

Outcomes Document

Multidisciplinary Expert Scientific Advisory Group (MESAG) Meeting for the Seventh Edition of UNEP's Global Environment Outlook (GEO-7) March 14-16, 2023

On March 14, 2023 the Multidisciplinary Expert Scientific Advisory Group met to consider the following agenda items:

- Welcome and introductions.
- Introducing the GEO-7 mandate, process and scope.
- Review of the MESAG Terms of Reference and draft procedures.
- Monitoring the scientific credibility of GEO-7, *a brief from assessment co-chair.*
- Presentations from experts working on the methodologies for solutions pathways and modelling outlooks being developed in GEO-7.
- Discussion on the methodologies for solutions pathways and modelling outlooks being developed in GEO-7.

On these agenda items, the outcomes were:

- A briefing from the GEO-7 assessment co-chairs on their interaction with the MESAG to oversee the scientific credibility of GEO-7 (undertaken Tuesday, 14 March during the afternoon session).
- The MESAG discussed and accepted their Terms of Reference as in the [GEO Procedures](#) section 4.3.
- The MESAG reviewed and amended the draft procedures document which will be circulated with the outcomes document for adoption on a no objection basis.
- All draft working documents of the MESAG will be shared in Word format and final documents will be shared in pdf.
- The MESAG welcomed the presentations from the solutions pathways and outlooks Coordinating Lead Authors (CLAs).

On March 15, 2023 the Multidisciplinary Expert Scientific Advisory Group met to consider the following agenda items:

- Discussion on the draft MESAG Procedures
- Discussion on the GEO-7 review process
- Discussion on how to provide scientific oversight and advice on identifying and selecting additional authors, review editors and fellows
- Provide guidance on the profiles and roles of selected collaborating centers
- Presentation on the GEO-7 budget
- Discussion on the MESAG workplan

On these agenda items, the outcomes were:

- The MESAG decided there will be no procedure for alternate members, therefore following the Bangkok meeting, no MESAG members will have alternates.
- Identification of experts to participate in GEO-7 will be done through the official nomination portal and the MESAG will provide guidance on the gap filling

- process for experts in the next virtual meeting in April.
- The MESAG used text from the adopted [GEO Procedures](#) on the procedure for collaboration with GEO-7 authors.
 - The MESAG provided detailed guidance to the Secretariat on identifying and selecting additional authors, fellows, reviewers and review editors written in the below meeting summary.
 - The MESAG agreed to provide further guidance on the gap-filling of experts (addressing gender and geographical balance) following a request from the Secretariat. This has been scheduled for the third virtual meeting on the 24th April.
 - The MESAG suggested some criteria for the Secretariat to use in the selection and engagement of collaborating centers, including: 1) regional balance with 3 centers from each region, 2) broad expertise to meet needs of GEO-7 as explained in the call for expressions of interest, 3) availability of self-funding without the need for support from and 4) regional and global focus.
 - The MESAG provided detailed guidance for the Secretariat related to collaborating centers written in the meeting summary below.
 - The MESAG welcomed the presentation by the Secretariat on the GEO-7 budget.
 - The MESAG requested full participation at the GEO-7 in-person Author Meetings, however acknowledging the resource constraints, the MESAG requested whether budget-neutral adjustments could be made to their workplan and in-person meeting attendance, which was accepted by the Secretariat.
 - MESAG members will explore opportunities to mobilize resources such as travel costs and meeting venues to support GEO-7.

On March 16, 2023 the Multidisciplinary Expert Scientific Advisory Group met to consider the following agenda items:

- A progress update at the GEO-7 plenary session
- An update from assessment co-chairs
- Joint session of the full Intergovernmental and Multistakeholder Advisory Group (IMAG) and MESAG (separate outcomes document)
- Discussion on the MESAG overall workplan focusing on the next second quarter 2023
- Discussion on the GEO-7 review and the Global Environment Outlook Review Editing Analytical Database (GEO-READ) review platform

On these agenda items, the outcomes were:

- MESAG were informed that the chapter annotated outlines building on the [GEO-7 Scoping Document](#) will be ready at the end of the Bangkok meeting as well as identifying author gaps.
- Assessment co-chairs requested help from the MESAG to identify on Indigenous and Local Knowledge (IK/LK) expertise for GEO-7. It was agreed that a systematic approach to integrate IK/LK throughout GEO-7 is required and a task force or working group on IK/LK could be established.
- To exchange final guidance between IMAG and MESAG to ensure synergy and avoid conflicting guidance from the GEO-7 advisory bodies.
- To host calls between the IMAG and MESAG Co-Chairs as needed as semi regular intervals to discuss key issues and any potential overlapping scientific

and policy guidance.

- To host full IMAG and MESAG calls as necessary on matters where scientific and policy guidance are required from both GEO-7 advisory bodies.
- To share information on the meeting schedules and workplans for IMAG and MESAG to plan for any matters that require policy and scientific guidance.
- MESAG agreed to hold monthly virtual meetings on the third Monday of each month, except for the first virtual meeting in April. The next two virtual meetings (April and May) will be held at 3:30pm to 5:30pm Nairobi time and then rotate the time to be equitable for different time zones. A detailed schedule is available in the draft MESAG workplan.
- The provisional agenda items for the first three virtual meetings were agreed.
- The MESAG agreed to invite the assessment co-chairs (who may invite CLAs as relevant) to attend virtual meetings to provide briefings on the assessment process and relevant issues for the MESAG to consider as and when required.
- The MESAG welcomed the Secretariat's presentation on the review process and GEO-READ platform.
- The MESAG suggested that the GEO-READ platform allow the review editors and authors to reassign the categories of comments submitted by reviewers, to add regional balance as a comment category, to add the review period dates in the pop up for reviewers to be reminded of the deadline and to check if it's possible to add maps instead of only graphs to show the geographical distribution of reviewers.

Summary of guidance for the selection of, and possible roles of collaborating centres (CCs)

Selection of CCs


- Regional balance with 3 centers from each region
- Broad expertise to meet needs of GEO-7 (as explained in the call for expressions of interest)
- Availability of self-funding without the need for financial support, consider financial implications especially for collaborating centers in developing countries
- CCs which have a regional and global focus
- Identify CCs that can link their existing work to GEO-7
- Build an informal network of CCs for solutions pathways and outlooks

Role of CCs

- Develop a clear scope of works
- Clarify benefits for the CCs – what can they contribute and what can they benefit from?
- CCs could support with gap filling of authors
- Identify and nominate reviewers and review editors
- Provide regional data
- Develop case studies, assess existing case studies for potential use
- Validate citizen science data and other non-traditional data sources
- Assist with outreach and communication including educational materials (using regional/local relationships with governments/communities)
- Assist with translations into non-UN official languages for use at national / sub-regional levels (i.e. SPM/ briefs / communication materials etc)

Summary of guidance to the Secretariat on identifying and selecting additional authors, fellows, reviewers and review editors

- Invite IPCC & IPBES experts (lists are available online) and they have been nominated by governments
- Approach Collaborating Centres for authors, fellows, reviewers and review editors
- The [Center for Environment and Development for the Arab Region and Europe \(CEDARE\)](#) has a good network of institutions/ organizations covering Africa, West Asia and Mediterranean
- MESAG can reach out to their networks i.e. universities and also individual experts and fellows
- Review GEO-6 experts
- Reach out to Scientific academies and societies i.e. international science council
- For expertise on IK/LK contact [FAO Indigenous people's unit](#) and [UNESCO's Local and Indigenous Knowledge Systems \(LINKS\) programme](#)
- Experts from UN Oceans assessments
- MESAG can advise on CLAs if requested (either within the nominations portal or outside)
- Traditional approaches involve CLAs recommending LAs
- The MESAG stand ready to help the Secretariat select and fill expert gaps following specific requests

Rapporteur	Signature
Mr. Andres Guhl	

Meeting Summary March 14, 2023

Welcome and introductions.

