any irregularities in procurement, use of financial resources and human resource management, and the measures taken UNEP to prevent such irregularities in the future. Determine whether the measures taken were adequate.

36. **Supervision, guidance and technical backstopping.** The purpose of supervision is to verify the quality and timeliness of project execution in terms of finances, administration and achievement of outputs and outcomes, in order to identify and recommend ways to deal with problems which arise during project execution. Such problems may be related to project management but may also involve

technical/institutional substantive issues in which UNEP has a major contribution to make. Supervision in the GEO-5 project was expected to take place at different levels of authority, for instance the UNEP Senior Management Team was supervising the GEO Head. Guidance and technical backstopping was also provided by different bodies on particular aspects during the GEO process: for instance, the Chief Scientist was to provide advisory support to the GEO-5 process, the Science and Policy Advisory Board was expected to provide scientific and policy guidance and support to GEO-5 authors and the UNEP GEO-5 team during content drafting etc.

37. The evaluators should assess the effectiveness of supervision, guidance and technical support provided by the different supervising/supporting bodies including:

The adequacy of project supervision plans, inputs and processes;

The realism and candour of project reporting and the emphasis given to outcome monitoring (results-based project management);

How well did the different guidance and backstopping bodies play their role and how well did the guidance and backstopping mechanisms work? What were the strengths in guidance and backstopping and what were the limiting factors?

38. **Monitoring and evaluation**. The evaluation will include an assessment of the quality, application and effectiveness of project monitoring and evaluation plans and tools, including an assessment of risk management based on the assumptions and risks identified in the Project Document. The evaluation will assess how information generated by the M&E system during project implementation was used to adapt and improve project execution, achievement of outcomes and ensuring sustainability. M&E is assessed on three levels:

M&E Design. The evaluators should use the following questions to help assess the M&E design aspects:

Did the project have a sound M&E plan to monitor results and track progress towards achieving project objectives?

How well was the project logical framework (original and possible updates) designed as a planning and monitoring instrument?

SMART-ness of indicators: Are there specific indicators in the logframe for each of the project objectives? Are the indicators measurable, attainable (realistic) and relevant to the objectives? Are the indicators time-bound?

Adequacy of baseline information: To what extent has baseline information on performance indicators been collected and presented in a clear manner? Was the methodology for the baseline data collection explicit and reliable? For instance, was there adequate baseline information on pre-existing accessible information on global and regional environmental status and trends, and on the costs and benefits of different policy options for the different target audiences? Was there sufficient information about the assessment capacity of collaborating institutions and experts etc. to determine their training and technical support needs?

Arrangements for monitoring: Have the responsibilities for M&E activities been clearly defined? Were the data sources and data collection instruments appropriate? Was the time frame for various M&E activities specified? Was the frequency of various monitoring activities specified and adequate? In how far were project users involved in monitoring?

Arrangements for evaluation: Have specific targets been specified for project outputs? Has the desired level of achievement been specified for all indicators of objectives and outcomes? Were there adequate provisions in the legal instruments binding project partners to fully collaborate in evaluations?

Budgeting and funding for M&E activities: Determine whether support for M&E was budgeted adequately and was funded in a timely fashion during implementation.

M&E Plan Implementation. The evaluation will verify that:

the M&E system was operational and facilitated timely tracking of results and progress towards projects objectives throughout the project implementation period;

Half-yearly Progress & Financial Reports were complete and accurate;

the information provided by the M&E system was used during the project to improve project performance and to adapt to changing needs.

G. Complementarity with UNEP policies and strategies

39. **Alignment with the Bali Strategic Plan (BSP)**[172]. The outcomes and achievements of the project should be briefly discussed in relation to the objectives of the UNEP BSP.

40. **Gender**. Ascertain to what extent project design, process, products and monitoring have taken into consideration possible gender inequalities at different levels:

To what extend were efforts made to ensure a gender balance in the GEO-5 team, advisory bodies and GEO-5 authors?

To what extent is the contents of GEO-5 products made gender-specific? Do the assessment findings and recommendations reflect the existing gender inequalities in terms of access to and control over natural resources, gender-specific vulnerabilities to environmental degradation and contribution to environmental information? Do they present gender-specific recommendations and policy options?

To what extent is the communication of GEO-5 products made gender-specific, considering different genders may tap different information sources?

41. **South-South Cooperation.** How did the GEO-5 project promote and benefit from the exchange of resources, technology, and knowledge between developing countries and countries with economies in transition? Briefly describe any aspects of the project that could be considered as examples of South-South Cooperation.

- **The Consultants' Team**

42. For this evaluation, the evaluation team will consist of a Team Leader and one Supporting Consultant. Details about the specific roles and responsibilities of the team members are presented in Annex 1 of these TORs. The Team Leader should have extensive evaluation experience, including of large, regional or global programmes and using a Theory of Change approach; and a broad understanding of large-scale, consultative assessment processes and factors influencing use of assessments and/or scientific research for decision-making. The Supporting Consultant will have a solid environmental education and professional experience; adequate monitoring and evaluation experience; and experience in managing partnerships, knowledge management and communication.

43. The Team Leader will coordinate data collection and analysis, and the preparation of the main report for the evaluation, with substantive contributions by the Supporting Consultant. Both consultants will ensure together that all evaluation criteria and questions are adequately covered.

44. By undersigning the service contract with UNEP/UNON, the consultants certify that they have not been associated with the design and implementation of the GEO-5 project in any way which may

[172] http://www.unep.org/GC/GC23/documents/GC23-6-add-1.pdf

jeopardize their independence and impartiality towards project achievements and project partner performance. In addition, they will not have any future interests (within six months after completion of the contract) with the project's executing or implementing units.

- **Evaluation Deliverables and Review Procedures**

45. The evaluation team will prepare an **inception report** (see Annex 2(a) of TORs for Inception Report outline) containing a thorough review of the project context, project design quality, a draft reconstructed Theory of Change of the project, the evaluation framework and a tentative evaluation schedule.

46. It is expected that a large portion of the desk review (see paragraph 23) will be conducted during the inception phase. It will be important to acquire a good understanding of the GEO-5 context, design and process at this stage. The review of design quality will cover the following aspects (see Annex 7 for the detailed project design assessment matrix):

Strategic relevance of the project
Preparation and readiness (see paragraph 48);
Financial planning (see paragraph 52);
M&E design (see paragraph 56(a));
Complementarity with UNEP strategies and programmes (see paragraphs 57-59);
Sustainability considerations and measures planned to promote replication and up-scaling (see paragraphs 42-45).

47. The inception report will also present a draft, desk-based reconstructed Theory of Change of the project. It is vital to reconstruct the ToC *before* most of the data collection (review of progress reports, in-depth interviews, surveys etc.) is done, because the ToC will define which direct outcomes, drivers and assumptions of the project need to be assessed and measured – based on which indicators – to allow adequate data collection for the evaluation of project effectiveness, likelihood of impact and sustainability.

48. The evaluation framework will present in further detail the overall evaluation approach. It will specify for each evaluation question under the various criteria what the respective indicators and data sources will be. The evaluation framework should summarize the information available from Project Documentation against each of the main evaluation parameters. Any gaps in information should be identified and methods for additional data collection, verification and analysis should be specified. Evaluations/reviews of other large assessments can provide ideas about the most appropriate evaluation methods to be used.

49. The inception report will also present a tentative schedule for the overall evaluation process, including a draft programme for the country visit and tentative list of people/institutions to be interviewed.

50. The inception report will be submitted for review and approval by the Evaluation Office before the any further data collection and analysis is undertaken.

51. When data collection and analysis has almost been completed, the evaluation team will prepare a short **note on preliminary findings and recommendations** for discussion with the GEO-5 project team and the Evaluation Reference Group. The purpose of the note is to allow the evaluation team to receive guidance on the relevance and validity of the main findings emerging from the evaluation. The short note, once finalised, will be shared with the UN Environmental Assembly as part of an information document on the future of the GEO process.

52. **The main evaluation report** should be brief (no longer than 40 pages – excluding the executive summary and annexes), to the point and written in plain English. The report will follow the annotated Table of Contents outlined in Annex 2. It must explain the purpose of the evaluation, exactly what was evaluated and the methods used (with their limitations). The report will present evidence-based and balanced findings, consequent conclusions, lessons and recommendations, which will be cross-referenced to each other. The report should be presented in a way that makes the information accessible and comprehensible. Any dissident views in response to evaluation findings will be appended in footnote or annex as appropriate. To avoid repetitions in the report, the authors will use numbered paragraphs and make cross-references where possible.

53. **Review of the draft evaluation report**. The evaluation team will submit a zero draft report to the UNEP EO and revise the draft following the comments and suggestions made by the EO. Once a draft of adequate quality has been accepted, the EO will share this first draft report with the GEO-5 Head, who will alert the EO in case the report would contain any blatant factual errors. The GEO-5 Head will then forward the first draft report to the other project stakeholders, in particular the GEO-5 Team, the Environmental Governance and Environment Under Review Sub-programme Coordinators, Division Directors, GEO-5 partners and members of the different advisory bodies of the GEO-5 process for their review and comments. Stakeholders may provide feedback on any errors of fact and may highlight the significance of such errors in any conclusions. It is also very important that stakeholders, the GEO-5 Team in particular, provide feedback on the proposed recommendations and lessons. Comments would be expected within two weeks after the draft report has been shared. Any comments or responses to the draft report will be sent to the UNEP EO for collation. The EO will provide the comments to the evaluation team for consideration in preparing the final draft report, along with its own views.

54. The evaluation team will submit the final draft report no later than 2 weeks after reception of stakeholder comments. The team will prepare a **response to comments**, listing those comments not or only partially accepted by them that could therefore not or only partially be accommodated in the final report. They will explain why those comments have not or only partially been accepted, providing evidence as required. This response to comments will be shared by the EO with the interested stakeholders to ensure full transparency.

55. **Submission of the final Terminal Evaluation report.** The final report shall be submitted by Email to the Head of the Evaluation Office. The Evaluation Office will finalize the report and share it with the interested Divisions and Sub-programme Coordinators in UNEP. The final evaluation report will be published on the UNEP Evaluation Office web-site www.unep.org/eou.

56. As per usual practice, the UNEP EO will prepare a **quality assessment** of the zero draft and final draft report, which is a tool for providing structured feedback to the evaluation consultants. The quality of the report will be assessed and rated against the criteria specified in Annex 3.

57. The UNEP Evaluation Office will assess the ratings in the final evaluation report based on a careful review of the evidence collated by the evaluation consultants and the internal consistency of the report. Where there are differences of opinion between the evaluator and UNEP Evaluation Office on project ratings, both viewpoints will be clearly presented in the final report. The UNEP Evaluation Office ratings will be considered the final ratings for the project.

- **Logistical arrangements**

58. This Terminal Evaluation will be undertaken by two independent evaluation consultants contracted by the UNEP Evaluation Office. The consultants will work under the overall responsibility of the UNEP Evaluation Office and will consult with the EO on any procedural and methodological matters related to the evaluation. It is, however, the consultants' individual

responsibility to arrange for their travel, visa, obtain documentary evidence, plan meetings with stakeholders, organize online surveys, and any other logistical matters related to the assignment. The UNEP GEO-5 Team will, where possible, provide logistical support (introductions, meetings etc.) allowing the consultants to conduct the evaluation as efficiently and independently as possible.

- **Schedule of the evaluation**

59. Table 7 below presents the tentative schedule for the evaluation.

Table 7. Tentative schedule for the evaluation

Milestone	**Deadline**
Inception Mission – 2 days (Nairobi)	27-28 February 2014
Inception Report	Mid-March
Evaluation Mission – 1 week (Nairobi)	10-14 March
Telephone interviews, surveys etc.	Mid-March – Mid-April
Note on preliminary findings and recommendations	15 April
Zero draft report	1 May
Draft Report shared with GEO-5 project team	12 May
Draft Report shared with Evaluation Reference Group	26 May
Draft Report shared with GEO-5 stakeholders	23 June
Final Report	31 July 2014

Annex 12: Consultants CVs

Lead Consultant

NAME	**Andy Rowe**
PROFESSION	**Economist and Evaluation Specialist**
NATIONALITY	**Canadian**
COUNTRY EXPERIENCE	**Canada, US, UK, EU, India, Bangladesh, Belize, Barbados, Fiji, Indonesia, Palau, South Africa, Kenya**
EDUCATION	**PhD (London School of Economics)** **MPhil (Memorial University – Canada)** **BA (University of Guelph – Canada)**

Dr. Rowe is an economist and evaluation specialist working primarily with conflict resolution and natural resource interventions in North America and internationally. He undertakes summative, formative and developmental evaluation assignments. His theories of change for environmental conflict resolution and outcome-focused approaches to evaluate conflict resolution programs are widely used. He has developed methods and principles for evaluation in natural resource and sustainable development settings including a rapid impact evaluation approach, the concept of the negotiated alternative, and the principles for evaluation in natural resource settings.

