

Final Global Author's Meeting, 19-23 February 2018, Singapore

The highly anticipated and final author's meeting of the sixth edition of the Global Environment Outlook was held at the Regent Four Seasons Hotel in Singapore from 19-23 February 2018. The meeting was co-organized by the Ministry of Environment and Water Resources of Singapore and UN Environment. The meeting covered a full five days, with opening ceremonies, an outreach event and planning meetings for authors and fellows on the first day and an Outlooks visioning workshop and a field trip on the third day.



Minister Masagos Zulkifli of the Ministry of Environment and Water Resources of Singapore during the opening ceremony

The meeting was attended by the following groups;

- a) Co-chairs and Vice co-chairs
- b) Authors
- c) Fellows
- d) High-Level Group
- e) Scientific Advisory Panel
- f) Co-chair of the Assessment Methodologies, Data and Information Working Group (AMG)
- g) Lead Review Editors

Authors, fellows, co-chairs, and vice-chairs met in Singapore to advance the drafting of several elements of the sixth Global Environment Outlook, which included:

- Drafting of the Summary for Policy Makers and the Technical Summary: A zero-order draft of the technical summary and early draft of the summary for policymakers was produced by a small author team working with the co-chairs and vice-chairs. The drafts are currently being worked on to improve the key findings and messages, ensuring alignment with the main report and attributing confidence to each finding, to improve the understanding of policymakers who will eventually read the Technical Summary and the Summary for Policy Makers.
- Addressing questions of coherence across the document: Authors met with the co-chairs and vice chairs to identify the areas where coherence needs to be improved in the document. A strategy of using the draft Technical Summary to identify these areas of incoherence enabled progress to be made to better align the chapters and key messages and still needs further work to provide more substantive recommendations.



Drafting session of the Drivers Chapter

- Moving the Policy Effectiveness chapters towards second order draft quality: Policy authors worked diligently to improve the referencing as well as the assessment of the effectiveness of the case studies, the policy analysis component and the indicators analysis considering the health, economy and equity aspects. The cross-cutting chapter was redesigned to better focus on systemic policy approaches and the possibilities for transformative change using policy approaches. A different approach was proposed for tracking progress towards internationally agreed environmental goals. UN Environment will produce a traffic light dashboard for an array of different indicators rather than relying on the three policy sensitive indicators selected in the thematic chapters.
- Moving the Outlooks chapters towards second order draft quality: Outlooks authors worked extensively to advance the scenarios and 'seeds of change' chapters towards their second order drafts. The outline for the Summary for Policy Makers received from the High-level Group provided guidance on the main themes that could be focused on in the Outlooks chapters. These themes could include: the need for urgent and sustained action to achieve environmental goals, a focus on systemic transformation is likely needed to make progress towards these goals more quickly, and finally, there are significant benefits of using this more transformative approach. The Outlooks authors are likely to deliver an early second-order draft for the technical review beginning 11 April 2018. A request will be made to reviewers to assist in advancing the document towards a cleaner second-order draft. Two meetings will possibly be organized (budget permitting) to help the Outlooks authors address the review comments from the technical and intergovernmental reviews in a more targeted fashion. Important discussions were held to more actively integrate human health into the scenarios and outlooks work. Health authors were requested to assist with data and text to move this forward.
- Gathering more data for the innovative Outlooks component with a stakeholder workshop: A fourth outlooks visioning workshop was held on 21 February 2018 with cities focus. Participants in the workshop included: local Singapore stakeholders, authors of the Global Environment Outlook for Youth, Asia-Pacific and selected experts from the author teams. A paper is planned to be published on the technical results and findings of the outlooks visioning work so that these findings from the workshops can be used in the assessment process.

- Advancing the drafting of the cross-cutting issues and 'common threads' throughout the assessment: Cross-cutting and Common Thread Lead Authors worked to create text which could be added to the existing chapters. The focus was primarily on inserting text into the Policy chapters. A text was drafted for the economic dimension and equity dimension common thread and efforts are being made to present this material for integration into the chapters. The importance of the cross-cutting issues and common threads to the systemic transformation narrative has emerged as a critically important issue to address for the 11 April review draft.



Planning meeting of the fellows

- Conducting the fourth High-Level Panel Discussion as a core activity in the broader Global Environment Outlook outreach strategy: The High-Level Panel Discussion focused on Climate actions in cities, creating a livable environment for people, and examined the role of science, policy, and business in creating a better global future. The discussion also focused on concrete case studies from Singapore and from cities around the world. The panel also considered key cross-cutting issues such as the economic and equity dimension and the effects of the environment on health.