The Secretariat introduced the MESAG Bureau and handed over to the Co-Chairs for the introductions of the MESAG. Roundtable introductions proceeded with introductions of online participants. The Co-Chairs reviewed and adopted the agenda.

Introducing the GEO-7 mandate, process and scope.

The Secretariat then gave a presentation of the GEO-7 mandate, process and scope. The presentation also included an overview of the timeline.

A question about online collaboration was raised and how the MESAG contributes to the content of GEO-7 and the drafting. Another question about digitalization and the type of data used. The Co-Chair responded that the main role of MESAG is to provide overall scientific guidance on the GEO-7 process, without involvement in content and drafting, particularly for the selection of experts and the review process. Additionally, the Secretariat clarified the risk of conflict of interest for any disagreements in scientific opinion, and when issuing a final opinion on the scientific credibility of the GEO-7 process from the MESAG to UNEP's Chief Scientist at the end of the process.

Review of the MESAG Terms of Reference and draft procedures.

The Secretariat presented the MESAG terms of reference (from the adopted [GEO](#)

[Procedures](#), section 4.3). Then the Co-Chairs opened the discussion mentioning that the key role of the MESAG is to ensure the scientific credibility of the GEO-7 process and to oversee the scientific integrity. They introduced that the details of the ToRs will be discussed and then elaborated in the MESAG procedures.

A question was raised on collaborating centers and how they fit into the ToRs, the Secretariat clarified that there's a request for advice on the selection of the collaborating centers and their engagement in the process.

A question was raised on review editors and how the MESAG will collaborate with them. The Secretariat explained that they are not yet selected, but that this can be discussed during the presentation of the work plan later because there is an initial suggestion on when the MESAG can provide guidance on the selection of review editors. Then there is a meeting later in the process with the MESAG and review editors.

A question was raised on the scientific literature and suggestion that only state reports should be included. The Co-Chairs clarified that the literature was described during the [GEO Procedures](#) and [GEO-7 Scoping](#) ad-hoc open-ended meetings and therefore is included in the adopted documents that guide the GEO-7 process.

A question was raised about the level of detail of review for the scientific credibility and the Co-Chairs clarified that when MESAG members review, they can do so in their technical capacity for specific chapters, but also for the overall coherence of the report.

A question was raised on the policy questions and other advice from MESAG in GEO-7, mentioning that the level of detail in the ToRs could be improved. The Secretariat clarified that the ToRs could not be edited because they are extracted from an intergovernmentally agreed document, but the MESAG procedures can be edited, building on the adopted language from the [GEO Procedures](#) and are being developed based on the discussions in this meeting. The Co-Chairs added that the important elements of the MESAG's role include reviewing the scientific credibility throughout the process as well as during the outreach and communication including recommendations.

A question was raised about how policy implementation fits into the process and how GEO-7 ensures to speak to all stakeholders and if that is part of the MESAG's role or other advisory body roles in the process. The Co-chairs clarified that the Secretariat will keep the group informed, and that in GEO-6 there were derivative products for the private sector and key audiences, so this may be an option considered in GEO-7.

A question was raised about material efficiency and health because this seems to be missing from the initial annotated outline because those topics should be explicit at this early stage. Another question on the literature and conflict of interest of the authors. How is the Secretariat monitoring the conflict of interest of the authors? Additionally, how can case studies be developed in the process? It could be interesting to take case studies to show how solutions pathways are being implemented to show policy makers at the local level how to implement the solutions pathways and the ideas that the report will cover.

The Co-chairs responded that the annotated outline is in the adopted [GEO-7 Scoping](#) document from the ad-hoc open-ended meeting in October and therefore cannot be changed. The Secretariat clarified that yes, the existing annotated outline cannot be changed, but the authors are further developing the annotated outline now with the guidance

of the assessment co-chairs. The Secretariat raised that the best way to alert the authors of any missing topics in the annotated outline is by raising the concerns with the assessment co-chairs. Additionally, on the conflict of interest of the authors, the Secretariat stressed that the authors went through a rigorous selection process and that they are all required to fill and sign the same conflict of interest document that the MESAG has received for completion and signature. Then the Co-Chair added that the review processes are the other best times to introduce any missing elements from the annotated outline. The question was clarified to understand the MESAG's role in this process, then the Co-Chair explained that the MESAG's role is to participate in the review and to monitor the scientific credibility which will also be supported by review editors who would prepare expert opinions on if enough reviews occurred and if they included enough reviewers with a diversity of expertise, geographic and gender balance.

A question was raised about the literature and documentation, including the criteria that the authors use for selection. The Co-Chair raised that the literature must be published in some way, and that the selection process that the authors use should be well documented to explain what they consider the most reliable. The Co-Chair also clarified that live data needs to be rigorously reviewed.

A question was raised on the online tools and how to use them and any potential to adapt previous tools for GEO-6 for use in GEO-7. The Co-Chair responded that the GEO-READ tool for the review is one of the key tools, also the online collaboration tool for authors.

A question was raised about the literature other than English, and about data verification for this. The Co-Chair responded that the confidence levels explained in section 11 of the [GEO Procedures](#) will help to assess the literature used.

A question was raised about citizen science, to ask about the data used and the scientific credibility. A suggestion was made that sources are publicly available, verifiable and scientifically credible. The Co-Chair clarified that citizen science is a growing tool and that while it may have uncertainties, there are methods to check quality and with supervision of professional and sufficient statistical power then it can be used, and the experts can flag any uncertain sources for the MESAG to review. It was also clarified that levels of uncertainty will be useful for these types of sources.

The Co-chairs requested for the assessment co-chairs to clarify the MESAG's role at the beginning of the next session after lunch.

Monitoring the scientific credibility of GEO-7.

The assessment co-chair addressed the MESAG on their role in GEO-7. He emphasised the importance of issuing a final opinion on the overall scientific credibility of the GEO process to UNEP's Chief Scientist. He said this can be done best by following the peer review processes to understand if the process is scientifically rigorous and to provide guidance as needed. He said this would need to be done by understanding the balance of reviewers and working with the review editors, and then submitting guidance as needed to the assessment co-chairs. He also stressed the importance of guidance on the gap-filling process for authors and experts to understand if there's an adequate spread in expertise, gender and geographic balance.