He is a former President of the Canadian Evaluation Society and is active in the American Evaluation Association including former chair of the International Committee. The Canadian Evaluation Society named him the 2013 Fellow of the Society.

Dr. Rowe has a PhD from the London School of Economics. He also studied national and regional economic planning at the University of Glasgow, and holds an M. Phil in regional economics from Memorial University of Newfoundland and a BA with concentrations in economics and agricultural economics from the University of Guelph.

He has worked in evaluation for over thirty years; first with the Research Division of the Canadian housing agency (Canada Mortgage and Housing Corporation 1980-83), then as Director of Socio-Economic and Statistics (1985-90) at Newfoundland Ocean Research and Development Corporation (a provincially-owned oceans R&D corporation) and since then as a consultant except for two years (1998-2000) spent heading a results-based-accountability effort for state government in South Carolina USA.

He currently works with key government and philanthropic clients in conflict resolution, governance and environmental and resource settings.

Current evaluation assignments

- Evaluation of the UNEP GEO-5 programme (ongoing)
- Evaluation of the sustainable community managed fisheries programme of the Locally Managed Marine Areas (LMMA) Network in the Pacific (ongoing)
- Evaluation of the environmental and economic results of using mediation for US EPA Superfund cases. The evaluation of the contribution of mediation to these major environmental decisions began in 2010 and continues through 2015 (ongoing)
- Advisor and trainer to the World Bank funded Africa regional Centre of Excellence in Evaluation and Results (CLEAR) based at The University of the Witwatersrand, South Africa (ongoing). Includes support to the Department of Performance Monitoring and Evaluation (DPME) of the Government of South Africa (ongoing)
- Currently assisting the Compliance Audit and Ombudsman Office (CAO) of the International Finance Commission update their evaluation system for Compliance Audit, Dispute Resolution and Advisory Services. This updates the pilot system Andy Rowe developed for CAO in 2006. (ongoing).
- Currently evaluating mediation cases and conflict resolution training for the Conflict Prevention and Resolution Centre at the US Environmental Protection Agency. This applies the approaches developed by Andy Rowe. We have been working with CPRC continuously since 2004.
- Currently evaluating the CORE PLUS workplace conflict management system for the US Department of the Interior (DOI). Andy Rowe designed and is implementing the evaluation approach since 2010.
- Currently evaluating mediation programs for Alberta Department of Municipal Affairs (annually since 2008)
- Initiating evaluation of mediation for Alberta crown agency the Alberta Energy Regulator (start September 2014)
- Evaluation services for design and implementation of the Packard Foundation Science Program (nearing completion)

Examples of relevant evaluation publications

Rowe, A (2014) Evaluation At the Nexus: Principles for Evaluating Sustainable Development Interventions, in Juha I. Uitto (ed.) Evaluating Environment in International Development: Contributing to National Results Beyond Projects, Earth Scan

Rowe, A. (2014) A Good Start But We Can Do Better, contributed paper to a special issue of the Canadian Journal of Program Evaluation (Donna Podems and Jean King ed.), pp.121-126

Rowe, A. (2012). Evaluation of Natural Resource Interventions. American Journal of Evaluation , 384-394.

Rowe, A. (2013). Performance Measurement as a Means to Improve Governance In D. Plaatjies (ed.) , PROTECTING THE INHERITANCE: Governance and Public Accountability in Democratic South Africa, Jacana, Cape Town

Rowe, A., Colby, B., Niemeyer, M., & Hall, W. (submission March 2014). The Negotiated Alternative Scenario

Rowe, A., Colby, B., Niemeyer, M., & Hall, W. (submission March 2014). Rapid Impact Evaluation.

Rowe, A., & Lee, K. (2012). Linking Knowledge with Action: Promoting Use of Science Knowledge. Retrieved February 18, 2013, from Packard Foundation - Conservation and Science: http://www.packard.org/wp-content/uploads/2013/05/LinkingKnowledgewithAction_ScienceCS2013.pdf

Michael B Mascia; Michael B. Mascia; Sharon Pailler; Michele L Thieme; Andy Rowe; Madeleine C Bottrill; Finn Danielsen; Jonas Gedelmann; Robin Naidoo; Andrew S Pullin; Neil D Burgess (2014). Commonalities and complementarities among approaches to conservation monitoring and evaluation. Biological Conservation 258-267

Rowe, A. (2003). Evaluating Environmental Conflict Resolution. In R. O'Leary, & L. B. Bingham, *The Promise and Performance of Environmental Conflict Resolution* (pp. 175-191). Washington, DC: Resources for the Future.

Rowe, A. (1998) (ed.) Empowerment Evaluation, *Special Issue of the Canadian Journal of Program Evaluation*

Recent Evaluation Reports

Review of Locally Managed Marine Areas Network (2006)

https://docs.google.com/file/d/0BzHMm5umDr9DVmRJNmRCOWh4Skk/edit?pli=1

Evaluation of Packard Foundation EBM Initiative (2008-09)

http://www.packard.org/what-we-fund/conservation-and-science/science/ecosystem-based-management-initiative/

Evaluation and National Fish and Wildlife Foundation Chesapeake Bay Program (2006)

http://www.nfwf.org/chesapeake/Documents/Chesapeake_Eval.pdf

Support consultant

NORAH NG'ENY
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PROFILE

A professional with experience in Project Evaluation, Environmental Management and Project Management with a proven track record of excellent performance, coupled with strong theoretical background in environmental conservation, programme management and community development. A hardworking, self-motivated leader and team player, with strong communication, multi-cultural and interpersonal skills. Ardent about timely and quality execution of projects and programmes towards the achievement of organizational objectives.

EDUCATIONAL BACKGROUND

Feb 2013 – Dec 2013	The Australian National University Masters of Environmental Management and Development
Feb 2012 – Dec 2012	The Australian National University Graduate Diploma Environmental Management and Development
Sep 2004 – Dec 2008	Kenyatta University Bachelor of Environmental Studies (Community Development)
Jun 2003 – Dec 2003	Strathmore University Institute for the Management of Information Systems (IMIS)

WORK EXPERIENCE

UNITED NATIONS ENVIRONMENT PROGRAMME, NAIROBI, KENYA

Feb 2014 – Present	Evaluation Consultant for the Fifth Global Environment Outlook (GEO-5) Evaluation and Evaluation Researcher for the Chemicals and Waste Sub-Programme Evaluation

INTERNATIONAL UNION FOR CONSERVATION OF NATURE (IUCN), NAIROBI, KENYA

Jan 2014 – Feb 2014	Support Consultant - Monitoring and Evaluation of the World Initiative for Sustainable Development (WISP)
Jul 2011 – Dec 2011	Programme Assistant, Global Drylands Programme
Dec 2009 – Jun 2011	Junior Professional Officer (JPO), World Initiative for Sustainable Development (WISP)

Annex 13: References

Blattman, C 2008, 'Impact Evaluation 2.0 ', paper presented to Presentation to the Department for International Development (DFID), London, UK.

Clark, W, Mitchell, R, Cash, D & Alcock, F 2002, *Information as Influence: How institutions mediate the impact of scientific assessments on global environmental affairs* John F. Kennedy, School of Government Harvard University Cambridge.

Clark, WC, Mitchell, RB & Cash, DW 2006, 'Evaluating the Influence of Global Environmental Assessments', *Global Environmental Assessments: Information and Influence, edited by Ronald B. Mitchell, William C. Clark, David W. Cash, and Nancy M. Dickson*, pp. 1-28.

Clark, WC, Tomich, TP, Noordwijk, Mv, Guston, D, Delia, C, Dickson, NM & McNie, E 2011, 'Boundary work for sustainable development: natural resource management at the Consultative Group on International Agricultural Research (CGIAR)'.

Committee on Emerging Research Questions in the Arctic: Polar Research Board 2014, *The Arctic in the Anthropocene: Emerging Research Questions*, The National Academies Press, Washington, D.C.

Cronin, C 1999, 'Theorizing progress: Women in science, engineering, and technology in higher education'.

GEF 2014, *National Focal Points*, Global Environment Facility, viewed 15 September 2014, <http://www.thegef.org/gef/focal_points_list>.

Global Environment Facility Evaluation Office 2006, *The Role of Local Benefits in Global Environmental Programs*, Global Environment Facility Evaluation Office, Washington, DC.

Governing Council of the United Nations Environment Programme 2009a, 'Final review of the long-term strategy on the engagement and involvement of young people in environmental issues: Report by the Executive Director ', paper presented to Twenty-fifth session of the Governing Council/Global Ministerial Environment Forum, Nairobi.

---- 2009b, 'Proceedings of the Governing Council/Global Ministerial Environment Forum at its twenty-fifth session', paper presented to Twenty-fifth session of the Governing Council/Global Ministerial Environment Forum, Nairobi.

---- 2009c, 'Proposed biennial programme and support budgets for 2010-2011; Report by the Executive Director', paper presented to Twenty-fifth session of the Governing Council/Global Ministerial Environment Forum, Nairobi.

---- 2009d, 'Small island developing States: Report by the Executive Director', paper presented to Twenty-fifth session of the Governing Council/Global Ministerial Environment Forum, Nairobi.

---- 2009e, 'State of the environment and contribution of the United Nations Environment Programme to addressing substantive environmental challenges: Report by the Executive Director', paper presented to Twenty-fifth session of the Governing Council/Global Ministerial Environment Forum, Nairobi.

---- 2011, 'Proposed biennial programme of work and budget for 2012–2013: Report of the Executive Director', paper presented to Twenty-sixth session of the Governing Council/Global Ministerial Environment Forum, Nairobi.

Governing Council of UNEP 2009, 'Decisions adopted by the Governing Council/Global Ministerial Environment Forum at its twenty-fifth session', paper presented to Twenty-fifth session of the Governing Council/Global Ministerial Environment Forum, Nairobi, <http://www.unep.org/GC/GC25/Docs/GC25-DRAFTDECISION.pdf>

Hill, C, Corbett, C & St Rose, A 2010, *Why So Few? Women in Science, Technology, Engineering, and Mathematics*, ERIC.

IIED 2013, 'Assessing the social impacts of conservation policies: rigour versus practicality', *Briefing*

IISD 2010, 'UN Environment Programme (UNEP) Global Environmental Outlook (GEO-5) Regional Consultations', *IISD Reporting Services.*
IOM (Institute of Medicine) 2014, *Evaluation Design for Complex Global Initiatives: Workshop Summary*, The National Academies Press, Washington, DC.
IPCC 2014, *IPCC Fifth Assessment Report (AR5) Authors and Review Editors*, Intergovernmental Panel on Climate Change, viewed 15 August 2014, <http://www.ipcc.ch/pdf/ar5/ar5_authors_review_editors_updated.pdf>.
Ivanova, M 2005, *Assessing UNEP as Anchor Institution for Global Environment: Lessons for the UNEO Debate, Yale Center for Environmental Law & Policy, Working Paper No. 05/01*.
Jabbour, J, Keita-Ouane, F, Hunsberger, C, Sánchez-Rodríguez, R, Gilruth, P, Patel, N, Singh, A, Levy, MA & Schwarzer, S 2012, 'Internationally agreed environmental goals: A critical evaluation of progress', *Environmental Development*, vol. 3, pp. 5-24.
Mancosu, E, Gago-Silva, A, Barbosa, A, De Bono, A, Ivanov, E, Lehmann, A & Fons, J 2014, 'Future land-use change scenarios for the Black Sea catchment', *Environmental Science & Policy*.
MCC 2014, *UNEP-MCC collaborative research initiative*, Mercator Research Institute on Global Commons and Climate Change (MCC) viewed 15 September 2014, <http://www.mcc-berlin.net/en/research/cooperation/unep.html>.
Mitchell, RB 2006, *Global environmental assessments: information and influence*, MIT Press.
Mitchell, RB, Clark, WC & Cash, DW 2006, 'Information and Influence', *Global environmental assessments: Information and influence*, p. 307.
National Research Council of the National Academies 2007, *Analysis of Global Change Assessments: Lessons Learned*, The National Academies Press, Washington, DC.
Programme, GCotUNE 2013, *Biennial programme of work and budget for 2014–2015*, UNEP, Nairobi.
Reid, WV, Berkes, F, Wilbanks, TJ & Capistrano, D 2006, *Bridging scales and knowledge systems: concepts and applications in ecosystem assessment*, Island Press.
Rowe, A & Lee, KN 2012, *Linking Knowledge with Action: an approach to philanthropic funding of science for conservation*, Packard Foundation, Los Altos.
The Economist 2014, 'Inside the sausage factory - Scientists versus diplomats at the Intergovernmental Panel on Climate Change', *The Economist*.
UN 1972, *UN General Assembly resolution 2997 (XXVII) of 15 December 1972*, United Nations
---- 2014, *United Nations Millennium Development Goals*, UN, viewed 04/09 2014, <http://www.un.org/millenniumgoals/>.
UNDP 2010, *Evaluation of UNDP Contribution to Environmental Management for Poverty Reduction: The Poverty-Environment Nexus.* , United Nations Development Programme, New York
---- 2011, 'Fast Facts: Gender and Environment', viewed 04/09/2014, <http://www.undp.org/content/undp/en/home/librarypage/results/fast_facts/ff-gender-environment.html>.
---- 2014, *Human Development Index (HDI)*, United Nations Development Programme viewed 25 September 2014, <http://hdr.undp.org/en/content/human-development-index-hdi>.
UNEP 2002, *Global Environment Outlook 3*, United Nations Environment Programme, Nairobi.
---- 2006, *Millennium Ecosystem Assessment Authors*, United Nations Environment Programme, viewed 15 August 2014, <http://www.millenniumassessment.org/en/Authors.ByChapter.html>.
---- 2007, *Global Environment Outlook 4*, United Nations Environment Programme, Nairobi.
---- 2008, *UNEP Evaluation Manual*, United Nations Environment Programme, viewed 15 August 2014,

