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Research article

Principles for building a culture of organizational foresight

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ARTICLE INFO

Keywords:

Environment
United Nations
Foresight
Foresight principles
Organizational culture

ABSTRACT

There is growing interest in developing foresight cultures within international organizations. This reflection on the United Nations Environment Programme (UNEP) approach focuses on a critical 18-month chapter of an ongoing initiative called the Foresight Trajectory. It begins with the premise that organizations are complex adaptive systems, foresight is driven by its potential value, and anticipation is a social phenomenon. The paper proposes principles for cultivating a culture of organizational foresight based on a methodological reflection of the UNEP Foresight Trajectory. This process applied three sets of Reflection Questions across six project phases, generating key insights that inform principles for cultivating foresight within the organization. The questions addressed contexts, relevance perceptions, and modes of anticipation. Three main insights emerged: the foresight process was dynamic and adaptive; the process itself was meaningful to stakeholders as a driver of foresight culture formation; and UNEP, along with other international entities, is uniquely positioned to convene multi-perspective and global foresight processes. Based on these insights, seven Foresight Principles are proposed to guide UNEP and other international entities in engaging stakeholders in foresight to explore new ideas, prepare for uncertainty, build a foresight community, stay flexible and reflexive, communicate openly while respecting stakeholder needs, and foster diverse perspectives to spark immediate thinking and action. This reflection aims to contribute to the development of a foresight culture at UNEP and offer useful insights for other UN entities and beyond.

1. Introduction

The United Nations Environment Programme (UNEP) is a leading global authority on the environment, serving as the UN system's primary platform for setting the environmental agenda, promoting sustainable development, and coordinating international action. UNEP works closely with governments, civil society, the private sector, and other UN entities to address the world's most pressing environmental challenges. While UNEP has a long history of monitoring new and emerging issues, the organization recently undertook an organization-wide process to give further form and depth to its foresight capabilities to better support its member states and stakeholders in navigating uncertainty, seizing emerging opportunities and getting ahead of future issues.

In futures studies, foresight is claimed to help organizations translate creativity into proactive behavior and thereby foster a more

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<https://doi.org/10.1016/j.futures.2025.103673>

Received 12 March 2025; Received in revised form 19 June 2025; Accepted 27 July 2025

Available online 29 July 2025

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anticipatory and strategic stance (e.g., Bourmistrov & Åmo, 2022). Over the decades, the futures field has developed many methods, tools and approaches for conducting foresight (Iden et al., 2017). Many of these are well-tested and documented in terms of their applications, expected outcomes and limitations (Slaughter & Hines, 2020; e.g., The Millennium Project et al., 2009). Several specialized foresight toolkits are available¹ and a growing number of practitioners offer an expanding range of foresight services.² When an organization seeks to integrate foresight into its strategic planning, there are many available resources, but how and why to proceed in developing foresight capacity as part of ‘organizational culture’ is *not* obvious.

This paper offers a widened understanding of the Foresight Trajectory as a multifaceted experiment in consolidating and growing an organizational foresight culture at UNEP. It aims to provide practical considerations and experience-based principles to aid the integration of foresight into UNEP’s operations, plans and culture. The foresight process initiated was a highly participatory, multi-method exercise involving nearly 1500 individuals from inside and outside the organization and around the world.³ The 18-month process explored the topic of ‘planetary health and human wellbeing’ and culminated in a global foresight report *Navigating New Horizons* (UNEP & ISC, 2024).

The mismatch between long-term thinking and short-term decision-making has prompted the imperative for more forward-thinking approaches (Cuhls, 2019; Reilly-King et al., 2024; United Nations, 2021). Nowhere is this truer than with respect to the health of the planet and the natural systems on which we depend (Fletcher et al., 2024; Robbins Schug et al., 2023; Williams et al., 2021). Transformation of Earth’s natural systems due to global heating and other unprecedented threats to planetary health and human wellbeing unfold against a backdrop of geopolitical tensions, polarization and economic instability. The concept of *polycrisis* conveys dynamics of multiple, simultaneous and overlapping crises (Lawrence et al., 2024) which demand new forms of learning (Karjalainen et al., 2022). In this setting, UNEP and other UN entities face significant challenges in directing their efforts and core resources to address both existing and newly arising needs.

This paper offers an avenue for the critical examination of the objectives, methods, approaches in use and motivations for acting, or the *reflexivity*, of the UNEP Foresight Trajectory, which is an important element of participatory foresight, transdisciplinary work, and change management (Cunliffe, 2003; Preget, 2023; Rosa et al., 2021; Rutting et al., 2022; e.g., von Seggern et al., 2023). It also consolidates learnings from implementing the project upon which principles for further enhancing UNEP’s foresight capacities and organizational culture of foresight can be proposed. Three overarching aspects are explored: (1) how implementing the Foresight Trajectory effort was shaped by its contexts, (2) what factors drove relevance for its stakeholders, and (3) how all those involved varied their modes of anticipation between ‘planning and preparation’ and ‘noticing and making sense of novelty’ (cf. Miller, 2018).