Additionally, the assessment co-chair provided an overview of the initial selection of authors

including the needs going forward and initial gaps in Coordinating Lead Authors (CLAs), Lead Authors (LAs) and that there are no contributing authors yet, but they will be added during the gap-filling process. An initial gap is in the modelling and outlooks chapter a lack of gender balance, going forward the assessment co-chair recommends adding social scientists to the modelling and outlooks chapter because the technical experts may need to support of a social scientist on developing storylines (and analysing social plausibility) to support the models. In terms of geographic balance, there's a need for more experts from the African Group, Latin America and Caribbean Group and the Eastern European Group. Additionally, the work throughout the week may reveal any intellectual gaps in expertise so that those can be addressed throughout the gap-filling process. An initial gap in expertise is on indigenous and local knowledge (IK/LK) and the assessment co-chair mentioned that advice on how to address this from the MESAG would be very useful.

Then the assessment co-chair raised the regional and sub-regional groupings from IPBES, following the 4 regions then divided further into 17 sub regions. He mentioned the importance of raising any concerns from MESAG as quickly as possible, and that if there are any concerns, an initial suggestion on how to address those concerns would be very important as well.

Moving on to the policy responses and solutions pathways workshop and the modelling and outlooks scenario workshops, the assessment co-chair mentioned that the policy group focused a lot on definitions, and the modelling group discussed different models and the two groups discussed how to work together. The assessment co-chair also raised that any concerns from MESAG need to be discussed as soon as possible and he mentioned some of the concepts for the MESAG to consider during the presentations from experts, including the levers and methodologies. Specifically, he mentioned how the models work together and the question about how to select different models or if to connect several models. The pros of using an ensemble of models is that the differences between the models are addressed, but the cons are that there is not a lot of time to use multiple models. The assessment co-chair mentioned the ways of collaboration between the groups, and how they may work together. The assessment co-chair also raised the importance of the Drivers-Pressures-States-Responses+ (DPSIR+) framework explained in section 2 page 8 of the [GEO-7 Scoping](#) document.

A question was raised about the review editors and the issue in the IPCC that their role depends on the openness of the CLAs. Once the final decision on the chapter is sent then it's closed. The assessment co-chair responded that there are two approaches, review editors having a strict role as only review editors and another as experts having the ability to participate as either reviewers and/or review editors together. The assessment co-chair mentioned that the MESAG could have a role in sharing guidance on the role of review editors for the assessment co-chairs to consider during the review stage. The question was clarified that the concern is the CLAs working to address comments in silos, then the assessment co-chair responded that the assessment co-chairs are working to ensure that the working relationships of the assessment co-chairs and CLAs are strong enough to avoid this issue and be able to address any initial problems before a serious issue arises.

A question was raised about interacting with IPCC and IPBES about GEO-7 in a mutually beneficial way. The assessment co-chair that the authors are instructed to build on all existing global environmental assessments. He also raised an issue that there is overlap in the production of the IPBES Nexus and Transformational Change Assessment and that there's no way to interact with ongoing assessments. He welcomed any suggestions from

the MESAG on possible interactions with IPBES.

The importance of outreach and awareness was raised and that media as well as the secretariats of conventions should interact to inform and discuss the assessments. The assessment co-chair agreed and mentioned that at the highest level the importance of GEO-7 should be raised to the secretariats of conventions.

UNEP's Chief Scientist also raised the importance of synergies to understand the basis of the methodologies behind the IPBES Nexus and Transformational Change assessments to understand that the processes are coherent. The assessment co-chair wondered who from the process would be able to play a role in understanding the synergies and suggested that UNEP's Chief Scientist may be in a position to raise a discussion on methodologies and synergies to the IPBES assessments. The Co-Chair mentioned that many of the members are engaged in the IPBES assessments and aware of the framework.

Presentations from experts working on the methodologies for solutions pathways and modelling outlooks being developed in GEO-7.

The presentation slides have been shared with MESAG.

Discussion on the methodologies for solutions pathways and modelling outlooks being developed in GEO-7.

Questions about modelling raised considering the main audience of GEO-7 and how the models will be most relevant for them and not too complex, but fit for purpose to reach the national governments, subnational governments to inform actions that may be more centralized at the national or local level. What are the scales of the models, and do the different scales talk to each other between local, national, regional and global?

Response from the expert that the models included now are mostly global models built up in regions using 27 regions. These models have complexities, so it is difficult to subdivide beyond these regions, but these models have subregion specificity with respect to specific information such as biodiversity, nitrogen, forests and agriculture to include spatially explicit components. Regarding the audience, serving the city government with a global report is very challenging and especially including modelling. Somehow a global report needs to be translated to different levels because it would be a different type of model to apply to local regions. This may be outside the scope of the GEO report. Considering some global models focus on certain regions and those models can provide some regional context. To translate some measures in the models or some synergies and tradeoffs. However, the models will not provide policies to address these tradeoffs, but rather show where the tradeoffs exist and then the policy group is the one that describes any options to deal with tradeoffs.

Response from the policy group that the annotated outline is clear on the subregional levels being the lowest geographical level that will be addressed using a typology with model results and pathways to apply to the subregions. The challenge will be to translate that to a less coarse resolution and bring to the city level which would be great but may not be feasible. There may be specific case studies that are useful for groups of situations for a higher resolution in multiple cities and areas, this discussion needs to take place.

Co-Chair responded emphasizing the importance of mega cities due to population growth with another 3 billion people on the planet between now and 2030.

A question was raised about the storylines asking exactly what they are, if they are narratives around which the models are constructed. Does this mean that this is new information? Referencing an early discussion with the assessment co-chair that there should be social scientists involved in constructing the storylines. If this is new information, then it could be acceptable, but should be flagged for the MESAG to review.

The modelling expert responded that the models are building on existing information, and creating the linkages and building models together does have implications for new information, still built on entirely new information. The storylines are an ongoing discussion, there's some discussion to not build the storylines from scratch because there's existing literature on this that was developed from rigorous processes, therefore there's opportunity to build on that work for the storylines.

A question was raised about the relationship between the pathways and transformative actions and how they are linked. Are the actions for all pathways, or only some, are they global?

The solutions expert responded that this level of discussion is beginning now, and the initial idea is that a given pathway encompasses some systems and some levers that have an operating space. The modelling expert added that in the scenarios there are actions, so these will need to be aligned with the actions in the solutions pathways. In the models, the policies or actions are not present. Some actors may be there, but very implicit because this is where the two workstreams come together to show what a system change, or actions (possibly set of actions) make that change that has been set in the model.

A question was raised about the solution pathways and what the problem is in the solutions pathways, how will the major problems of global and regional concern identified? Especially considering after GEO-6 what has happened at a global and regional levels and what are the environmental impacts? How will the major issues be identified and then explained? An example of China, there are mixed issues of pollution, emerging chemical pollution and long-standing issues such as climate change considering air pollution. There are many different organizations involved and how can GEO-7 work with many organizations and learn from them to build on existing studies? How will the solutions build on existing policies and understand their success, also at a global level? How can science and technology support the transformation? Being responsible for scientific credibility, we need to understand how science and technology can provide solutions in the future. Sometimes the models need to be targeted and specific and other times the models should be at a broader level, how does your work differ from the work of the modelling group? Considering the biodiversity example, the impacts are different at a global and regional level, so how are these differences considered? How are the tradeoffs between conservation and development decided?