<http://www.unep.org/eou/StandardsPolicyandPractices/UNEPEvaluationManual/tabid/2314/language/en-US/Default.aspx>.
---- 2009a, *UNEP Evaluation Policy*, United Nations Environment Programme viewed 3 August 2014, <http://www.unep.org/eou/StandardsPolicyandPractices/UNEPEvaluationPolicy/tabid/3050/language/en-US/Default.aspx>.
---- 2009b, *UNEP's Medium-Term Strategy for 2010-2013*, United Nations Environment Programme, Nairobi.
---- 2009c, *United Nations Environment Programme Medium-term Strategy 2010–2013* United Nations Environment Programme, Nairobi.
---- 2010a, *GEO-5 Expert Selection process* United Nations Environment Progarmme viewed 20 August 2014, <http://www.unep.org/geo/pdfs/GEO5_Experts_select_process.pdf >.
---- 2010b, *GEO-5 High Level Intergovernmental Advisory Panel, United Nations Environment Programme, Nairobi, Draft Terms of Reference* United Nations Environment Programme, viewed 12 August 2014, <http://www.unep.org/geo/pdfs/geo5/GEO-5-HL-IGAP_ToR.pdf >.
---- 2010c, *GEO-5 Regional Consultation Reports & Media Links*, United Nations Environment Programme viewed 15 August 2014, <http://www.unep.org/geo/geo_Photogalleries.asp>.
---- 2010d, *GEO-5 Fellows*, United Nations Environment Programme, viewed 09/04 2014, <http://www.unep.org/geo/pdfs/GEO-5_Fellows.pdf>.
---- 2010e, *GEO-5 Outreach Plan*, United Nations Environment Programme, viewed 12 September 2014, <http://www.unep.org/geo/pdfs/GEO-5_Outreach_Plan_GEOwebsite.pdf>.
---- 2010f, *Global Intergovernmental and Multi-stakeholder Consultation Final Statement*, United Nations Environment Programme, Nairobi.
---- 2010g, *Guidance document to Chapter Working Groups for Part II: 'Options for Regional Policy Action'* United Nations Environment Programme, viewed 15 August 2014, <http://www.unep.org/geo/pdfs/geo5/ANNEX7a_GEO-5_Guidance_Part_II_Policy_Appraisal.pdf>.
---- 2010h, 'Guidelines for ensuring Scientific Credibility and Policy Relevance of the GEO-5 Assessment', viewed 04/09/2014.
---- 2010i, *Project Document: The Fifth Global Environment Outlook: Integrated Environmental Assessment*, United Nations Environment Programme, Nairobi.
---- 2010j, *Statement by the Global Intergovernmental and Multi-stakeholder Consultation on the Fifth Global Environment Outlook held in Nairobi from 29 – 31 March 2010*, United Nations Environment Programme, Nairobi.
---- 2010k, *UNEP Programme of work 2010-2011. Programme framework document. Subprogramme 4: Environmental governance - Expected accomplishment (d)*, United Nations Environment Programme, Nairobi.
---- 2011a, *Final Evaluation of the GEO-5 Assessment – summary of Recommendations to the GEO-5 Team by the Science and Policy Advisory Board, 23-25 November 2011*, United Nations Environment Programme, Nairobi.
---- 2011b, *Keeping Track of Our Changing Environment: From Rio to Rio+20 (1992-2012)*, United Nations Environment Programme, Nairobi.
---- 2011c, *Report of the meeting on the Summary for Policy makers for GEO-5*, United Nations Environment Programme, Geneva.
---- 2011d, *Report of the Mid-term Evaluation of the GEO-5 Assessment by the Science and Policy Advisory Board*, United Nations Environment Programme, Nairobi.
---- 2011e, *Summary of Recommendations to the GEO-5 Team by the Science & Policy Advisory Board following the Final Evaluation of the GEO-5 Assessment Report*, United Nations Environment Programme, London.

---- 2012a, *Compilation of Internationally Agreed Environmental Goals and Objectives*, United Nations Environment Programme, Nairobi.
---- 2012b, *GEO-5 Fellows*, United Nations Environment Programme, viewed 19 August 2014, <http://www.unep.org/geo/pdfs/GEO-5_Fellows.pdf >.
---- 2012c, *GEO-5 Summary for Policy Makers*, United Nations Environment Programme, Nairobi.
---- 2012d, *GEO 5 Evaluation Project Document Supplement* United Nations Environment Programme (UNEP), Nairobi.
---- 2012e, *Global Environment Outlook 5*, UNEP, Nairobi.
---- 2012f, *Measuring Progress: Environmental Goals & Gaps*, United Nations Environment Programme, Nairobi.
---- 2012g, *Project 44-P1 Annex: Project Document Supplement (Signed 31/10/2012)*, United Nations Envrionment Programme, Nairobi.
---- 2012h, *UNEP's Medium-Term Strategy for 2014-2017*, UNEP, Nairobi.
---- 2013a, *18 Month Programme Performance Briefing*, United Nations Environment Programme, Nairobi.
---- 2013b, *Annual Programme Performance Report 2012*, United Nations Environment Programme, Nairobi.
---- 2013c, *Global Chemicals Outlook: Towards Sound Management of Chemicals*, United Nations Environment Programme, Nairobi.
---- 2013d, *UNEP Year Book 2013: Emerging Issues in Our Global Environment*, United Nations Environment Programme Nairobi.
---- 2014a, *UNEP Committee of Permanent Representatives*, United Nations Environment Programme viewed 20 September 2014, <http://www.unep.org/about/sgb/CommitteeofPermanentRepresentatives/tabid/129502/Default.aspx>.
---- 2014b, *UNEP Live Knowledge Platform Launched to Fill Gaps Between Data Providers and Consumers* United Nations Environment Programme News Centre viewed 16 September 2014, <http://www.unep.org/NewsCentre/default.aspx?ArticleID=10690&DocumentID=2758>.
---- 2014c, *UNEP Major Groups and Stakeholders* United Nations Environment Programme viewed 3 August 2014, <http://unep.org/civil-society/>.
---- 2014d, *United Nations Environment Programme - About Gender and Environment*, United Nations Environment Programme viewed 19 September 2014, <http://unep.org/gender/data/AboutUs/tabid/54765/Default.aspx>.
UNEP, Green Light Group & SustainAbility 2013, *GEO-5 for Business: Impacts of a Changing Environment on the Corporate Sector*, United Nations Environment Programme.
UNEP & ICLEI 2012, *GEO-5 for Local Government: Solving Global Problems Locally*, United Nations Environment Programme, Nairobi.
Uito, J. I. 2014, Evaluating Environment in International Development, Oxford, Routledge.
US Institute for Environmetnal Conflict Resolution 2002, *Environmental Conflict Resolution: Program Evaluation Overview*, US Institute for Environmetnal Conflict Resolution.

- **Annex 14: Response to comments from evaluation stakeholders**

Over September 2014, a zero draft evaluation report was shared internally in UNEP with the extended GEO-5 team for comments. Comments were received from 5 team members as well as from the UNEP Chief Scientist (Mrs Jacqueline McGlade) who was also a member of the Evaluation Reference Group. The draft report was revised as appropriate and a detailed response to comments was prepared explaining how comments had been dealt with. Table A below presents the comments received from the UNEP Chief Scientist on the zero draft report, and the evaluation team's response to those comments. Responses to comments received from individual team members cannot be represented here as these were inserted directly in the report inside the call-outs (commenting balloons) used by the GEO-5 team to comment on the zero draft report.

Table A. Comments received on the draft evaluation report from the UNEP Chief Scientist (Ms. Jacquie McGlade) and evaluation team response

Comment	EOU Response
Please find my comments on the first draft of the GEO-5 evaluation. I was interviewed once as a member of the Science and Policy Advisory body of GEO-5 and subsequently asked for feedback on a preliminary set of findings. In each case I made connections to the GEO-6 process outlined in the UNEA Resolution and reflected on how these were linked to lessons learned from the GEO-5. I have now received the first draft of the evaluation report for comment, and from a detailed reading, I can see a number of serious flaws, both in methodology and in presentation; these could easily undermine the credibility of the evaluation amongst stakeholders. In the following paragraphs I have outlined a number of issues which ideally should be addressed before the report is circulated further. In describing the problems, I have taken care to review the report from an independent stance in my capacity as UNEP Chief Scientist.	Thank you for your detailed review of the report and useful comments which we have accommodated as far as possible in the revised draft report. We are convinced that your comments helped us to improve the report considerably. You were also a member of the Evaluation Reference Group and invited to comment on the inception report (April 2014), preliminary findings of the evaluation (June 2014), and a short summary of draft findings (September 2014).
Evidence to substantiate the findings The evaluation document set out a logical series of questions and analyses by which it	The number/proportion of respondents has been added in the report under 2.2 Evaluation approach and in footnotes where useful.

proposes to underpin its work. Whilst the qualitative text is straightforward, the lack of detail as to the numbers of respondents to some of the more in depth questions and the nature of the small number of national respondents undermines the results. I understand that there are some numbers given in Annexes, but even if these had been included for me to examine, the text suggests that the numbers in key instances were too small to be reliable.	Considering the low response rate to the national level survey, we have made only sparingly use of its results. We have not used the results from the national survey to draw any statistically valid conclusions or make generalizations. National survey results were used to present some illustrations of country level perceptions and examples of use. Please also note that a low response rate to an online or email survey sent out to line ministries is to be expected.
There also appears to be a mismatch between the evaluation conclusion and documentary evidence available through a wide range of governmental and international processes to support a qualitatively different rating. An example of this can be found in the section on Achievement of direct outcomes, GEO-5 assessments are used for environmental decision making on global goals and agreements, where the rating given is Satisfactory with the text stating that the GEO-5 report "does not appear to have been used directly" for Rio+20. Yet it has been written in many public documents, most recently in the UNEA 2014 that "The outcome document of the 2012 United Nations Conference on Sustainable Development, "The future we want", reiterated the importance of information access, data sharing, and the role of the Global Environment Outlook in bringing together information and assessment in support of informed decision-making, disseminate and share evidence-based environmental information and to raise public awareness on critical and also emerging environmental issues."	We would welcome to study any further documentary evidence provided to us. We have carefully reviewed the documentation provided by UNEP or available online. The UNEA document referred to here is the Report of the Executive Director: State of the Environment, which presents the support structures and processes proposed by UNEP for keeping the world environment situation under review, including progress on UNEP Live. This cannot really be considered an independent source. The Rio+20 Outcome Document itself refers twice to GEO (not GEO-5): "In this regard, we invite the Assembly, at its 27th session, to adopt a resolution strengthening and upgrading the United Nations Environment Programme in the following manner: […] (d) Promote a strong science-policy interface, building on existing international instruments, assessments, panels and information networks, including the Global Environment Outlook, as one of the processes aimed at bringing together information and assessment to support informed decision-making; […] "We stress the need for the continuation of a regular review of the state of the Earth's changing environment and its impact on human well-being, and in this regard we welcome such initiatives as the Global Environment Outlook process aimed at bringing together environmental information and assessments and building national and regional capacity to support informed decision-making."