- Conducting a side event on the Global Environment Outlook for cities: The Global Environment Outlook for Cities is one of the main derivative products of the Global Environment Outlook specifically targeting the needs and the potential of cities in achieving the Sustainable Development Goals (SDGs). The fundamental objective of the Global Environment Outlook for Cities is to: (a) promote a better understanding of the interaction between urban development and the environment; (b) providing reliable and up-to-date information to the region's local governments, scientists, policy-makers and key stakeholders; and (c) help them improve urban-environmental knowledge base planning and management. The Global Environment Outlook for Cities assessments provide information on the state of the environment, the main factors for change, and the policies affecting the environment, their effectiveness as well as emerging themes. For this new edition, it is envisaged to develop a more dynamic and interactive product compared to the previous editions. The main idea is to build on existing networks and attract more key players, especially from developing countries to create sustainable pathways within the Sustainable Development Goals (SDGs) framework.



Presentation on the Global Environment Outlook for Cities



Participants during a tour of the Singapore City Gallery

The technical review of the full sixth edition of the Global Environment Outlook will begin on 16 April 2018, which means all chapters must be delivered to the Secretariat in second-order draft form by 11 April 2018. The review comments will need to be addressed between 15 May and 15 June 2018 by the authors. Efforts are being made with the Review Editors to improve the efficiency and accuracy of the process of addressing review comments. A Science Editor will also be engaged to review the chapters from 15 April to 15 June to tighten up the narrative, propose improvements to the quality of the science and eliminate duplication in the document. The intergovernmental review is intended to begin on 15 June 2018, until 15 August 2018. The review comments from this

intergovernmental review will need to be addressed between 15 August and 15 September 2018. The drafting meeting for the second-order draft of the Summary for Policy Makers will happen from 24-27 September 2018 in Mexico. Further information will be made available as it becomes available. Co-chairs, vice-chairs and coordinating lead authors were requested to keep these dates open for participation in the meeting. Authors will have until 30 October 2018, to fine tune their text and work with the copy editor on their chapters in preparation for the Secretariat's document production exercise. An embargoed copy of the final document will be available for the Member States by the week of 5 December 2018.

The Fourth Innovative Scenarios and Policy Pathways Stakeholder Visioning Workshop

The fourth innovative scenarios and policy pathways stakeholder visioning workshop was held on the 21st of February 2018 at the Regent Four Seasons Hotel in Singapore during the week of the final global authors meeting of the sixth edition of the Global Environment Outlook. Building on the “Seeds of Good Anthropocenes” initiative¹, the basic concept was to identify a suite of complementary existing initiatives (social, technological, economic or otherwise) that are not yet widespread or well-known, that together, provide elements with which to envision alternative scenarios. The ideas and discussions generated from the interactive exercise described here will provide input into the sixth edition of the Global Environment Outlook narrative on outlooks and the assessment of target-seeking pathways. The experience of the workshop will also inform ongoing work on new ways to approach scenario analysis in global environmental assessments including future Global Environment Outlook processes.

The objective of the visioning workshop was to:

1. To elicit innovative initiatives or (“seeds”) and proposals that stakeholders believe could help achieve the Sustainable Development Goals (SDGs);
2. To provide examples of specific solutions within the pathways generated by the modeling section of the outlook; and
3. To start the process of linking the innovative scenarios with the policy section in a way that is most useful for decision makers.



The game-changer visioning exercise is an attempt to counterbalance the current dystopian visions of the future that may be inhibiting the world's ability to envisage and move towards more positive futures, including the attainment of the Sustainable Development Goals (SDGs). A brief video introduced participants to the sixth edition of the Global Environmental Outlook report, the *Innovative Outlooks* process, and the goals of the workshop. The video captured framing remarks from Dr. Joyeeta Gupta, Co-Chair of the Global Environmental Outlook, who provided an overview of the Global Environmental Outlook Report, which brings researchers from around the world together to discuss ways to address environmental challenges. Prof. Detlef van Vuuren, a Coordinating Lead Author of the sixth edition of the Global Environment Outlook Outlooks Chapter, continued the video's overview with a description of the Outlook Chapter's approach to using scenarios to identify strategies for achieving an integrated set of Sustainable Development Goals (SDGs).