Response, on science and technology, knowledge systems communicating with each other (including indigenous and local knowledge) is one of the levers. There's a discussion of bringing alternative types of science such as co-learning systems and the invention of technology along with engagement with industry and private sector to make sustainability more appealing for business is integrated into the process as levers. This also touches on not generating new information, but reflecting on what exists and use existing assessments and scientifically peer-reviewed literature for the work. Some solutions are initially identified in some terms in the adopted [GEO-7 Scoping](#) Document annotated outline including biodiversity, land degradation, food security and the 5 systems all affected by the crises, which can then point to more specific crises. For tensions between the economy, industry,

etc. these are integrated in the models and the modelling expert will talk about this and perhaps it is not in-depth, but it is integrated in the work. Also, on context-specific areas, there will be a need for nuances considering that urbanisation is not only a threat to biodiversity, but that biodiversity can exist within urban areas as well. Response from the modelling expert, there are challenges with the chemical pollutants and emerging issues that not all can be addressed. However, pollution, climate and land degradation are all central to the scenarios.

Clarification from Co-Chair that IPBES did a [modelling assessment in 2016](#) and then published an [article in 2020](#) on the work which discusses these concepts in detail.

A question raised on the IK/LK and incorporating it. Also, how will uncertainty be treated in these models considering the difference in available metrics and that the outputs often depend on the models used? Lastly, how will these models be validated to ensure robustness? Response from modelling expert, all models used are well established in the scientific literature, so they are already validated. On the uncertainty, there is an option for a multi-model approach, there's discussion about uncertainty available in the literature which will be used and flagged as a discussion item to have over the next stages of the process because there are key differences in the models on uncertainty and between indicators, which raises challenges. Therefore, these elements need to be communicated and will continue to be discussed in the coming period. Lastly, on IK/LK in the storylines, not involved in initial discussions, but the plan is to build on storylines to incorporate IK/LK. There's still discussion on how exactly to do this, but there's guidance in the literature.

Question on the solution pathways and what are the implications for crises based on the pathways. How will one sector have implications for the other systems/sectors? Is there a list of solutions and how they impact each other? Perhaps a matrix may help this. On the levers, MEAs are a critical lever, considering space is limited, what will be priority? How from the long list of solutions, will some be identified as most promising in specific regions for policymakers? For understanding typologies and actions, there should also be some inclusion of implications for planetary crises.

Response from modelling expert, there's ongoing work to develop the chapter structure and address many of these challenges. The regional analysis is ongoing and under discussion. There's a lot of work in progress, so the questions will be discussed in the other room. On the implications for the 4 planetary crises, in targeting-seeking scenarios, the crises are being addressed with the intention to consider how to address them and understand the implications of how to get there on human health, inequality, food security, etc. to understand what the system change means and how it impacts other systems. On promising actions, it would be difficult to point out the right pathways because that's the role of policymakers. The experts will point out the trade-offs and implementation options, but they need to fit in the local and regional context. Considering promising actions, there are several coming from the scenario analysis that there's synergies across some specific changes, including dietary change and pollution. Several studies show significant gains across crises for dietary change, pollution reduction and education. Also considering discussions in the group on pathway analysis there's discussions on robust actions that are in most pathways, so highlighting those essential actions that are relevant for all transitions, are ongoing discussions.

The spirit of the report is to be solution-oriented, so trying to highlight promising actions will be key and likely brought through in the SPM. There's a lot of discussion on internalizing

externalities, dietary changes, etc. on establishing a protocol for the writing process of GEO-7, there's a check for consistency by the CLAs in each section to make sure there's an overall framework thinking that is present across chapters. On the 17 subregions and differences and commonalities, well noted and thank you for the advice. On interactions across systems, it's not clear how to proceed, but there's a lot of existing literature and understanding of how some systems interact with others, so there's a strong evidence base to capture this information in the models. On the levers this is a discussion ongoing on how to define the levers and explain them to avoid too much ambiguity and clearly understand the role of levers in the content.

Question about policy actions and how will the problem with implementation be addressed? A common problem is a lack of support in smaller countries to implement existing policies. Promising to see interlinkages discussed because outcomes will be supported with this approach. Case studies will be a good approach, so how are these applied and are there any special approaches? Stakeholders are also very important to see how they are involved.

Question on the 17 subregions related to the African Group, what is the unit of analysis? How are the different geographical regions considered? How are the local contexts considered in the categorization? Question on uncertainty, there are uncertainties in results and for input data. The quality of data can vary a lot, so how will this variation be dealt with?

The best way to deal with uncertainty is to build on the literature of individual models that exists. Additional research on input data is outside the scope of this work. Most data are coming from local sources, which is often vetted by countries, so there may be differences from what countries have for the data themselves. For global modelling, these issues are common. National models are built on national data, so those exercises for national contexts could also be used. On the regions, we can use the suggestion for the African Group to understand the linkages. There are some challenges with the models about what they can do. The existing models have four African regions. So, it depends on the technical capabilities of the models, which is under ongoing discussion. On land degradation and pollution, these topics are important and will be considered and are perhaps less discussed at the global level, so well noted. Response from policy expert, on air pollution and water pollution, well noted to understand local needs. On subregions, one advantage about the GEO-7 writing team is that many are experienced across other assessments, which builds the quality of work and literature used in the assessment. On land degradation, there's many experts that will intervene through the collaborating center approach. Considering policy implementation, well noted and thank you for raising this, we will discuss in the coming period.

Question on how can the MESAG support the solutions pathways and modelling work? Response that the experts have the same question about what the MESAG's role in their future work will be. The Co-Chair clarified that the MESAG workplan is ongoing and that their overall role is to ensure the scientific credibility of GEO-7. Therefore, for the MESAG to be sure to sign off on the scientific credibility, then they need to communicate early in the process any potential issues.

Meeting Summary March 15, 2023

Discussion on the MESAG Procedures

The Co-Chairs introduced the agenda item and handed over to the Secretariat to present the draft MESAG procedures document. The Co-chairs opened the floor for discussion.

A question was raised on if the 50% for quorum would include geographic and gender balance within the 50% quorum. The Co-Chairs responded that this would be quite difficult to proceed sharing some background on the GEO-6 experience where initially 2/3 was the goal for quorum, but then the procedures had to be changed to 50% because it was difficult to maintain attendance for decision-making. MESAG members generally agreed that it would be challenging to achieve gender and geographic balance in the 50%, that there's a process to replace inactive members, and that there's a general commitment to move the process forward and to participate. A suggestion was made that for any regional issues perhaps the 50% should consider regional balance. The Co-Chairs clarified that for the MESAG's role in providing scientific guidance that there's not regional guidance, rather guidance that is relevant across the report.

Another suggestion was made for confirmation by email for agreement rather than mandatory attendance in cases of issues with online access or participation. The Secretariat clarified the procedure about the outcomes document prepared and shared after the meetings with the role of the rapporteur to review the notes prepared by the Secretariat prior to circulation throughout the MESAG. The goal is to turn around notes within a few days after online meetings and maximum one week. The Co-Chairs added that for any inactive members, email is an option for engagement. Additionally, they mentioned that the written outcomes document supports the recording.

A question was raised if word documents could be shared instead of pdfs. The Co-Chairs clarified that the pdf needs to be the format because the meeting summaries are signed by the rapporteur, so for security of the signed document, it needs to be a pdf. The question was raised again that it is easier to edit a word document, so this is the preferred file format. The Co-Chairs explained that adding comments to a pdf is possible, so to maintain the security of the signed document, it needs to be a pdf.