	These references cannot be considered evidence that the GEO-5 has been used directly during the Rio+20 meetings either. In addition, it is difficult to separate GEO-5 from other factors contributing to the decisions mentioned above. For example the strong effort by UNEP and others (including e.g. SPAB members) to promote GEO-5 is likely to be the main causal force behind the references to GEO rather than GEO-5 itself. There are many forces at play at global and national levels and use occurs over time where contributions of a specific intervention such as GEO-5 become more diffuse and blended. The evaluation could have evaluated this if it had the budget using case studies or even a quasi-experimental design. Despite that challenge the evaluation is of the view that GEO-5 did contribute importantly along with other factors. We think the vehicle for this was more likely the SPM product and related process, in particular the negotiations and signing of the SPM by members. We suspect that the main report contributed by its existence demonstrating that the SPM and other documents and efforts rested on credible science and confirming that the news was indeed not good and the need for action urgent. This has been clarified in the report.
More worryingly, the evaluation in section 4.3.1.3 stated that it "found no evidence that GEO-5 findings or policy options were used to inform UNEP Planning processes. The GEO-5 did not come in time to influence the preparation of the UNEP Medium-Term Strategy which was done in the course of 2011, but it was in time to potentially inspire the Programme of Work, the Programme Framework documents for each Sub-programme and the cohort of new projects proposed for the biennium 2014-2015. However, the evaluation couldn't find any substantive reference to FEO-5 findings or recommendations in the corresponding planning documents." GEO-5 in UNEP's strategic planning. This argument is made that "proper referencing was not made, and that internal use of GEO-5 in UNEP, if [sic]	The sentence reading: "Internal use of GEO-5 in UNEP, if probably not non-existent, is certainly not evident." was replaced by "Internal use of GEO-5 in UNEP, while possible, is certainly not evident."

probabaly non-existent, is certainly not evident. As a result, the evaluation cannot gage [sic] use of GEO-5 within UNEP for strategic planning purposes with any degree of certainty." From a very brief scan across the Senior Management Team papers, I have found evidence to the contrary. For example, leading up to Rio+20 and for MTS and PoW planning purposes thereafter, GEO-5 is referred to throughout. For example in SMT 68, GEO-5 was cited as the key document in supporting the assessment of gaps in knowledge and measuring progress towards achieving over 70 environmental goals. It is also clear that much evidence was put into the Regular Budget documentation for UNNY concerning GEO-5 and hence the shift to GEO being supported from core funds.	The evaluation team would be glad to review any SMT papers you may share with us. Please point us to where evidence of GEO-5 use in UNEP strategic planning is provided. We can accommodate any new evidence in the next revision of the draft report. The evaluation team would be glad to review this documentation if you can please provide us with access and point us to where evidence of GEO-5 use in UNEP strategic planning is provided.
Inconsistency between text and evaluation rating A more crucial issue is the level of inconsistency between the text and the ratings in a number of areas. If the text is a true reflection of the responses received then the ratings do not match. For example, capacity development is concluded to be moderately unsatisfactory. However, the text states that "GEO-5 facilitated significant new network opportunities that have already resulted in new joint undertakings"; "HDI values were at the high-medium cusp for both those with prior collaborations.. and those with new collaborations"; "Fellows… described their GEO-5 experience as professionally beneficial, stimulating and challenging and cited various benefits such as increased recognition, networking, experience with collaborative and multicultural undertakings." The only counterpoint was "comments from some Fellows [which] suggest that capacity developing benefits could have been improved" The text goes on to state that capacity building was the main victim of the budget cuts in the	Evaluation ratings are first and foremost based on the judgment made by the evaluation team. Survey responses might influence such judgment but are certainly not the only factor. The confusion here is due to the fact that we have assessed the actual capacity building outcomes under the output section. This has been fixed in the revised draft report. Capacity development is now assessed MU at the output level because the GEO-5 project did not deliver the majority of its capacity building outputs foreseen at design. Most importantly, efforts to build capacity for using the assessment at different scales were non-existent. This has been made more explicit in the revised draft. Capacity gains from GEO-5 have been assessed under section 4.3.1 Direct outcomes and rated MS (please see response to other comment below). We agree that in absence of an expenditure breakdown per output, the evaluation cannot provide hard evidence on where exactly the savings were made. We did now receive a rough estimate of budget reductions for each activity from the GEO-5 team and have added

GEO-5. To my current understanding, the budget was not cut, rather was revised down in 2013 to reflect the actual spend. Nowhere, evidence presented to show that capacity development as intended in the project documents ie to increase the capacity of key individuals to undertake assessments, was targeted or suffered specifically from a shortage of funds. Indeed the text itself states that "There were, however, considerable capacity gains from participation in GEO-5 by contributors (authors and Fellows in particular) who increased both their assessment skills and social capital."	many details under the efficiency section of the report. The financial management section of the report has also been thoroughly revised based on additional discussions with the GEO-5 team.
Significant inconsistencies also exist in the evaluation text and rating for Likelihood of impact (moderately unlikely), Sustainability and replication (moderately unlikely), Stakeholder participation and public awareness (unsatisfactory), country ownership and driven-ness (moderately satisfactory). The general lack of evidence or even clear argumentation to substantiate the ratings given in the various sub-categories serves to undermine the credibility of the whole report.	We have revised the sections mentioned to better substantiate the ratings. We have decided not to rate likelihood of impact because of its high complexity (long causal chains and many external factors affecting changes in environmental management and the environment) and the lack evidence. The planned impact/influence study was abandoned and we did not have the resources to conduct it as part of the TE.
Methodology to determine composite ratings It is very difficult to see how the rating of a category, containing many sub-elements has been obtained from the text. For example, under 4.2.2 Legitimacy, the overall rating for the 9 sub-categories is given as satisfactory. However, from reading the text the majority would indicate a highly satisfactory rating, with only two issues - the guidelines for use of the grey literature and indigenous knowledge and the functionality of the policy expertise - given as negative evidence. Consider UNEP as legitimate convening organization, where it states that "governments generally consider UNEP as a Legitimate convening organization for environmental assessments such as the GEO". The text goes further "GEO-5 authors too regard UNEP as an appropriate convener for a global environment assessment, and a rather more appropriate convener to influence global than national/sub-regional policies and environmental decisions (scoring on average 2.7 and 2.1 respectively on a 3 point scale ..)." Under Geographic balance, the text states	Composite ratings are not based on formulae but on an informed and independent judgment made by the evaluators. Summaries are provided for each evaluation criterion to explain the evaluators' judgment. Footnotes have been added to explain that composite ratings are not based on formulae but on an overall judgment made by the evaluators.

GEO-5 was clearly more inclusive geographically relative to peer GEAs, and might represent a standard that is 'as good as it gets'." For Interests, the text states that the "approach of GEO-5 is that it needs to be balanced with representation from potential decision makers and key stakeholders." "For GEO-5 with use at a global level as priority this meant involving participants who came from multilateral organizations and national governments and who could be considered representatives of these priority decision making venues and bodies." The inference is that that somehow the other defined interests were not involved; however the production of GEO-5 for Youth, GEO-5 for Business and GEO-5 for Local Government points to the opposite.	The summary has been revised to capture all dimensions of legitimacy and better explain the rating.
The summary for 4.2.2 Legitimacy concludes that "GEO-5 .. pursued legitimacy associated with the major focus defined by the GC which was n global use of the assessment using Rio+20 as a launching venue. This was a strategic decision that appears to have been successful." However, the text goes on to state that this is not the conventional view of legitimacy, rather it is "the interests of nations disproportionately affected by the environment according to their HDI rankings, and the major groups and stakeholders usually consulted by UNEP'. Yet the evaluation says earlier on that GEO-5, especially regarding geography was more inclusive than other GEAs. The penultimate phrase "future GEOs would be ill-advised replicating GEO-5 approaches to legitimacy" is therefore highly inappropriate.	See response above. In this case, an HS rating for outputs could not be granted considering that several sub-ratings were S or below, and that capacity development, which was requested by the GC Decision and subsequent GIMC Statement, was largely neglected by the project.
The overall rating for 4.2.7 Summary: Achievement of Outputs, is given as Satisfactory and yet within the section the following ratings are given: Credibility: Highly Satisfactory Legitimacy: Satisfactory Salience: Satisfactory Capacity Development: Moderately Unsatisfactory Timeliness: Highly Satisfactory	The assessment of capacity building outcomes has been moved under the direct outcomes section and rated MS. Capacity gains were concentrated on direct participants and related to assessment capacity and social capital. Developing countries, the main target of capacity building efforts according to the GC

Communication: Highly Satisfactory. Similarly, the section ratings for 4.3.1 are: Satisfactory for the use of GEO-5 assessments in decision making on global goals and agreements; Moderately satisfactory for its use in environmental decision making at different levels; and No rating for its use in UNEP strategic planning (see below). The overall rating is Moderately Satisfactory. The approach used by the consultants to deduce these overall ratings from the sub-elements is not set out in any measure and as such, weakens the whole analysis. It is therefore essential that it is somehow made clear just how they did this.	direction, were relatively under-represented among these contributors. Capacity building gains as regards the use of the assessment at multiple scales were clearly not a priority of the project. The combination of one S and two MS ratings cannot be considered overall satisfactory.
Shifting frameworks for analysis For 4.3 Effectiveness: attainment of project objectives and results, the objectives or baseline for evaluation also appears to have been altered. For example the analysis shifts from global and national/sub-regional as listed in the beginning of the report to GEO-5 assessments are used for environmental decision making at sectoral, national and sub-national levels. There is no reference to the GEO-5 for Youth, for Business and Local Governments which were written by and for these communities. The section is poorly thought through, including for example argumentation about sources of information ie traditional and grey literature which were addressed earlier in the evaluation under credibility rather than utility. I would also suggest that the written evidence alluded to from national focal points about insufficient use of traditional knowledge should be included explicitly, as few countries have made such information available through	We have explained in the revised draft report what is meant by (sub-)regional and corrected any inconsistencies in terminology to indicate scales. Sectors are only mentioned where we look at interests under legitimacy. An assessment of the process leading to the side-products of GEO-5 has been added in the revised draft report under the communication outputs. The evaluation has not done, however, an in-depth assessment of the quality or use of the side-products. This has been recognized under the “limitations of the evaluation” section. Therefore, the effectiveness section does not refer back to these side-products. As the evidence of use at national level is sparse, the assessment is heavily based on reasoning using the reconstructed theory of change of the GEO-5. Some weaknesses identified at the output level (e.g. in terms of legitimacy where the use of grey literature and traditional knowledge are discussed) are expected to reduce effectiveness (use) of the assessment.

their own channels and have publically stated their difficulty in using it for assessment or legal purposes. Referring to the IPBES guidelines is somewhat disingenuous as they were developed after GEO-5 had concluded its work; the analysis should reflect this time-dependency in the answers given by respondents. I am also concerned that the text does not substantiate the rating of moderately satisfactory.	 This reference is made within a quote from the national survey. A footnote has been added to explain the time lapse. The rating has been explained with a summary on use at the national level.
Under 4.3.2 Likelihood of impact, the rating is given as Moderately Unlikely and the likelihood that measureable impact on the environment and human well-being can be traced back to GEO-5 as low. This shows a deep lack of understanding of the wide context in which the evaluation of GEO-5 should have taken place especially regarding the importance that countries, NGOs and others give to the GEO-5 analysis aka Measuring Progress in the SDG developments, the evaluation of MEAs and in supporting the MDGs. In this regard I would strongly urge the Evaluation team to think in a far broader context and interview countries such as Switzerland to gain a better understanding of this aspect of their evaluation.	We have decided not to rate likelihood of impact, as explained in the response to another comment above. The context section of the report has been strengthened to present the wider context in which GEO-5 was conducted.
Context and strategic setting The evaluation team gives a rating of Moderately Unlikely for the sustainability and replication of GEO-5. It is here that I have my gravest concerns, both about the methodology and the evidence base for the analysis and about the context in which the evaluation of a project such as GEO-5 has been undertaken. As a flagship of UNEP, GEO is not simply another project, subject to the exigencies of budgets and people. It is something which countries agreed during UNEA, is fundamental to informed decision making for sustainable development. I would therefore strongly advise that the team be far more specific in their definition and use of the term sustainability and see that it is fit for purpose; ie reflects properly the attributes of the UNEP	The sustainability assessment has been revised to better match the definition and sub-criteria in the evaluation TORs. The rating for sustainability and replication has been raised to moderately likely reflecting the strong internal and external political support and a more secure budget for future GEOs, but also the need to adapt the overall approach of conducting GEOs to better meet environmental information and analysis requirements at widely differing scales and temporal periods, to match the changing profile of environmental issues, in recognition of the connectivity of sustainable development and the environment, and in light of increased technical capacities for data management, analysis and dissemination.