Dr. Laura Pereira, a Coordinating Lead Author of the Outlooks Chapter, further explained in the video, a section of this chapter will ground these aggregated pathways in concrete examples of specific solutions. These “game changer” projects help achieve the Sustainable Development Goals (SDGs), especially if they work together. To identify game-



¹ The “Seeds of a Good Anthropocene” is a collaboration led by McGill University, the Stockholm Resilience Centre, and the Centre for Complex Systems in Transition at Stellenbosch University. The initiative, which began in 2014, is premised on the notion that dystopian visions of the future may be inhibiting our ability to move towards a positive future for the Earth and humanity. For more information see: <https://goodanthropocenes.net/>



changing projects, a series of events and platforms are engaging a broad set of stakeholders, spanning government, business, and civil society, to contribute project ideas and suggest strategies for combining different initiatives. Stakeholder workshops in Bangkok, Guangzhou, Nairobi, and Singapore aim to directly engage and foster collaboration and dialogue between different sectors, to gather ideas about innovative projects as well as the policy enabling environments needed to foster and grow these activities. The Outlooks chapter of the sixth edition of the Global Environment Outlook has also engaged Massachusetts Institute of Technology's (MIT) Climate Co-Lab Project to host a contest for synergistic solutions for sustainable development to encourage crowd-sourced solutions to meeting multiple SDGs by 2030.²

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In summary, as Figure 1 illustrates, the Outlooks chapter will consider both a top-down assessment of pathways and a bottom-up assessment of game-changers. These dual perspectives will inform the chapter's exploration of how to achieve the Sustainable Development Goals (SDGs) in 2030 and its identification long-term or mid-century strategies for achieving sustainability in 2050.

Dr. Pereira provided an introduction to the workshop and explained the objectives and the overall proceedings of the interactive game-changer session. She noted that the current workshop would explore how different but complementary scenarios and policy pathways could help achieve some of the Sustainable Development Goals (SDGs), and shared the guidelines around the workshop's game-changer visioning exercise.

Participants worked together, in six groups, to identify "game-changer seeds," based on initiatives or ideas that already exist. Each group focused on identifying seeds that fall within one of the three previously identified pathways towards the Sustainable Development Goals (SDGs): global technology, decentralized solutions, or lifestyle change. Worksheets and an online form prompted participants to generate new seeds and to consider their strengths, weaknesses, and ability to grow, be replicated, or foster deeper change. Through dialogues, participants then developed proposals that combined two or more seeds to create new, integrated solutions that helped realize the Sustainable Development Goals (SDGs). Judges circulated among the groups, helping foster discussions and prompting participants to identify seeds and proposals that fit within their designated pathways. The game's scoring system rewarded the generation of new seeds and proposals and the creation of proposals addressing multiple Sustainable Development Goals (SDGs).

Several key threads emerged from these discussions:

- *Environmental monitoring* – How can citizens and stakeholders help monitor, track, and access changing environmental conditions? Seeds submitted brought up the use blockchain-based open source reporting, smart water sensors to monitor drainage, open data platforms, satellite imagery, and app-based citizen monitoring of pollution.
- *Circular economy* – How can resource and material loops be closed? Participants spoke about "trash to treasure" flea markets, food waste recycling through worm farms, a circular economy initiative database, and training people to repair their broken products. A large focus is on actions that can be taken at the community level.
- *New and improved methods of farming* – How can food production be increased, particularly in urban environments? Seeds included the use of shipping container farming, rooftop gardens, local community gardens, and farms to create opportunities for disadvantaged people.

The conversation closed with a call to take part in the online public judging of entries to the Climate Co-Lab competition on *Exploring Synergistic Solutions for Sustainable Development*.

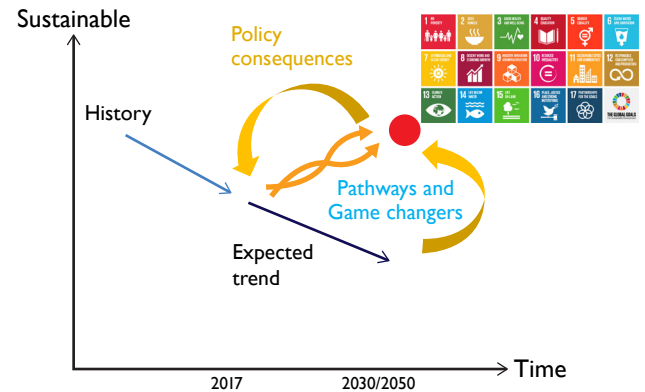


Figure 1. A conceptual framing of the proposed overarching narrative of the Outlooks chapter.

² Additional details about the contest are available at <https://www.climatecolab.org/contests/2017/exploring-synergistic-solutions-for-sustainable-development>.