The procedure on use of an alternate for an officially nominated MESAG member was presented by the Secretariat. The Co-Chair added that the alternate needs to also be an expert and have the CV shared with the Secretariat for documentation and to show that the alternate is also an expert.

A question was raised about having gender and geographic balance with alternates. The Co-Chair explained that this hasn't been considered before, but that it would be preferred that this consideration is up to the MESAG member nominating an alternate, that if they wish to maintain geographic and gender balance by nominating an alternate of the same gender and region then that's fine, but it is not a decision to be added in the procedures.

Questions were raised about if the alternate procedure is necessary. The Co-Chair said that it was a request from some members of the MESAG to discuss the procedure. An additional clarification on the question was raised that the alternate would then eventually become the member. The Co-Chair added that the procedure is there to serve on the MESAG with a support team. The suggestion was made to remove the procedure for alternates.

A question was raised about the 50% quorum sharing preference for 80 or 90%. The Co-Chair responded that due to constraints on participation it can be difficult to have 80 or 90% participation. Other members agreed with the Co-Chairs that 80 or 90% is too high of an expectation from all experts to be present and agreed that 50% is better for quorum.

The Secretariat presented the procedure for inactive members and the Co-Chairs asked for any questions or comments from the floor. There were none, so the Co-Chair returned to the discussion on the alternates and raised the question if there should be a procedure for alternates.

A member raised that there should not be procedure for alternates and then the Co-Chairs added that there are now two alternates requested by current MESAG members. Another member raised that there should be an option for alternates to share the responsibility of participation for the time commitment. The Co-Chair then raised that there's a difference in opinion among the group and asked how to proceed. The majority opinion currently is to remove the procedure for alternates, so the question was raised if there's any objection. Seeing none, the MESAG agreed to remove the procedure for alternates.

The Secretariat introduced the procedure on the participation of MESAG members as authors, that in the event a MESAG member is interested in being an author, then they would need to resign from their role in the MESAG.

Questions were raised about the process for nomination of authors, asking if the nominations portal is still open and if MESAG members can nominate authors. The Co-Chairs and Secretariat confirmed that yes the portal is still open and new experts can be nominated by MESAG and others using the same official nomination portal.

A question was raised about the conflict of interest about suggesting scientific articles that the authors, reviewers or MESAG members themselves have published and about the content in new papers being written by experts. The Co-Chairs clarified that authorship and MESAG members are separate roles and cannot overlap, and that the content of GEO-7.

The procedures on maintaining the scientific credibility of GEO-7 were presented by the Secretariat. A member asked why the procedures on conflict of interest are not very detailed. The Co-Chairs clarified that as MESAG members not dealing directly with the content, this procedure does not have to be as detailed.

The procedures on interacting with authors from the GEO procedures document was presented by the Secretariat. The MESAG members requested the Secretariat to adapt the procedures to the MESAG document and add a section for them. Another member requested a regular update from the authors, and the Co-Chairs agreed that this is a good suggestion and that this can be discussed when formulating future agendas. The member also clarified that more regular updates would be useful, then the Co-Chairs requested the Secretariat to organize more regular updates from the CLAs for the MESAG.

The procedures on reviewing, informing and monitoring adherence on standards and guidelines for use of source materials were presented by the Secretariat. The Co-Chair also shared the procedure on confidence intervals from the [GEO Procedures](#) document.

The Secretariat presented the procedural guidance on conducting periodic internal evaluations with respect to adherence to scientific guidance, appropriate conduct of experts, methodology and content. A question was raised about any experience from previous GEOs on this and the Co-Chairs shared that there was no experience about inappropriate conduct of experts in GEO-6, then the Secretariat shared an example from GEO-5 that two experts had some personal issues and another expert was asked to guide their work together to address the issues with the experts working together.

The procedure guidance on issuing a final opinion on the scientific credibility of GEO-7 and the Summary for Policymakers (SPM) was presented by the Secretariat. A question was raised about who drafts the SPM, then the Co-Chairs clarified that the CLAs with guidance from the assessment co-chairs draft the SPM and shared experience from GEO-6 that the policy advisory group requested to write the SPM, but the scientific advisory group said that went against scientific best practice and insisted that the CLAs write the SPM.

A question was raised about the solutions in the report and how to address prescriptive language. The Co-Chairs said this is the role of the assessment co-chairs and that the solutions are written as pathways with options to reach the internationally-agreed environmental goals. The Co-Chairs added that the text is to be policy recommendations and not policy prescriptive, and that the option to raise this concern would be during the review. Additionally to ensure that the assessment co-chairs take on the recommendations and review comments from experts.

Discussion on the GEO-7 review process

The Co-Chairs resumed the meeting and asked the Secretariat to provide an overview of the plan for the review period. Then the Co-Chair opened the floor for questions. There were questions raised about the process and role for MESAG. The Co-Chair explained the relationship between the advisory bodies and the assessment co-chairs with the slide to help.

There was a suggestion to meeting the review editors sooner in the process, before the fourth author's meeting. The Co-Chair agreed and asked the group if this can be raised as formal request to move the meeting with review editors to sooner.

Discussion on how to provide scientific oversight and advice on identifying and selecting additional authors, review editors and fellows

The Co-Chairs introduced the discussion topic, and the Secretariat presented the background document on the authors, then the Co-Chairs opened the floor for discussion.

A question on the nominations was raised to understand the expert groups that received the invitation for nomination. The Secretariat clarified that the nominations were circulated widely among scientific expert groups and the nomination timeline was extended to allow for more nominations from experts and to target initial gaps in geographic, gender and expertise.

A question was raised about institution affiliation and self-nominations with the challenges about the requirement to be nominated by a UN-accredited institution or government challenging due to issues with contacting government for some countries. The Co-Chair clarified that UNEP has requirements as a UN organization in terms of the institutions that are eligible to submit nominations. Then the Co-Chair handed over to the Secretariat to explain self-nominations. The Secretariat clarified the challenge with self-nominations is the time commitment and that when nominated by an institution and supervisor, then the expert is committed to the process with the resources to participate as an expert throughout GEO-7. The Secretariat welcomed guidance from the MESAG on this going forward because the nomination process was following existing best practice since the MESAG was not formed yet.

Provide guidance on the profiles and roles of selected collaborating centers

The Co-Chairs introduced the agenda item and handed over to the Secretariat to present the needs on collaborating centers, describing that 45 nominations were received and that guidance from the MESAG on the roles of collaborating centers would be much appreciated. The Secretariat added that there are two collaborating centers already engaged including CEDARE and GRID-Arendal on the review platform and the GEO digitalization. The Co-Chair suggested some initial criteria for the collaborating centers, including 1) regional balance so possibly 3 centers from each region, 2) expertise across all needs of GEO-7, 3) availability of self-funding without the need for support and 4) global relevance in their work. The Co-Chair also suggested the potential to explore funding specific to development funding from donor governments for support to collaborating centers from developing regions. The MESAG discussion generally agreed and supported the suggestions by the Co-Chair.

A question was raised on what the collaborating centers would need to support was raised and the Secretariat shared examples of different roles including outreach and communications, provision of data, reviews and nominations of experts.