flagship it represents, before applying a rating. Until the methodology used for this section becomes available I would be very cautious as to how this draft report is distributed.	
Similarly, I would ask the team to readdress the sections on Stakeholder participation and public awareness, rated at Unsatisfactory and on Country ownership and driven-ness, rated as Moderately Satisfactory. As the results do not seem to align with what actually occurred, such as the generation of the GEO for Youth, Business and Local Government by the relevant communities themselves, and what has been stated publically in the UNEA and CPR meetings, and captured in the various documents and minutes, it is important for the team to present the evidence that underpins these conclusions.	The argumentation underpinning the ratings in the draft report has been strengthened. Not in all cases is hard evidence available, but then the reasoning behind the judgment has been spelled out.
Conclusion The issues identified above are sufficient in my opinion to warrant a very careful rethinking of the report; they should certainly be addressed before the report is circulated any further. I was concerned that the team stated that they had insufficient time and resources to undertake this evaluation. However, in my experience of evaluations, the amount of money budgeted and the time allocated were more than enough. As a first step, I would suggest that the evidence base is made part of the report rather than as annexes and that wherever possible further analysis of documentary evidence undertaken. There is some misrepresentation as to budget issues which can be clarified and of course the issue of how the composite ratings were derived is essential. Great care should also be taken to make certain that the text can be substantiated through the evidence gathered and that the rating is consistent with the text, otherwise	The report has been revised as appropriate. The resources for the evaluation were one senior consultant and one junior evaluation researcher for approximately 3 months, which was indeed a strong limitation. The Evaluation Office had to provide a considerable in-kind contribution (staff time) to complement the team. The evaluation budget was less than 1% of the total project budget – far below the standard 2-3%. In addition, the impact/influence study on which the evaluation could have relied was not carried out. This has been done in the report as appropriate. However. Some evidence was left in annex not to overburden the report. We would be pleased to review any further documentary evidence provided to us in the next revision of the report.

there is a significant danger that the report will not be seen as credible.	

The revised draft report was then shared outside UNEP between 14 October and 9 November 2014 for comments with: members of the Evaluation Reference Group, members of the GEO-5 Science and Policy Advisory Group and all GEO-5 authors. Table B below includes the comments received from these evaluation stakeholders on the revised draft report, and the evaluation team's response to those comments.

Table B. Comments received by external stakeholders on the revised draft report and evaluation team response

Comment	Evaluation team response
Susanne Bech **Evaluation Officer, UN-Habitat** **GEO-5 Evaluation Reference Group**	
General comments	
- The draft report is methodologically well done and systematically presented. It covers the many aspects of the GEO-5 process. Further to the credit of the evaluation team, it has added new tools and perspectives such as the average HDI comparisons.	Thank you.
- It might, however, be useful for readers to explain how the HDI and especially the 'representative HDI country' (table 10) should be interpreted in section 2.2 evaluation approach or 2.4 limitations the evaluation. The question is if a lower HDI should (always?) be interpreted as better than a higher HDI?	A bullet point was added at the end of paragraph 11 of the main report to explain the use of HDI in the report to assess legitimacy of the GEO-5.
There have been previous GEOs and evaluations of the GEOs, which were done by DEWA. The current evaluation of GEO-5 could at times use comparisons with previous GEOs especially GEO-3 and GEO-4, for example, in budget, number of reviewers, role of capacity building etc. The evaluation team, however, may for methodological reasons have decided to limit comparison with previous GEOs.	We did not have the time to review the previous GEOs in detail but used their evaluations to prepare the evaluation framework of GEO-5. Despite numerous requests, it was impossible to obtain budget information on GEO-3 and GEO-4 from DEWA/UNEP. Evaluations of GEO-3 and GEO-4 did not indicate their respective costs. The number of contributors to GEO-4 was added to §102 for comparison. A paragraph (§195) was added under section 4.6.1 of the main report where some parallels are drawn between GEO-4 Working Group survey findings and findings of this evaluation of GEO-5.
The evaluation report does not include a section on lessons learned for example on gender participation, linking GEO-5 to Rio+20, use and tailoring of spin off reports, weak log frame and project risk assessment.	The evaluation team opted for conclusions and recommendations instead of lessons learned. Key findings and main messages are summarized in the Executive Summary of the report.
Suggest adding a few more figures/ tables, for	The final evaluation report includes 6 figures

Comment	Evaluation team response
example, on rating of credibility, and possibly categorized suggestions for improvement from survey respondents (which could be compared with suggestions from the GEO-5 team) to support recommendations later on.	and 14 tables.
The following are some specific comments for your consideration.	
§11* - "Surveys: A third survey was conducted about use of GEO-5 at national levels." What was the response rate to this survey? Paragraph 164 mentions survey responses from GEF national focal points – it is not clear if these responses were part of the same survey. Also what are the GEF national focal points – national government representatives, NGOs, partners?	Table 2 has been amended to include information on the national environmental agency survey. To identify the most appropriate national respondents, the evaluation team used the online contacts database of the national GEF operational focal points. These usually correspond to the Heads of the governmental environment agencies. This has been explained under the evaluation approach section (§11). To avoid confusion, we have removed reference to GEF national focal points in the report and replaced it with "national survey respondents".
§14 - "The evaluation has to limit the inquiry on use to the GEO-5 main products only and was unable to explore use of several potentially important side-products". Suggest specifying the outputs added in final revision of project document to include UNEP Year Books for 2013 and 2014, the design of UNEP live and GEO-6 projects and the GEO for Small Island Developing States which were not evaluated. Secondly, not sure if it is correct to consider UNEP Year Book 2013 and 2014 as spin-off products of GEO-5? The early reports in the Year Books series were closely related to the GEO report but later editions were produced as independent reports.	The side-products meant here are the ones listed in §32. Reference to the paragraph was added in final report. We also explained in §14 what was meant by add-ons (such as the specs for UNEP Live and UNEP Year Books) and why these were not evaluated (because not considered part of the GEO-5 assessment process and products).
§14 - The project will formally close BY December 2014. The evaluation was conducted between February and September 2014. The current draft is dated October 2014. Were all outputs of the project delivered at the time of the evaluation?	Yes they were except for the add-ons mentioned in para 14.
§14 - Did the evaluation review and consider recommendations of previous GEO evaluation reports?	Yes, but not explicitly. We have added some references to GEO-4 evaluation findings and recommendations under section 4.6.1 in the final report.
§17 - There has not been an audit of GEO-5. Has there been audit of any of the previous	We don't know for sure but it is highly unlikely.

Comment	Evaluation team response
GEOs?	
§36, table 5 - UNEP GEO-5 team (part of Divisional input into the process): Agreement… It is not clear to me what is meant by 'agreement' (internally in the GEO-5 team, internally in UNEP with other divisions or externally)?	What is meant is agreement within the GEO-5 team.
§40, table 7 - Numbers under mobilized funding does not add up to total project cost USD6,560,135.	Yes, the amounts for the individual outputs were left blank because unknown, not because they were zero. Instead of leaving the cells blank we have added "unknown" in the cells to avoid confusion.
§54 - What is the relevance of GEO-5 substantive key messages/ themes to UNSCD and other UN processes including the post 2015 agenda? See §160 which mentions GEO-5 messages and the Sustainable Development Goals.	This is a very important question which is indeed answered later in the report. The strategic relevance section here looks at ex-ante relevance of the GEO-5 assessment, not at whether its results were relevant. Relevance of the process and results is indeed very important and assessed in much detail under section 4.2.3 Salience.
§56 - "Working with scientists might also make it more difficult to coordinate the timing of the assessment with ripe opportunities for its use" Why is it more difficult to work with scientists on a 'research' report such as GEO-5?	It is not considered difficult to work on research with scientists, on the contrary. What was meant here was that scientists might not give the timing attribute as much priority as the credibility attribute. This clarification was added in the text.
§67 - It could be useful to include figures/ tables of these findings.	Two figures added.
§78 - "The SPAB further highlighted these issues in the Mid-term Evaluation it undertook". On the use of the term evaluation in an evaluation report, it might be good to specify for 'outside readers' what kind of evaluation the SPAB was? Was it an evaluation conducted based on UNEP Evaluation Office standards and norms, including independence or a self-assessment?	A footnote was added to explain the process of the SPAB reviews. We have also replaced the term SPAB "evaluation" by SPAB "review" to avoid confusion. The SPAB reviews were indeed not conducted following EO norms and standards.
§93 - "Participation in a GEO is taken to be career-advancing…" Any evidence of this effect?	This was inferred from the statements made by GEO-5 contributors mentioned in the paragraph. Text was amended to make this clear.
§101, table 9 - 'Disciplines <3%' - do you mean "Other"	Yes, but we noted it this way to indicate that these were disciplines with less than 3% representation. * added to explain the range of other disciplines.
§102 - Do you have an estimate of number of contributors to previous GEOs, such as GEO-3 and GEO-4 for comparison?	Yes, for GEO-4. Number was added to the paragraph.
§111 - "The guidelines were clearly followed	The evaluation couldn't really explain this.

Comment	Evaluation team response
more for certain chapters than for others – North America and Europe, in particular, seem to have opted for going their own way in assessing and presenting their policy options". Why was it the case that Europe and North America and not the other regions? It could be an interesting lesson learned.	Additional interviews with the GEO team allowed us however to be more nuanced §111. The paragraph was amended with the text in bold: A lack of "real policy experts" among the regional chapter contributors was also often mentioned as a limitation. **The UNEP GEO team indicated that the North America and Africa Regional Chapter author groups were particularly limited in terms of having credible policy analysts.** The Policy Expert Group did develop **several iterations of a** guidance document to provide essential guidance on the objectives, scope, and broad methodology of the regional chapters to align with the requirements of the GEO-5 Statement**, but the final version[173] was not available before well past half-way through chapter development. The final guideline** proposed a structure and contents for the regional chapters, policy-related definitions and a stepwise policy appraisal approach. The guidelines were clearly followed more for certain chapters than for others – North America and Europe, in particular, seem to have opted for going their own way in assessing and presenting their policy options. **The evaluation was not able to identify a credible explanation for this other than the belated availability of structured guidance combined with a lack difficulties within the author teams to agree on a common policy analysis approach and appropriate chapter contents and structure.**
§119, table 11 - For this table/question, were respondents able to select/ identify more than one challenge? What is the total (n) of responses that this table is based on? You could consider adding percentages and show as 'top seven' of challenges.	The responses in the table were not suggested in the survey. These were collected as free text in answer to an open ended question in the author and reviewer survey "Do you have comments on the effort to develop policy options or advice for future efforts to do this?".
§155 - "Approximately 45 per cent of the authors reported that they did not have prior experience with an earlier GEO or with any other GEA." That is the majority, 55 per cent of authors had prior experience. What about reoccurrence of reviewers and members of the different working groups from previous GEOs? This could be an interesting lesson	We don't believe that the assumption is valid that authors with no prior experience in GEAs would be more able to bring new ideas and innovativeness in comparison to authors with prior experience. Innovativeness would have been an interesting line of inquiry though, which the evaluation did not really address. We merely wanted to know what proportion of

[173] Guidance document to Chapter Working Groups for Part II: 'Options for Regional Policy Action' - http://www.unep.org/geo/pdfs/geo5/ANNEX7a_GEO-5_Guidance_Part_II_Policy_Appraisal.pdf

Comment	Evaluation team response
learned – could be that a 50/50 balance is important to ensure previous experience and new ideas and innovativeness, or?	authors were "first timers" to estimate capacity building from participation in the process. Our assumption was that "first timers" could learn more from participating in GEO-5 than experienced authors. Unfortunately, we did not ask this question to reviewers or working group members.
§170 - GEO-5 did not come in time to influence the preparation of the UNEP Medium-Term Strategy and sub-programmes. Has there been any reference made to the GEO-5 findings in new project documents? How about other assessment related projects undertaken in UNEP Headquarters or regions?	No, we did look at 30+ project documents approved after the GEO-5 publication and did not find any referenced GEO-5 contents. The GEO-6 and UNEP Live project documents refer to the GEO-5 assessment as a process, but not to its contents. However, as the evaluation states, GEO-5 might very well have been consulted during project design without proper referencing in the project document as referencing of sources is often neglected in UNEP planning documents (including project documents). To answer the question a survey of the project design teams would have been necessary.
§181 - "GEO-5 is likely to support civil society action as an advocacy tool, though the scope of this could not be verified by the evaluation" – it is not clear if this is the view of the evaluation team, interviewees or survey respondents.	This is the view of the evaluation team. The sentence has been revised to make this clear.
§191, table 13 - Table 13 provides an informative and useful overview of planned budget and actual expenditures. If possible, it would be helpful to add the activities or outputs delivered against the outputs, for example, against output A (4) Design and implement a fellowship Programme that encourages the participation of young scientists, the GEO-5 project successfully delivered 25 fellows at no cost. Two aspects could be considered here: 1) GEO-5 was able to deliver despite a budget shortage of more than 20 per cent could indicate that planned costs of some activities were set too high initially?, and 2) GEO team demonstrated innovativeness (new or other ways of) delivering priority outputs.	Excellent suggestion. Actual outputs/activities delivered have been added in italic in the table. In addition to the aspects mentioned in the comment, there is also the fact that several activities were not delivered or at much smaller scale, or that activities were conducted with in-kind support from UNEP and others.