The First Authors' Meeting of the Sixth Global Environment Outlook for Youth, Asia-Pacific

The first meeting of the Global Environment Outlook for Youth, Asia-Pacific was held in parallel to the Fourth and final Global Authors Meeting of the Sixth Global Environment Outlook from 19 - 23 February 2018 in Singapore. Twelve young authors from India, Japan, Republic of Korea, the Philippines, Singapore, and Thailand attended the meeting. On the Inception Session of the Sixth Global Environment Outlook for Youth, Asia-Pacific in the afternoon of 19 February 2018, the Chief Scientist of UN Environment and Acting Director of UN Environment's Science Division, Dr. Liu Jian thanked the young authors for choosing to contribute to this youth-oriented noble initiative, and encouraged them to take a leading role in environmental protection of the planet. The Director of International Policy Division of Ministry of Environment and Water Resources of Singapore, Mr. Hazri Hazzan, highlighted his expectations of the youth to play a key role in battling key issues such as pollution as well as other environmental challenges.



Ongoing session of the First Authors' Meeting of the Sixth Global Environment Outlook for Youth, Asia-Pacific

The Sixth Global Environment Outlook for Youth, Asia-Pacific will target young professionals from diverse occupational backgrounds, aiming at influencing and changing their thinking, attitude, behavior, and actions for environmental sustainability. The product will serve as both an educational and inspirational material for empowering youths, encourage their involvement in the broader political and policy processes, and give them hope.

Members of the High-Level Intergovernmental and Multi-Stakeholder Advisory Group for the sixth edition of the Global Environment Outlook were informed of the objectives and style of the expected product and its preliminary storyline and structure. The High-Level

Group strongly commended and highly appreciated the initiative that targets young professionals, who are the most active and creative citizens in pursuing green and sustainable development. The young authors also participated in the Fourth Innovative Scenarios and Policy Pathways Stakeholder Visioning Workshop of the sixth edition of the Global Environment Outlook. The group also had a special session with Mr. David Fogarty, Assistant Foreign Editor, Straits Times, Singapore Press Holdings on 'Telling environmental stories'. Mr. Fogarty shared his knowledge, as an experienced environmental journalist, on environmental reporting and provided valuable tips on writing attractive stories from scientific reports and findings, and turning scientific terms into a language appealing to common people.

The first authors' meeting discussed and agreed on report storyline and structure, themes and topics for each chapter, presentation ideas, and style, links to relevant Sustainable Development Goals and targets, placeholders for multimedia features and best practices/case studies. Five chapters were proposed with working titles such as: Introduction (Our Earth, Our Region), Environment and human health (Life on the line), Planet health and human well-being (Cycle of care), Resilience in a changing environment and Striking change (actions by a young generation). Each chapter intends to have an infographic, personal narratives (for each topic), priority and emerging environmental issues, successful stories and best practices and other stimulating and attractive examples. Lead authors also reviewed the list of contributing authors nominated by regional partners and institutions and selected the contributing authors for each chapter. Lead authors were also advised to suggest and recommend new (contributing) authors for gaps that may exist in the current list. An animation and comic competition have also been agreed upon as a special outreach activity to promote the product and to identify visual authors from the finalists of the competition. The group agreed to use "#Our eARTH, Our Story" as the theme of the Animation and Comic Competition. The author team also reviewed and agreed on the work plan and timetable for the development of the youth-oriented product, and the role and responsibility of each lead author in the drafting process, including an internal review for coherence and consistency.



The young authors participating in the visioning workshop



Climate action in cities: Creating a livable environment for the people

Building on the success of previous High-Level panel discussions (Frascati, Bangkok, Guangzhou), the fourth Outreach and Media event covered environmental sustainability in cities in the broader context of climate change and examined the role of science, policy, business and the society in fostering a better global future. The discussion focused on concrete case studies from Singapore on creating livable and sustainable cities and generated high interest among the participants resulting in a real interactive and dynamic session.



Panel Members of the High-Level Discussion: From Left to right: Ms. Megan Meaney, Prof. Diego Martino, Dr. Liu Jian, Mr. Ronnie Tay, Mr. Kevin Teng, Prof. Rajasekhar Balasubramanian and Dr. Lena Cheng

Mr. Ronnie Tay, Chief Executive Officer of the National Environment Agency, brought the attention on the fact that the issues we face, whether climate change or pollution, are city, national and global issues and therefore there is a continuous need to collaborate and share expertise and experiences to develop solutions to meet our common challenges. The Global Environment Outlook platform is a good example of this.

Following this first intervention, Dr. Liu Jian, Chief Scientist of the UN Environment reminded participants the current state of world war that human beings are facing against environmental pollution, against climate change, against biodiversity loss which can only be defeated through the right use of science which won't only provide the intelligence

for the war against these challenges, but also different green solutions and strategies for fighting environmental degradation.