A suggestion for the collaborating centers to contribute case studies was proposed and the Co-Chair agreed that this is a good suggestion and having a way for collaborating centers to submit case studies of best practice and key challenges would be useful. The Co-Chair added that having the case studies submitted online through an online portal would be useful.

A suggestion was made about uptake of the GEO-7 material and that the collaborating centers could support with that, including through educational materials.

A suggestion was made that the role for collaborating centers is not during the production/preparation of GEO-7, but rather post-production during outreach and communication. The collaborating centers could use regional/local relationships with governments/community to support outreach and communication.

A question was raised about the selection of collaborating centers and who guarantees the quality and identify any gap to be filled by the collaborating centers. A suggestion was made to engage with [The World Academy of Sciences \(TWAS\)](#) for researchers from developing regions. For gender balance a suggestion was to reach out to institutions with gender expertise and organizations for women in science. The clarification was made by the Co-Chair that the collaborating centers would not be involved in the drafting of the report. Another member agreed to engage the TWAS.

A question about if the nominations portal for collaborating centers are still open was raised. The Co-Chair asked the Secretariat to confirm, and the Secretariat responded that the portal is closed due to the constraints in resources to balance more engagement with collaborating centers, then the Co-Chair suggested that the recommendations from the MESAG can be considered in the selection and engagement of collaborating centers.

Revisiting the MESAG ToRs and draft procedures

A question was raised on the literature in the ToRs on the use of English asking about the text. The Co-Chair clarified that the ToRs are from the adopted GEO Procedures Document and therefore are not open for changes. Additionally, the Co-Chairs mentioned that the goal of the session is to discuss the draft MESAG procedures, not the ToRs.

A suggestion was raised to add 'in consultation with the MESAG' to somewhere in the MESAG Bureau ToRs, and to delete "as far as possible" from the second bullet of the MESAG Bureau ToRs. The Co-Chairs explained that the text cannot be changed in the ToRs, but in case of any questions for clarification, they can be discussed.

A suggestion was made to change 50% quorum to a minimum of 75% and to delete 'or online' from the quorum. The Co-Chairs explained that this point was discussed and there was a consensus view that anything above 50% quorum is not feasible. The Co-Chair asked for views from the group. A response from a MESAG member responded that because the MESAG is a scientific body that discusses well published literature, 50% quorum is feasible because it is not a political body. The Co-Chair suggested that the Bureau speak separately to address this question.

There was a suggestion to add text on the use of an alternate. The Co-Chair explained that there was consensus on the matter to remove the procedure on use of an alternate.

Presentation of the GEO-7 budget

The Co-Chair introduced the topic and raised that key questions from MESAG will be on the meeting schedule and collaborating centers including the overall picture of the budget and expectations for the GEO-7 budget. The Secretariat shared a presentation on the overall UNEP funding to set the stage for the GEO-7 funding.

The Co-Chairs opened the floor for discussion with the key question to consider of how can the MESAG perform its duties considering the budget constraints.

A member suggested that universities may be able to contribute by supporting with travel contributions given an academic activity. The Co-Chair raised that checking the meeting timeline that it might make more sense for the MESAG to be present at the second authors meeting rather than the third authors meeting, or to split the MESAG to have half of the group in the second meeting and the other half in the third meeting. The Secretariat responded with thanks for budget-neutral creative planning and for suggestions to raise funds. The Secretariat also mentioned excellent support from expert organizations and similar, describing that for all plans that require additional budget, it would be best if the planning can be conducted with ideas and implementation of resource mobilization. The Secretariat also stressed the challenges with planning for meetings due to the global increase in prices for flights.

A question was raised on the distribution of UNEP's budget regarding the global scientific community and what actions are conducted in that category, and if any of the funding can be used for GEO-7. The Secretariat explained that yes, some funding in that category is for UNEP considering it's the only flagship global assessment process of UNEP. However, there are other global scientific activities including many examples which compete with GEO-7 for this funding.

Questions were raised on the possibility of having additional budget for the MESAG to have in person meetings, and if there's a fixed budget of the team, is there a possibility to have flexibility in how the money for the team is spent? The Secretariat responded that if any requests for changes in planning are made within the budget, then you have full flexibility to design your workplan as you wish to fulfil the task of ensuring the scientific credibility of the GEO-7. The Secretariat also stressed the importance of collaboration and participation of world leading experts which requires more budget, so there's a lot of ongoing work internally

with the Secretariat team to mobilize funding. The MESAG member clarified that with global time zones, virtual work is challenging, so in person meetings are appreciated.

A question was raised about if the situation arises that the funding gap is not met then what is the plan for the GEO-7. The Secretariat responded that while meeting the funding gap is a challenge, it will happen. The GEO-7 is fulfilling UNEP's core mandate to bring science to the attention of global policymakers, therefore GEO-7 must be delivered, so the funding gap will be met. There will be resources mobilized in any moments of crisis with concerns about meeting the funding gap, from either UNEP's core resources or from the community of supporters for UNEP. The situation is positive because for GEO-7 there's more funding at the beginning of the process than for any previous GEO.

A question was raised if any developing countries support GEO-7. The Secretariat showed the slide with the full list of UNEP contributors, which does include developing countries.

The Co-Chair asked for advice from the Secretariat if it's more practical to split the MESAG between the two meetings or move the participation from the third meeting to the second meeting. The Co-Chair explained the concern of having MESAG participation early enough in the second meeting, but also present during the review with possibly review editors in the third meeting. The proposal for this request could be more fully explained during this meeting. The Secretariat explained that the budget considerations would possibly be the support team coming and perhaps other logistics, so it would need further discussion within the Secretariat team. The next authors meeting is in January 2024, and the Secretariat encouraged the MESAG to bring the proposal to the Secretariat. The Co-Chair explained that the MESAG could work on the criteria to make the decision (area of expertise of MESAG members, geographic location, etc.) of which member attends which meeting.

A question was raised on the collaborating centers about their potential role and asked if any of the full GEO-7 budget includes any plans for collaborating centers and enhancing the impact of GEO-7 through communication and outreach.

Presentation of and discussion on MESAG's proposed work plan with a particular focus on immediate and critical activities

The Co-Chair introduced the agenda item and asked the Secretariat to present the workplan on the screen. The Secretariat shared the introduction and background sections then presented the structure of the workplan presented by meetings with proposal activities/discussion items, sharing first the example of the Bangkok meeting, then scrolling to the next page that shows the first three virtual meeting proposals through April, May and June. The Co-Chair suggested that each virtual meeting is hosted on the third week of each month and asked the group for agreement. The group agreed that the third week of each month agrees. The Co-Chair then proposed that the day and time is set for three months in a row and then is adjusted for the next three months to rotate through time zones to be equitable by time zone.

A MESAG member proposed to have the time somewhere in the middle of the time zones of all MESAG members. The Co-Chair agreed that is a good suggestion and ask the group for thoughts.

A member asked about the procedural guidance on MESAG members missing three successive meetings, so then suggests rotating the meeting day and time by two meetings

instead. The Co-Chair agreed that's a good point to make sure that all members can participate.

The Co-Chair suggested 3pm Nairobi time as the time for the first two virtual meetings following the Bangkok meeting. Then the Co-Chair suggested that while the time perhaps changes, that it would be better to fix the days further in advance than two meetings.