Comment	Evaluation team response
§245 ff - Suggest using same format for all recommendations. This would be to include specific sub-recommendations for recommendation 2 and 4 as have been done for recommendations 1 and 3. On sub-recommendations, for example, recommendation 2 which reads that UNEP should ensure GEO is a continuously updated undertaking and provides the information needed at different scales… How does the evaluation team recommend that should UNEP do this? This could be related to the data issue (who's data to use/platforms and timeliness/newness of data, and use of a data working group in the GEO process), and how other assessment outputs can support or feed into the GEO report. On recommendation 4 UNEP should build capacity to use GEO information and analyse at smaller scale points of use. Some questions to consider: Does the evaluation team have concrete suggestions for HOW this could be done? Would it be useful to consider the target audience by needs of developed, developing and least developing countries? Should GEO-5 be the flagship for the capacity building component of global assessments lead by UNEP, or are there alternative processes? Did GEO-5 demonstrate that capacity building component (because it was left unfunded and yet the GEO team produced a 'good' report) was not important for a future GEO process? Did the evaluation team find that crosscutting issue of gender (and human rights) was adequately addressed in the GEO-5 report or would be there be need to build more capacity in this area?	Suggestions taken on board in the revised recommendations. The evaluation found that capacity building was important but neglected relative to other priorities. Stronger emphasis on capacity building could have increased participation of developing countries and non-science interests therewith increasing legitimacy of the assessment, and enhanced the quality of the policy analysis and hence salience at lower scales. Also, capacity building for use of the assessment would likely have contributed to use at lower scales and by a more diverse group of interests. The cross cutting issue of gender is an example of an interest that would have benefited from capacity building, as it received a very limited treatment in the GEO-5 assessment.
Majid SHAFIE POUR **Government of Iran** **GEO-5 Evaluation Reference Group**	
Much of the evaluation findings of GEO-5 was recently presented in the GEO-6 consultation meeting in Berlin being captured in 8 bullets. The meeting appreciated the efforts and took them on board to be effectively addressed in GEO-6. Good job done.	Thank you. We are pleased to see that the evaluation is being used for the planning of GEO-6.

Peter Gilruth **Director, Programme Strategy and Planning Team** **Previous Director DEWA/UNEP**	
Please find my comments attached in a series of sticky notes. Perhaps the last one is the most important. I think the Evaluation Team did a great job!	Thank you.
§4 – figure shows different than the secured budget listed above	Indeed. The cost mentioned in §3 excludes programme support costs and "add-ons" to the GEO-5 process (see Table 7 with detailed budget).
§10 point g – the team or the process?	The process – added.
§15 – "This preliminary findings note was mainly used internally in UNEP as it was not shared with all relevant UNEA participants contrary to the suggestion by the Evaluation Office. " not sure what this means as I don't remember receiving the note	We were asked by the GEO-6 team to provide preliminary findings for the UNEA meeting.
§17 – because?	This is explained under paragraph 221.
§20 - I thought GEO-3 was UNEP's high point in connecting capacity building (fellowships. etc) with the GEO process. If so, then it is an important milestone in the GEO's history.	We wouldn't really know. We only have partial information on the GEO-3 process. An evaluation of GEO-3 by the UNEP Collaborating Centres underscored the importance of capacity building but there was a need for tailoring it better to the different stakeholders and make it more continuous. It seems that the fellowship programme started with GEO-4.
Table 3 - the science and educational communities might actually be higher up on the list because they are longer term users of the product.	The list is taken from the GEO-5 outreach strategy. The scientific and educational community are indeed important, but it would be difficult to argue why we would consider them more important than most other UNEP Major Groups and Stakeholders. We therefore did not try to order the stakeholders in order of importance.
§32 - There are two important products not cited: Measuring Progress (on GEGs) and Keeping Track (state of environment based on a few key indicators). These came out before RIO+20 and greatly helped create awareness.	Yes, we have added those to the paragraph. We had mentioned them later in the report.
§50 - Perhaps another point that could be brought out more clearly is that the GEO, unlike the ARs of the IPCC , IPBES, WOA, etc, is a synthesis of	Yes, this is made clear in the revised paragraph.

various thematic assessments. The role it fills in the assessment landscape is the integrated view across the themes and the link to policy. This is why the donors have continued to support it in spite of the increasingly complex assessment landscape.	
§84 line 7 delete the word "was"	Done
Table 11 – very useful!	
§136 - perhaps the biggest missed opportunity for capacity development was to have trained developing country experts in the art and science of policy analysis. This could have been an investment that could pay off after some years as the experts take the knowledge and methodologies into their workplace.	This is a valid point was already made in §150 but was also added to §136.
Table 13 – these numbers do not add up	Yes, because the table presents, for each output, only the figures for activities on which savings were made, and then the output total (including activities on which no savings were made). A footnote has been added to clarify this.
Recommendations 1, 2, and 4 point to UNEP Live. The evaluation desperately needs a recommendation that moves the GEO from the current approach to one based on bottom up approaches to conducting GEA's with strong national involvement and improved data availability leading the way. This will improve the link between science and policy and increase national ownership of the product AND product, which is what GEO is all about.	Recommendations were thoroughly revised and include the need for stronger bottom-up approaches.
Pierre Portas **President, Waste & Environment Cooperation Centre** **Marseille, France** **Coordinating Lead Author "Chemicals and Waste" Chapter of GEO-5**	
Many thanks for giving me an opportunity to comment on the draft terminal evaluation report. First, I think that you and your colleagues did a very serious and competent job and I have no comments to make on the evaluation. There is, however, one area that I believe might require further thinking. It concerns the Recommendations part of the report.	Thank you.

There is no automatic transfer of knowledge from science to education. The meaning of words is captured in the idea it carries. But to transfer an idea or a concept requires the elimination of generalities and bringing the focus on the multitude of possibilities of human interpretation. Speeches and sophism will organise knowledge and ideas to pre-figure a coming truth that, once the speech is delivered, becomes reality. Consequently the Discourse is, in this case, useless. Strange enough, the connection between science and education could be approach via a number of philosophical avenues. If you are a Christian who believes that the world has been created 15.000 years ago, the scientific findings will be transformed into a textual context that would fit such belief. It will be both truncated and falsified for it to become a specific reality. But the scientific findings will continue to parade in scientific papers as being valuable. In this case there is no transfer from science to education. What matters is then the reality of the word you use. It means you have to strip the word from all its ideology or hidden purpose. Find a way to express a reality that is universal and can be verified. The controversy about climate change is not based on scientific findings but on political arguments. The scientific findings are used for purposes other than coming to a reality; noting that such reality may be changing overtime due to new knowledge. The climate change discussion is about what means of living together you want tomorrow, not just about the carbon cycle. Science cannot resolve people's problems. But science is constructed in such a way as to bring clarity to unsolved issues or uncertainties. Once, an intellectual landscape becomes clearer, meaning the words or symbols used are immune from ideological interference, through scientific knowledge, it paves the way for finding solutions that fit a common understanding of the material world. This is applicable to the GEO process and, indeed, as the recommendations stipulate you need to open the book to other stakeholders, not just scientists. That brings me to a number of points that might be considered in future GEO process:	Thank you for these interesting thoughts.
• GEO is too big, too long and contains too much information. Too much information defeats the purpose of informing.	This is captured in recommendation 1d). But of course there were multiple side-products providing shorter and more targeted versions for diverse audiences.
• GEO has not succeeded in bringing to light	This is an interesting suggestion but it

the two or three underlying fundamental ideas that constitute the matter of the report. It is still like a Christmas tree.	would be very challenging to distil only two or three fundamental ideas that would summarize and explain the current global environmental state and trends. The evaluation recommends to produce periodic assessments at lower scales or focussed on one theme, using a bottom-up process.
• There is a distance between the GEO report on a shelf and the realities it describes. The purpose of GEO is ambiguous. On one hand it is dedicated to politicians and, on the other hand, it is supposed to build a bridge between Science and the common citizen. It means that you should select a politically correct message for the institutions while addressing a more radical message for the citizen. Additionally, words like sustainable development belongs to the category of generalities and is not useful as a tool for action.	GEO is really supposed to bring science to policy discussions, not to the general public. There are many channels through which the general public can be reached and GEO merely provides the data and analysis, not the channel.
• Why not select one common central theme and have all the different clusters (climate change, water, chemicals, waste, etc.) contributing to it and formatting the necessary linkages among a variety of disciplines. This might bring coherence into the information gathering and the messages to deliver. At the end of the day, Nature is one. It is important that the theme be selected according to the analysis of what is most overarching to consider now and in the future and not let such decision to States only. You need to produce universality and therefore avoid the egotistic interest of nations.	Another interesting suggestion but probably unrealistic considering the highly diverse science and policy agendas that need to be satisfied by a GEO.
• Another issue has to do with the way the different experts deal with the matter. I have noticed that, in many instances, you face a repetition of what was previously done with some adjustments. There is seldom some novel thinking (the water chapter is a good example of such repetitive practice). That leads to some omerta for anyone who might bring new concepts or a different way of addressing issues. It is time to use critical minds and not take for granted the technocratic experts' syndrome.	The GEO is a meta-assessment based on verified data and peer reviewed scientific analysis. The nature of GEO doesn't leave room for novel thinking unless the ideas have already been accepted by a large number of scientists and are not contested significantly. There are other venues where critical minds and novel thinkers can publish their ideas.
Ronald Mitchell, Professor **University of Oregon**	

Eugene, Oregon, USA **GEO-5 Evaluation Reference Group**	
I have just read the GEO-5 evaluation report and want to commend the authors for a great job of doing some great analysis of a large amount of information within a challenging structure dictated by organizational and other factors. Overall, this looks great and I think its good as is.	Thank you.
That said, there are a few suggestions I have for improving the document. I offer these simply as suggestions with the hope that some are useful and the others can be rejected as not accurate or appropriate. So, here are a few:	
a) I would love to have more of the "key findings" up front. It takes a while for the document to "get going" with a lot of (rather boring) description at the front end. This seems, in my limited experience, to be a common characteristic of these documents and perhaps its dictated by UNEP rules or report protocols. Nonetheless, my gut sense was that I had to force myself to read past that first 10-20 pages in hopes that there was better content to come. There was, of course but still. So, if that can be edited to engage the reader a bit more with the "takehomes" that are to follow, that would be good, I think.	We agree, but the report is constrained by the template used for UNEP evaluation reports. However, the final report has an executive summary up front focussing on the key findings of the evaluation.
b) I really liked Table 14 – that is a great overview. Why not have that at the start? Then the reader is engaged, if only to find out why you praised some aspects and critiqued others. I would have the assessments spelled out (not just H, S, etc) but even color coded or with smiley faces and frowny faces, or stars or something. Make something that easily shows where GEO-5 did good and where "not so much." That takes the bull by the horns and really gets a conversation going --- some actors will defend what they did when it is critiqued, others will say "that didn't turn out as well as you guys say it did." But if the point of this report is to prompt a discussion about how GEO can improve, then that is exactly the kind of discussion you want to have and I would recommend structuring the report to prompt it. Table 14, reformatted and put at the front as the "summary of our assessment of GEO-5"	The executive summary of the final report has been structured along the main evaluation criteria. Table 14 was added to the executive summary (numbered Table ES1). Ratings have been spelled out and colour-coded as suggested.