Professor Diego Martino, Global Environment Outlook Author, and professor at the University of Montevideo highlighted how cities are not sustainable or unsustainable per se. He showed how the urbanization process is a challenge but also a huge opportunity in determining whether the world would achieve the 2030 Global Development Agenda.

Ms. Megan Meaney, a representative from the High-level Group and from the International Council for Local Environmental Initiatives reminded participants that only 60% of national governments have an urban perspective in their national climate plans and that is not enough. She stressed the need to match that number up by supporting initiatives that stimulate more dialogue between federal, local and state governments.

With a special eye on the private sector role in sustainable development, Mr. Kevin Teng, Executive Director (Sustainability) of Marina Bay Sands Singapore encouraged the participants to rethink their relationship with businesses both in their work capacities and in their individual life knowing that every time they spend on something, it represents an immense value shared with the company.

Prof. Rajasekhar Balasubramanian, Associate Professor at the Department of Civil and Environmental Engineering at the National University of Singapore, reminded everyone how much our planet is currently in trouble because of our carbon-intense human activities on a day-to-day basis. He said that solutions to environmental problems are indeed within our reach, but we need concerted decisions and actions with no further delay taking ownership of the global environment and giving up the so-called not-in-my-backyard (NIMBY) attitude.

Finally, Dr. Lena Chan, Senior Director (International Biodiversity Conservation Division) of National Parks Board, Singapore, mentioned how cities can harbor rich native biodiversity and conserving it should be integral in the solution to growing climate resilient cities. Therefore, they must be conserved in the city context by adopting the 5C method: (i) Conserving key habitats; (ii) Connecting natural habitats; (iii) Creating habitats by enhancement and restoration; (iv) Collecting key ecological data; and (v) Collaborating and cooperating with other partners.

The sixth edition of the Global Environment Outlook Review process

The Global Environment Outlook assessment has received two major technical reviews and an intergovernmental review so far for the States and Trends Chapter while Policy and Outlooks Chapters have been peer reviewed once. This puts the assessment on a clear path scientifically as well as its political relevance. The reviewers of the process were carefully nominated to the process as well as professionally identified by their respective governments for this purpose. To ensure all aspects of the assessment are given adequate consideration, regional balance, gender

and technical expertise of the reviewers for the sixth edition of the Global Environment Outlook is strictly adhered to. Reviewers are then oriented to the review process by the secretariat to ensure their ease of accessing the document, effective and professional review of the drafts while at the same time ensuring all confidentiality of the preliminary findings are observed by all reviewers.

We are now preparing for the review of the third order draft of the assessment. The upcoming review will involve the full assessment report. This will not only subject the document to a review of the content but also a coherence and consistency review. A technical review will be followed by an intergovernmental review. This review period will involve many reviewers from all United Nations regions with diverse expertise. The main objective is to develop the final draft of the assessment to the best policy-relevant document possible backed with sound science and available evidence to inform policy.

Review editors will work on ensuring that all comments received from the review process are considered by the author teams. They will work with the drafting teams while at the same time brief the Scientific Advisory Panel and the secretariat on the outcome of the review and using their report they will report not only on their satisfaction level of the draft review but also recommend on what to improve or change. The review editor's team is managed by two lead review editors and comprises of two review editors per chapter and a Global Environment Outlook fellow. The final review editors meeting will happen towards the end of the Global Environment Outlook process where review editors will produce a report on how the whole sixth edition of the Global Environment Outlook review process was conducted.



Lead review editors team presenting to the Scientific Advisory Panel on the progress of the review process and demonstrating the review editors comments analytical portal

In the fourth authors meeting in Singapore, the review process was represented by the Lead review editors team where authors, as well as advisory groups, benefited from a demonstration of a review editor's portal. The portal is an enhanced way of managing review comments as well as effectively showing the different aspects of the comments. This portal is a platform for all groups involved in the Global Environment Outlook process to either quickly depict the nature of the comments affecting the chapters as well as help on decision making of the drafting of the whole assessment.

The portal is the new platform used by review editors to manage comments and reactions from authors to effectively compile their review reports.



Know an Expert: Global Environment Outlook Fellow Profile

Jae Nikam is an Indian Environmental Research Analyst specialized in Environmental Governance and Water Management. Jae is currently working for the India office of Institute for Sustainable Communities. She has had a varied experience with environmentally focused Non-Governmental organizations in India and the USA. She holds a Masters in Environmental Technology Management with a specialization in Water Management from Arizona State University. Bringing about positive change in the world is what motivates her the most. She hopes to connect people to science and policy to bring about real change in the world. She is assisting the lead authors with the writing process of the Freshwater chapter.