Then a member suggested 3:30pm for a slight adjustment in the time. The Co-Chair agreed and raised that this is fine and asked if the group agrees on 3:30pm to 5:30pm and then raised the importance of the time and day of the meeting being equitable. Then the Co-Chair opened the floor for suggestions on the day noting that Tuesday and Wednesday are not good.

Members generally agreed on Mondays, then the issue was raised that the Chief Scientist will not be able to attend at that time, but the representative from her team will participate instead. The MESAG agreed that meetings will be on the third week of every month on Monday, starting at 3:30pm then possibly shifting the time.

The Co-Chair then opened the floor for discussion on the provisional priorities to the meetings in the first three months, with the note that the meetings should be concise and can have AOB items at the end. The Co-Chair also suggested that the agenda items for the next meeting should be agreed during the meeting and suggested that possibly one CLA per meeting can provide an update.

Suggestion to move the discussion on the review in January 2024 to a bit earlier to provide guidance further in advance of the review in February 2024 and to have more time to discuss those items in one meeting.

A request from the co-chair to ask the Secretariat if there are any other groups that would like to seek advice from the MESAG from the CLAs.

There was a request from MESAG to sit in on the plenary tomorrow morning, and a request for the assessment co-chairs to provide an update on progress and share any request for advice from MESAG on any matters from authors. The Co-Chairs requested the Secretariat to inform the group if they will attend the plenary.

Meeting Summary March 16, 2023

Morning Plenary

Update from assessment co-chairs on the progress during the meeting and any guidance required from MESAG

The Co-Chairs introduced the agenda item and assessment co-chairs, all four names, and asked that they share an update including any critical needs for scientific guidance from the MESAG. Assessment co-chairs started with an overview of the progress on chapters and then mentioned key challenges including regional balance, expertise on IK/LK. On the IK/LK, specific concerns include a lack of IK/LK experts and a lack of guidance on how to address inclusion of IK/LK in the content including a specific process. Assessment co-chairs then added that there's a lack of time and resources, but that the outlooks are progressing well with experts considering the key issues and

mentioned that some need for key scientific guidance on the regional and subregional groupings to support the modelling work. The outlooks authors are working on developing storylines to support the models. Assessment co-chairs added that there are some challenges in participation in some chapters and the need to expand the nomination pool to have more resources for experts. Assessment co-chairs spoke on the beginning of the long process, therefore it's important to plan as much as possible and to think creatively, not only linearly to see the interactions and interlinkages across chapters and content while keeping in mind the audience including how to speak to ministers and UNEA. This requires short and punchy messages that open communication to decision makers to explain the key challenges and actions required in environmental decision making. Assessment co-chairs expressed enthusiasm in the first few days of interacting with authors and agreed there are challenges in the balance of expertise, gender and geographic balance. He encouraged creative, innovative thinking among scientists to deliver the GEO-7 using the orientation of the GEO-7 Scoping Document for direction of the assessment.

The MESAG co-chair responded that in their workplan they will meet once a month and the first month will be focused on the gap-filling exercise for the authors, so these challenges are well noted and the MESAG will try to provide guidance. The co-chair opened the floor for questions to the assessment co-chairs.

A suggestion for a working group or task force on IK/LK ([similar to the IPBES approach](#)) was raised to add a systematic approach to IK/LK across the assessment because adding authors may not be enough to integrate IK/LK across the assessment. The suggestion included an idea to learn from IPCC and IPBES on this topic and to invite experts from both assessments to participate in the task force/working group.

A suggestion for the CLAs to discuss more on the policies and issues was made and to consider the lead authors beyond UN organizations and across other key topics. An example of UNDESA was shared because they are a leading agency on the SDGs and can support across many topics. A request was made to explain the gap and needs among authors to be able to address these needs as well as to involve more young scientists with leading journals more clearly. The Co-Chair responded that it's useful to add to UNEP's communication network with these suggestions.

A remark on the excellent progress so far on the complex work was made along with a recommendation to fill the regional and gender balance gap to communicate with the [African Academy of Science \(AAS\)](#) to use the institutional links for more nominations of experts. A question was made on the GEO-7 conceptual framework about if the DPSIR framework will be used. The co-chair invited the assessment co-chair to respond, the assessment co-chair responded that yes a slightly modified DPSIR+ framework will be used that is in the [GEO-7 Scoping](#) document. Then the MESAG co-chair confirmed that the recommendations from MESAG for the assessment co-chairs will be captured and shared in a coherent, written manner. Then the MESAG co-chair handed over to the assessment co-chair to respond. The assessment co-chair responded that there will be several frameworks used to consider the underlying systems and how to complement the assessment framework to focus on the nexus across the assessment to show the complexity of the system discussed in the assessment. The MESAG co-chair responded that this is good because the solutions need to be multi-faceted and cannot be siloed.

A suggestion was made to build strongly on existing assessments as well as to improve the ongoing IPBES assessments by preparing to read the final report and understand the framework and approach used to build on it in GEO-7. Another point on the regional challenges was raised to make a framework for all chapter on what regions to follow and how to present the policies. An example from IPCC on the commonalities and differences across regions was raised and it was encouraged that a framework with regional aspects from a policy perspective is developed. The Co-Chair agreed that these suggestions address some of the challenges raised in the morning plenary.

A comment was made on the silo-breaking approach that while the solutions do need to break silos, how will that message be received by governments that are inherently siloed and cannot change that. How can the solutions be both synergistic and actionable by siloed governments? The assessment co-chair responded that there's a need to point out that all objectives are failing due to the multi-level siloes across governments, agencies, and more with contributing factors of short-termism and many other key issues that should be raised in the assessment. The assessment co-chair raised that there's an issue with many assessments talking about the technical potential of solutions, but that there's not enough discussion on the economic and market potential of solutions and why the current approaches are not working. It was stressed that without transforming the financial and economic systems, then the other systems will not be transformed.

The co-chair commented that it's interesting that the IPCC 1.5 report discussed pathways in depth to 1.5 while the UNEP Emissions Gap Report concluded that there is no possible way the world is on the path to 1.5. Then the assessment co-chair agreed that the EGR is an excellent report with useful conclusions and that the type of synthesis in the Making Peace with Nature report, along with the types of conclusions from the EGR are necessary to use in GEO-7. The co-chair agreed that the alarm bell has been rung, but now the solutions and how to respond to the alarm needs to be articulated. Another assessment co-chair agreed that the world is still working in silos, including between agencies and governments and that it's important to raise that more organizations than governments are required to take action.

A suggestion was made to include all stakeholders and to use applied science in innovations with an example about the [Intergovernmental Negotiating Committee \(INC\) on plastic and marine pollution](#) that there's a lot of discussion about issues, but not as many tools to respond to the issues. The Co-Chair agreed that GEO-7 has to provide actionable solutions pathways.

A comment was raised about the challenge of applying and working with the DPSIR framework, and that the authors have raised these issues, so there needs to be [approaches to include well-being and feedback across the framework](#). A resource was shared that includes a [reworking of DPSIR framework written by a MESAG member](#).

A suggestion to include cross-cutting boxes in GEO-7 to connect chapters similar to the connections made in GEO-6. There was also a suggestion to try to share evidence on what can be gained by collaboration across networks and organizations including internally across departments and silos in organizations and networks.