would kickstart the conversation I think, in very positive ways (even if it did involve some conflict, initially).	
c) I like that judgments were made about some aspects doing well and some not so well. That took a bit of courage and I am glad to see it.	Thank you. This is an independent evaluation so we did not hide the weaknesses we found.
d) I particularly liked the assessments of how well the balance across geography, gender, disciplines was done. That is a nice section of the report.	Thank you.
e) I also liked the nuance with respect to where GEO-5 succeeded and where it came up short with respect to influencing policy.	Thank you.
f) Overall, I found the latter half of the document quite strong (including the "theory of change" part) whereas I found the first half much less compelling. If there is any way to either delete the descriptive elements that dominate the first half, that would be good (I don't imagine you can do that but if you could, that would be great).	As mentioned above, the report structure is constrained by the template used for UNEP evaluation reports. The executive summary up front focusses on the key findings of the evaluation.
g) Finally, I think a really punchy 2-3 page executive summary (even a "press release" type document) would be great – have that include the major findings of what GEO-5 did well and what not so much. You wouldn't want this going out to the press but instead this would just be a good document that would prompt people to actually read more of the full thing. It is unlikely, given the busy schedules of the target audience for this, that many will read the whole document. But having some key findings in a 2-pager might lead them to read it and then to read some clearly-targeted sections of the document. Indeed, you might even have a guide that said something like "if you are interested in X, turn to page 22" so that people could "dip in" to the document at appropriate points. A table of contents will do this but I am thinking something even more engaging – perhaps a good overview webpage that had hyperlinks of the "if you are interested in…" variety.	The executive summary is punchy but slightly longer than suggested. We have also prepared a powerpoint presentation of the evaluation which will be posted online with the report.
So, these are my comments and suggestions for improving an already very-strong document. Again, hats off to the authors who did a great job on analyzing in a strong and compelling way that nicely balances analytic criticalness with diplomatic	Thank you once again.

niceties (at least to me it seems to). I hope some of these comments are helpful as you go through the revisions.	
Paul Glennie **UNEP-DHI Centre for Water and Environment** **Coordinating Lead Author "Water" Chapter of GEO-5**	
I've only had very limited time to scan the document, so forgive me if my comments are off the mark.	
The report reads very well. Very clear.	Thank you.
I like the theory of change section, though:	
There is quite a lot of focus here (and in other places in the report) on contribution to decision-making processes. My understanding (as a CLA) was that we wanted to take the message to Rio+20, but beyond that I wasn't sure how/if the report would be used. i.e. this would be very challenging at the national level. Anecdotally (from people talking about experience from previous reports), I was under the impression that one of the primary uses of GEO reports was in academia/research (schools and universities, and I think primarily for teaching rather than research purposes), so I was surprised to see this user 'group' not featured a bit more clearly, and specifically downplayed in section 4.3.1.5. I partly saw our role as synthesising global knowledge (the majority of which was scientific/academic) (a bit like IPCC reports), so would have thought our findings would 'feed back' into this sphere somehow.	This is indeed our conclusion: the GEO-5 was primarily targeted towards Rio+20 and global decision making at this venue. Looking at use of GEO for teaching purposes was indeed downplayed in the evaluation, because it doesn't feature in the objectives of GEO-5. But we agree that this would have been an interesting unintended result to explore, if time and budget for the evaluation had allowed.
Perhaps it might be recommended that a bit more attention is given in GEO-6 to understanding this relationship (science supports GEO which in turn feeds back into the science world). This all links in with the scientific credibility etc.	We have no doubt that GEO-5 feeds back into science (and education), as its scientific credibility is very high. In fact, scientists and academics are probably the best served interests by GEO-5 as an integrated, multi-thematic synthesis of the state of the environment, linking to a vast amount of peer reviewed scientific literature for further reading. The challenge for future GEOs is rather how to also serve other interests, in particular at lower scales.
I may well be missing some of the context here, but I was surprised by the sentence in §78 "In the view of the evaluation, the weight of grey sources and traditional knowledge in the balance should increase as the scale of the assessment and its intended use becomes more local and sector-specific and concerns more local and specific interests." For a global assessment to be relevant at	The local scales are indeed beyond the scope of the GEO-5 and the evaluation has recognized this throughout the report. The sentence in §78 was amended as follows: "In the view of the evaluation, the relative weight of grey information sources and traditional knowledge in the balance should increase as the assessment

the global, (sub-)regional, national, and local scales just seems to be trying to do too much! I've been involved in a few global assessments and it is hard enough being relevant at the national level, when some countries probably have more detailed knowledge/information of their own countries than we can provide from a global assessment. The scope would just seem to be too broad for my liking. Section 4.2.3.1. talks about scales and only global, regional and national (with challenges at the national level). And the issue is taken up again quite strongly in the conclusions and recommendations. I suppose my question is are these recommendations being made based on: (i) inputs received during the evaluation process; (ii) current thinking/literature about GEAs; (iii) or more the evaluation authors' views. I suspect it may be a bit of a combination of these three, but I think it needs to be rooted in point (i) to come out so strongly in the recommendations.	becomes more targeted at informing national and sector-specific decisions. In other words, while global scales and broad spectrum assessments targeted at global decision making venues and bodies could rely more on peer reviewed data and analysis and be considered adequately (but not fully) legitimate, more localised and sector-specific assessments for which use at national/(sub-)regional levels is important would need to welcome greater contributions from grey literature and traditional knowledge to uphold their legitimacy in the eyes of the relevant stakeholders." Going forward the evaluation recommends that future GEOs move towards a bottom-up approach.
I find 4.2.3.2 interesting, particularly the consideration that there might be more 'policy experts' in the GEO author group, to complement the scientists. I suppose the middle ground is people involved in natural resources management (particularly public authorities).	Agreed.
In §220 it is written 'Each chapter had up to three CLAs', but the water chapter had 4. (actually this was initially 2, then on the eve (literally) of the first production meeting an author was invited to be a CLA, and a fourth was invited shortly after the first production meeting, apparently as a need was identified to have a fourth CLA to support. This arrangement had its advantages and disadvantages!	Verified and corrected.
In §221, two external review processes are mentioned. Not sure if the first 'internal' UN-review is mentioned in the evaluation report. I remember 3 significant review processes. Zero draft – internal / UN review; first draft – government (broadly); second draft – scientific (broadly). As a CLA I remember trying to deal with the numerous and often conflicting review comments, whilst still trying to keep chapter length to a minimum, was one of the hardest parts of the job. Comments could number in the hundreds for each review stage. I'm not sure if this is dealt with in the evaluation report (and it may well be too late to adequately address it now), but I think it should be a part of this and/or future evaluations. Often the comments could be conflicting within the same review stage (e.g. one	This is a valid point and it was inserted under §221.

country says ‘do this’, another says ‘do that’), or we might address a comment in one review stage (e.g. by taking something out), and then in the next stage the comment comes to put it back in again. And sometimes authors did not agree with review comments from a technical viewpoint (the comments may have been politically-based), so working out the way forward was challenging. Sorry, this is long-winded but a major part of the whole GEO process for me was trying to resolve these issues around the reviews, and I think it is an area that needs to be acknowledged. Our (UNEP) back-stops and the GEO central team were supportive in helping us try to deal with the more sensitive issues, but often they also found it hard to provide advice I think. Some guidelines on how to address review comments, possibly even a session at one of the production meetings (going through some different scenarios), would be helpful I think.	
§246, Recommendation 1: this partly goes back to the issue of scale, but also a question of how broad should the scope of GEO be? To me some of these recommendations seem to be moving away from a GEO assessment and into the realm of broader UNEP mandate (though I agree they are relevant at a broader level).	Indeed, these recommendations are aimed at future GEOs that will include assessments at multiple scales.
Minor comment: in Annex 9 I was surprised not to see the UNEP-DHI Centre for Water and Environment (now UNEP-DHI Partnership: Centre on Water and Environment), listed as one of the project partners, as most of my time was paid for by the Centre, the director of the Centre was a Lead Author of the water chapter, and there was a member on the SPAB. But I suppose if it was a direct reference to other sources then there is not much you can do about that.	UNEP-DHI Centre was added in the annex.
Jane Barr **Independent Consultant** **Montreal, Canada** **Coordinating Lead Author “North America” Chapter and Lead Author “Drivers” Chapter of GEO-5**	
I have read it all through and appreciate how comprehensive it is and its clarity in presenting the conclusions. I also applaud UNEP for undertaking this evaluation, since it's so important to learn and build on past efforts. I have no other comments to make and thank you for asking for my input.	Thank you.
Carol Hunsberger **Assistant Professor, Department of Geography**	

Western University **London, Ontario, Canada** **Coordinating Lead Author "Land" Chapter of GEO-5**	
Thank you for sending this report, which is very thorough and interesting.	Thank you.
After taking a quick look, I have a question about Figure 3, which shows the average HDI for authors in each chapter. What caught my eye was that North America is listed with an average HDI of 48 when presumably most of its authors came from the only two countries in that region: Canada and the USA (HDI 8 and 5 respectively). I did my own HDI calculation for the authors of Land, the chapter I worked on. Using the author's nationalities, the chapter average HDI came out to 66. Using the countries of authors' institutional affiliations, i.e. country of residence, it came out to 35. But the Land chapter is listed as only 11 in Figure 3. I wonder if this could be double-checked? This is obviously a minor point in an otherwise very impressive report. Thank you again!	We appreciate much the effort to delve into our report to this level. We very much appreciate your interest. And as you will read below, your query has identified an error that we will correct as well as some consideration that we will use to reflect on our estimates using HDI. Several considerations apply to this question: 1. We have used median rather than mean – however for the North America chapter there is not much difference since the contributors were fairly tightly clustered. 2. We used the 2012 HDI values where Canada ranks 11, not 8. It seems that the 2013 rank for Canada moved to 8. This is interesting, perhaps we should have used a three year mean rather than a single year. In using 2012 we were actually using the report year, if doing it again we might have gone back to 2010 which is when authors were being recruited, and perhaps a 2009-2011 mean would have been best. In any case, for the report Canadian authors had an index value of 12. 3. Because we needed to assess all Chapters and GEO-5 overall some of the ambiguity in the author lists, while understandable, was problematic for us. The first was the issue of institutional country vs nationality, the second was that a number of contributors to GEO-5 participated in two or more Chapter teams. Our choice was to seek information from contributors in the survey by asking them what Chapter they judged their contributions to be most important, and to identify their nationality and institutional residence. Through key informant interviews we determined that nationality was what was most influential in judgments about where an author was from. As a result our calculations are use

	survey data rather than the author lists 4. The query led us to go back to the syntax file for our calculations and I found two errors where data from individual chapters was transposed. As you identified one was North America the other West Asia. This is an error that we should have picked up in QA. These errors have been corrected and a systematic review of all our HDI calculations and analysis was undertaken. As part of that review we decided that we could improve the data by using administrative data to replace missing values from the survey arising from respondents not completing the citizenship question or in a few instances not specifying the Chapter they contributed to. Revised calculations using this data led to changes in some of the Chapter HDI values, however it did not alter the observations. 5. For the Land chapter the differences between our calculations appear to result from the first three points. The syntax for the calculation was correct. We had 23 responses from Land Chapter contributors (authors and reviewers). However the HDI value has changed with the revisions noted in point 4.
Renat PERELET **Research Leader, Institute for Systems Analysis** **Russian Academy of Sciences** **Moscow, Russia** **Coordinating Lead Author "Policy Options: Regional Summary" Chapter of GEO-5**	
The 1st Draft Report consist of five chapters and contains 68 pages, covering substantive issues, Introduction and Conclusions and five Recommendations as well as lists of acronyms, figures, tables, and annexes. The terminal evaluation was undertaken in response to accountability requirements in line with the UNEP Evaluation Policy to assess project performance (relevance, effectiveness and efficiency) and determine actual and potential impacts stemming from the project, including their sustainability (p.7 §5). A remark can be appropriate here: p.8, §6, line 4 should read: "relevance, effectiveness and efficiency" .	Corrected.

The evaluation was to promote learning, feedback, and knowledge sharing through results and lessons learned among UNEP and GEO-5 partners.	
The report initially aims to provide answers to nine key evaluation questions (pp.8-9): [key questions listed] It could be suggested that the Report have a section in which all the nine questions were answered. At this stage, the answers are scattered across the Report.	Answers to the key evaluation questions can be found largely concentrated under the output and effectiveness assessment.
Then, the evaluators switch to use a theory of change "as a key component for evaluation" (p.19) and consider six attributes of the assessment process: credibility (4.2.1), legitimacy salience (4.2.2), salience (4.2.3), capacity development (4.2.4) , timeliness (4.2.5), communication (4.2.6). The last section of chapter 4 sums up the findings on all these attributes but timeliness.	§149 includes a summary on timeliness: "The GEO-5 assessment was completed in time for the Rio+20 Conference. Even if the main report came quite late to be fully digested, its precursor products came well on time to feed into the preparatory discussions leading up to the Conference."
The report points out that "less attention is given to legitimacy in the eyes of lower scale" (p.46, §146). The purpose of Fig.1 (p.21) is not quite clear since it does not appear in GEO-5. Does the evaluation report hint it should be there?	The purpose of figure 1 is explained in §45-48 and in footnote 35. It is not supposed to figure in the GEO-5 report, but could have been useful during the GEO-5 design stage.
At this point the Report changes its assessment rut to the GEO-5 performance triad: relevance, effectiveness (4.3) and efficiency. However, it adds a fourth section on "sustainability and replication" (4.4) that is followed by the section on efficiency (4.5) and then the GEO-5 performance analysis extends to consider "Factors affecting performance" (4.6), such as "preparation and readiness" (4.6.1), "project implementation and management"(4.6.2), Stakeholder participation and public awareness (4.6.3), Country ownership and driven-ness (4.6.4), Financial planning and management (4.6.5), Supervision, guidance and technical backstopping (4.6.6), Monitoring and evaluation (4.6.7).	
The above four lines of evaluation with a 'lining' by the theory of change components make the Report a little strenuous to read and comprehend.	The evaluation team was bound by the evaluation report format of the UNEP Evaluation Office. This format is based on the standard OECD-DAC evaluation criteria and designed to be appropriate for most evaluations. Using a common report structure helps with synthesising performance across projects.

On several occasions, the Report insists that the Global environment outlook (GEO-5) should have placed more emphasis at the national and even local levels. It is further emphasized in Recommendations 1, 2 and 4. The report points out that The primary objective of the GEO-5 project directed GEO-5 to help inform decision-making at multiple scales (p. 42, § 128). This argument could be challenged because GEO-5 is a global environmental assessment exercise and it seems to rightly deal mainly with the global and regional levels. Attempts made in Chapter 15 (Policy Options::Regional Summary) to single out accomplishments at the project level are not found successful by the Evaluation Report.	The source for §128 is the approved UNEP Project Document, which is the ultimate reference for evaluations. However, it was indeed unrealistic to expect that GEO-5 would inform decision making below the national scale, and we have therefore removed reference to local scales from the final evaluation report.
In sum, the 1st Draft GEO-5 Evaluation Report is a useful document for UNEP in designing GEO-6 and numerous stakeholders, primarily national decision makers as a complement to GEO-5. However, the report may need to streamline its findings and put them in a more orderly format. At present, there are four overlapping dimensions of evaluation criteria (a) the nine questions not clearly answered, (b) the theory of change applications, (c) performance criteria (relevance, effectiveness and efficiency), and (d) sustainability and replication etc.	As mentioned above, the evaluation team was bound by the evaluation report format of the UNEP Evaluation Office.
In addition, the consultants' terms of reference should be annexed to the report to make clear what was tasked and what extra criteria were added.	They are part of the annexes.
Exploring public-private intellectual and financial partnerships in making GEO-6 may be suggested.	The revised Recommendation 3 c) reads: Stronger partnerships should be established with the appropriate organisations to address the challenges of developing the needed policy understanding and to span the boundaries between where policy is analysed and where decisions are made. UNEP Regional Offices and Collaborating Centres could play an important role in this regard. Successful efforts by the for-profit sector should also be included but an appropriate balance needs to be achieved between credibility and confidentiality of information from these organisations, perhaps using public-private intellectual partnership vehicles.

*) Paragraph numbering in the comments was adjusted to correspond with the numbering in the final report.

Annex 15: Evaluation Office quality assessment of the evaluation report

All UNEP evaluations are subject to a quality assessment by the Evaluation Office. The quality of both the draft and final evaluation report is assessed and rated. The quality assessment is used as a tool for providing structured feedback to the evaluation consultants.

	UNEP EO Comments	Draft Report Rating	Final Report Rating
Substantive report quality criteria			
A. **Quality of the Executive Summary**: does the executive summary present the main findings of the report for each evaluation criterion and a good summary of recommendations and lessons learned? (Executive Summary not required for zero draft)	Final report: Yes, good summary.	n/a	5
B. **Project context and project description**: Does the report present an up-to-date description of the socio-economic, political, institutional and environmental context of the project, including the issues that the project is trying to address, their root causes and consequences on the environment and human well-being? Are any changes since the time of project design highlighted? Is all essential information about the project clearly presented in the report (objectives, target groups, institutional arrangements, budget, changes in design since approval etc.)?	Draft report: Description of the historical and UNEP institutional context is good. Project information is well presented. Broader context on need for keeping the environment under review and existence of many other GEAs needs to be added. Final report: Done	4	5
C. **Strategic relevance**: Does the report present a well-reasoned, complete and evidence-based assessment of strategic relevance of the intervention?	Draft report: Alignment with UNEP's mandate is well assessed. However, this section should also discuss whether the GEO-5 project's objectives consistent were with global and regional environmental issues and needs? In other words: was there really a need for a GEO-5? Refer back to context. Final report: Done	4	5
D. **Achievement of outputs**: Does the report present a well-reasoned, complete and evidence-based assessment of outputs delivered by the intervention (including their quality)?	Draft report: Well-structured section, but many revisions needed: - Re: credibility, not only views of assessment producers are important, but also those of intended users. - Re: Legitimacy, also important to look at process and contents, not only at nature of contributors to the assessment. - The summary on salience needs to be re-written. - Re: capacity building, this section should be re-written completely. It shouldn't be about whether the right	4	6

	capacity was mobilized to produce the assessment, but about what the project did to build capacity for conducting and using GEO-5. Also, focus should be on output delivery rather than outcomes. - Communication efforts also need to be assessed – including information on media pick-up and website downloads Final report: Done, very strong section		
E. **Presentation of Theory of Change**: Is the Theory of Change of the intervention clearly presented? Are causal pathways logical and complete (including drivers, assumptions and key actors)?	Draft report: Good, but drivers and assumptions need to be explicit in the narrative. Final report: Done, very good TOC and fully used in the evaluation	4	6
F. **Effectiveness - Attainment of project objectives and results**: Does the report present a well-reasoned, complete and evidence-based assessment of the achievement of the relevant outcomes and project objectives?	Draft report: Assessment of direct outcomes focuses on use of the assessment at global and national levels. Also need to assess use by UNEP for strategic planning, and capacity building gains from participating in the GEO-5. Re: likelihood of impact, text mostly relates to outputs and direct outcomes. Section needs to discuss what impact on the environment and human well-being the GEO-5 is likely to have, using the TOC. Also needs to say here that it is very hard to assess impact, considering that it is difficult to confirm use of the assessment in environmental decision making, and that many factors and conditions come into play before environmental decisions lead to improvements in environmental and human well-being conditions. Needs to look at presence of drivers and assumptions. Final report: Done	3	5
G. **Sustainability and replication**: Does the report present a well-reasoned and evidence-based assessment of sustainability of outcomes and replication / catalytic effects?	Draft report: Quite good, but all dimensions of sustainability and replication & upscaling need to be assessed and rated separately (see TORs). Re: replication, an interesting question to address here would be the replicability of the GEO-5 process at smaller scales. Successful replication of the DPSIR approach has been done at multiple scales, but this was not new in GEO-5. What about the novelties in GEO-5: focus on goals and analysis of policy options (and others?). Are these replicable and should these be replicated at different scales? Note here as well that a common	3	4

	methodology for policy analysis and GEO training modules were not prepared as planned, which would have helped replication. Final report: Sustainability section was enhanced but no separate ratings provided for 4 dimensions of sustainability as per the TORs Replication/up-scaling assessment enhanced as suggested.		
H. **Efficiency**: Does the report present a well-reasoned, complete and evidence-based assessment of efficiency?	Draft report: Overall hard to assess as no expenditure per output data was available. HS rating might not be justified – some processes were very expensive and could possibly have been done differently (e.g. the high-level meeting costing close to half a million US$). Final report: Much more detail provided and rating lowered to better justified S	4	5
I. **Factors affecting project performance**: Does the report present a well-reasoned, complete and evidence-based assessment of all factors affecting project performance? In particular, does the report include the actual project costs (total and per activity) and actual co-financing used; and an assessment of the quality of the project M&E system and its use for project management?	Draft report: Re: preparation and readiness, could be more detailed using design assessment done during inception. Re: financial management – need to re-write the criticism on lack of output-based accounting placing it in a broader context Final report: Done	4	5
J. Quality of the conclusions. Do the conclusions highlight the main strengths and weaknesses of the project, and connect those in a compelling story line?	Draft report: Conclusions could be enhanced Final report: Improved	4	5
K. **Quality and utility of the recommendations**: Are recommendations based on explicit evaluation findings? Do recommendations specify the actions necessary to correct existing conditions or improve operations ('who?' 'what?' 'where?' 'when?)'. Can they be implemented?	Draft report: No recommendations included Final report: Report has 5 recommendations, well spelled out and focussed on future GEOs	1	5
L. **Quality and utility of the lessons**: Are lessons based on explicit evaluation findings? Do they suggest prescriptive action? Do they specify in which contexts they are applicable?	Draft report: No lessons included Final report: Lessons are implicit in the conclusions, not listed separately.	1	3
Report structure quality criteria			
M. **Structure and clarity of the report**: Does the report structure follow EO guidelines? Are all requested Annexes included?	Draft report: Report structure is broadly OK but need to separate out all dimensions of sustainability, replication & up-scaling. Annexes need to be completed and polished. Final report: dimensions of sustainability, replication & up-scaling not separated out. Annexes have been completed and polished.	4	5

N.	**Evaluation methods and information sources**: Are evaluation methods and information sources clearly described? Are data collection methods, the triangulation / verification approach, details of stakeholder consultations provided? Are the limitations of evaluation methods and information sources described?	Draft report: OK, need to add more details on surveys Final report: Done	4	6
O.	**Quality of writing**: Was the report well written? (clear English language and grammar)	Draft report: Good, sometimes plainer English could be used Final report: Better, but still somewhat academic.	5	5
P.	**Report formatting**: Does the report follow EO guidelines using headings, numbered paragraphs etc.	Draft report: Yes Final report: Yes	5	6
		OVERALL REPORT QUALITY RATING	3.6	5.1

The quality of the evaluation process is assessed at the end of the evaluation and rated against the following criteria:

		UNEP EO Comments		Rating
Evaluation process quality criteria				
Q.	**Preparation:** Was the evaluation budget agreed and approved by the EO? Was inception report delivered and approved prior to commencing any travel?	Initial budget was quite modest. Additional budget was approved by DEWA after evaluation was already half-way, but still not enough to answer all evaluation questions in-depth.		4
R.	**Timeliness:** Was a TE initiated within the period of six months before or after project completion? Was a MTE initiated within a six month period prior to the project's mid-point? Were all deadlines set in the ToR respected?	Project was extended after the TE was initiated. TE was completed before project end. This was OK as TE focussed on core outputs of the GEO-5 project which were delivered by end of 2012.		6
S.	**Project's support:** Did the project make available all required documents? Was adequate support provided to the evaluator(s) in planning and conducting evaluation missions?	Yes, the GEO team was very forthcoming with information. However, despite numerous requests financial information was never provided in a format that would allow analysis by the evaluation team.		5
T.	**Recommendations:** Was an implementation plan for the evaluation recommendations prepared? Was the implementation plan adequately communicated to the project?	Yes		6
U.	**Quality assurance:** Was the evaluation peer-reviewed? Was the quality of the draft report checked by the evaluation manager and peer reviewer prior to dissemination to stakeholders for comments? Did EO complete an assessment of the quality of the final report?	Yes		6
V.	**Transparency:** Were the draft ToR and evaluation report circulated to all key stakeholders for comments? Was the draft evaluation report sent directly to	Yes		6

	EO? Were all comments to the draft evaluation report sent directly to the EO and did EO share all comments with the commentators? Did the evaluator(s) prepare a response to all comments?			
W.	**Participatory approach:** Was close communication to the EO and project maintained throughout the evaluation? Were evaluation findings, lessons and recommendations adequately communicated?	Yes, several intermediate outputs were delivered to keep evaluation stakeholders informed about emerging evaluation findings and recommendations		6
X.	**Independence:** Was the final selection of the evaluator(s) made by EO? Were possible conflicts of interest of the selected evaluator(s) appraised?	Yes		6
		OVERALL PROCESS RATING		5.6

Rating system for quality of evaluation reports and process

A number rating 1-6 is used for each criterion: Highly Satisfactory = 6, Satisfactory = 5, Moderately Satisfactory = 4, Moderately Unsatisfactory = 3, Unsatisfactory = 2, Highly Unsatisfactory = 1

The overall quality of the evaluation report is calculated by taking the mean score of all