The Co-Chair then reiterated that this is the starting of a very long process, and handed over to the assessment co-chair to wrap up and the assessment co-chair suggested

that the MESAG recommend a rethinking of the DPSIR framework to be applied in the report. Another assessment co-chair suggested that MESAG act as a think tank for integrated environmental assessments, independently of GEO-7.

Joint session of the full IMAG and MESAG

Summary available in the IMAG-MESAG joint meeting outcomes document.

Discussion on the draft MESAG workplan

The Co-Chairs requested that the Secretariat share the workplan on screen. The Co-Chair introduced a proposed change in the first one or two meetings to the fourth week in the month instead of the third week. The co-chair then opened the floor for comments.

There was a question about the supporting documents for meetings and if this can be added to the workplan and shared in advance. The Co-Chairs explained that this is why the meetings were proposed to be moved back by a week to prepare and process the background documents in advance of the meetings.

There was a question on the process for the gap-filling for experts to understand how the MESAG can provide guidance. The Co-Chair said that there will be more information available on the specific gaps and that the MESAG can consider this and then nominate experts in response. There was a question about the process for nomination, and the Secretariat was asked to clarify and referred to the email from yesterday to use the nomination portal and write an email as the nomination letter for the expert to use. Additionally, the Secretariat clarified that the assessment co-chairs are working with the authors to identify the gaps and share any suggestions that they may already have to fill them.

The Co-Chair opened the floor for questions on the first few agenda items for the meetings from April to June. Then a question was raised on the date and if the collaborating centers will be discussed in the meeting. The Co-Chair responded to clarify the suggestion to move the date of the first meeting to the end of the month, and then that the most urgent items for MESAG's guidance are to be discussed first, so for the first meeting this means recommendations on the gap-filling and outcomes of the first authors and IMAG meeting.

A question on the role of the MESAG was raised about their role. Then the Co-Chair clarified that we may be requested to provide guidance on key scientific issues, and this is why discussing the meeting outcomes are important because there may be needs for scientific guidance in the meeting outcomes. In order to provide guidance, the assessment co-chairs or Secretariat will need to provide information on what the MESAG would need to provide guidance on. The Co-Chair raised the question on who it would be to share the information on the gap filling exercise. The Secretariat clarified that the information would be shared from the Secretariat after they compile the feedback from authors with input from the assessment co-chairs.

A question was raised on the list of proposed authors on a no objection basis. The Co-Chair agreed that this could be done in a virtual meeting to agree on the list of proposed authors on a no objection basis after reviewing.

The Co-Chair mentioned the type of scientific guidance that may be provided on regional and sub-regional groupings considering the credibility of the groupings based on ecological factors from a science-based view. The Co-Chair also asked about the policy questions and

proposed evidence base for GEO-7 mentioning that they are vague items and asking what type of documentation may be provided with the agenda items. The Co-Chair responded that based on a conversation with the assessment co-chair and IMAG co-chair that the documents will be prepared and circulated for scientific guidance.

Review demonstration

Suggestion to remove the categories of comments for the authors to decide the category instead and have less fields to fill out for reviewers. Counter-suggestion that the comments should have the category so that the comments can be filtered within the system. The Co-Chair suggested that possibly the comment category could be optional.

A MESAG member suggested to add regional balance as a category, and to check if it's possible for review editors/authors to change the comment category. The Co-Chair suggested to add the dates in the pop up for reviewers to be reminded of the deadline. A MESAG member suggested to add maps instead of only graphs to show the geographical distribution of reviewers.

Annex 1: Participants List

First Name	Last Name	Affiliation	Region(s) of Representation	Participation
Nijavalli	Ravindranath	Center for Sustainable Technologies	Asia and the Pacific Group	In-person
Inna	Stecencko	Transport and Telecommunication Institute	Eastern European Group	In-person
James	Ford	Priestley International Centre for Climate	Western European Group	In-person
Nagwa	El Karawy	Ministry of Environment (Egypt)	African Group	In-person
Tambe	Honourine Enow	Africa Climate and Environment Foundation (ACEF)	African Group	In-person
Richard	Filcak	European Environmental Agency (EEA)	Specialized Agency - EU	In-person
Lorenzo	Ciccarese	Institute for Environmental Protection and Research (ISPRA)	Western European Group	In-person
Rosemarie	Casimiro	Nueva Ecija University of Science and Technology	Asia and the Pacific Group	In-person
Maria del Mar	Viana Rodriguez	Institute of Environmental Assessment & Water Research, Spanish Research Council	Western European Group	In-person
Nicholas	King	Wilderness Foundation Africa	African Group	In-person
Andres	Guhl	Universidad de los Andes	Latin American and Caribbean Group	In-person
Belay	Simane	Addis Ababa University	African Group	In-person
Amal (Alternate)	Moufarreh	Ministry of Energy Transition and Sustainable Development (Morocco)	African Group	In-person
Yonglong	Lu	Xiamen University	Asia and the Pacific Group	In-person
Gian Carlo	Delgado-Ramos	Institute of Geography, National Autonomous University of Mexico	Latin American and Caribbean Group	In-person
Tatiana	Kuznetsova	Federal Service for the Supervision of Natural Resources of the Russian Federation	Eastern European Group	In-person
Galina (alternate)	Mishanina	Federal Service for the Supervision of Natural Resources of the Russian Federation	Eastern European Group	In-person
Ervin	Balázs	Centre for Agricultural Research of the Hungarian Academy of Sciences	Eastern European Group	Online

Alban	Thomas	INRAE - French national research institute for agriculture, food and environment	Western European Group	Online
Eric	Davidson	University of Maryland	Western European Group	Online
Ousséni	Arouna	National University of Sciences, Technologies, Engineering and Mathematics	African Group	Online
Isabelle (Alternate)	Buttino	Institute for Environmental Protection and Research (ISPRA)	Western European Group	Online
Natalia	Ryzhenko	Ministry of Environmental Protection and Natural Resources of Ukraine	Eastern European Group	Online
Shau Hwai	Aileen Tan	Professor Dato' Dr	Asia and the Pacific Group	Online
Andrea	Hinwood	UNEP Chief Scientist		Online
Jason	Jabbour	UNEP Chief Scientist's Office		In person
Matt	Billot	UNEP, MESAG Secretariat Support		In person
Rachel	Kosse	UNEP, MESAG Secretariat Support		In person

Apologies

First Name	Last Name	Affiliation	Region(s) of Representation
Alberto	Capra	Secretariat of Environmental Policy in Natural Resources (SPARN), Ministry of Environment and Sustainable Development of the Nation, Republic of Argentina	Latin American and Caribbean Group
Farah	Bouqartacha	Ministry of Energy Transition and Sustainable Development (Morocco)	African Group
Joyeeta	Gupta	University of Amsterdam	Western European Group
Carmen Rosa	Garcia Davila	Research Institute of the Peruvian Amazon	Latin American and Caribbean Group
Mónica	Moraes	Bolivian National Academy of Science and Universidad Mayor de San Andrés	Latin American and Caribbean Group
Asha	Singh	Environmental Governance Consulting	Latin American and Caribbean Group

Janez	Potočnik	UNEP International Resource Panel	Eastern European Group
Edgar John	Maeniuta Pollard	WHO	Asia and the Pacific Group