As strategic foresight takes a central role in the UN 2.0⁴ reform agenda, there is growing recognition across the UN system and beyond of the importance of anticipating future trends and uncertainties to strengthen impact and effectiveness. UNEP, along with its member states and partners, is actively working to build foresight capacity across diverse organizational cultures. This paper reflects on lessons from UNEP’s Foresight Trajectory initiative, offering practical insights to support the implementation of foresight in international organizations. It proposes principles for cultivating a culture of organizational foresight and highlights ways to diversify modes of anticipation to inform strategic planning, prioritization, and long-term decision-making.

2. The approach to the Foresight Trajectory

The Foresight Trajectory was designed by a wide range of internal and external experts to identify and interpret possible signals of change and framings of new and emerging issues with a view to informing strategic planning and expanding organizational foresight capacities. Momentum for organizational foresight was built through three workshops held between 2021 and 2022. This progress laid the foundation for initiating the Foresight Trajectory from March 2023 to September 2024 with the intention that it would enhance the organization’s efforts to anticipate change and adopt a forward-facing posture. This would in turn support the delivery of knowledge production, (re)assessment of priorities, proactive action, and collaborations with other parts of the UN system.

2.1. Interconnected phases of the Foresight Trajectory

Phase 1: Scoping – The Foresight Trajectory was shaped during this phase to identify and establish its intended outcomes, parameters, stakeholders, and resource mobilization. The overarching topic of *planetary health and human wellbeing* was defined.

Phase 2: Exploratory Data Gathering was achieved using a consensus-seeking Delphi method (cf. Linstone & Turoff, 1975; Mukherjee et al., 2015). Contributions were sought from a variety of domain experts in various geographical regions. Experts

¹ Recent foresight toolkits include, e.g., *Imagining 2050 toolkit* (2021); Equitable Futures Toolkit (IFTF, 2019); The Futures Bazaar (Cuttica & Candy, 2022); Youth-Centered Journey to the Future (UNICEF Innocenti – Global Office of Research and Foresight, 2023); The Long Time Tools (The Long-Time Project, 2020); Inclusive Imaginaries Toolkit (UNDP, 2022); and Futures Tools for Intergenerational Equity (UN Global Pulse & UNESCO, 2023).

² Some key foresight groups include, e.g., The World Futures Studies Federation, Association of Professional Futurists, Global Futures Literacy Network, Global Futures Society, Global South Futures Community, and The School of International Futures – among others.

³ UNEP Foresight Trajectory: Methodological Approach, Rationale and Process. Working document, 2024, Nairobi. <https://wedocs.unep.org/20.500.11822/45867>.

⁴ See <https://www.un.org/two-zero/> (Accessed 18 December 2024).

submitted broad inputs on emerging signals of change and their potential impacts along with supporting evidence.

Phase 3: **Scenario Development** occurred in parallel with launching of the first round of the Delphi survey, under the Scoping and Data Gathering phase and incorporating mappings from Interpreting.

Phase 4: **Interpretation** was a continuous and iterative process that occurred throughout the overall Trajectory, including the qualitative analysis of the ‘emerging issues’ of the Delphi data and, two sensemaking workshops with the Foresight Expert Panel. ‘Weak signals of change’ were formulated from the material, with attention to balancing novelty and potential for impacts on the foresight topic.

Phase 5: **Contextualizing** involved seven in-person workshops that used the scenarios to explore larger issues raised in the signals from the perspective of UNEP’s six global regions, Europe, Africa, North America, West Asia, Latin America and the Caribbean and Asia Pacific, and youth. The process applied in this contextualization builds on the work conducted by the EU Policy Lab underpinning the [UNICEF Innocenti – Global Office of Research and Foresight \(2023\)](#) ([European Commission, 2023](#)). The data from these workshops informed the second Sensemaking Workshop which ultimately distilled the 20 signals of change which formed the basis of the second Delphi survey.

Phase 6: **Learning and Reporting** involved preparing and publishing the Navigating New Horizons report ([UNEP & ISC, 2024](#)) which contributed to the UN Summit for the Future. The Foresight Trajectory, including the insights articulated in the report, inform internal processes and other organizations, and support providing recommendations and guidance.

The interlinks between the phases are illustrated in [Fig. 1](#) while steps and methods for each phase are presented in [Table 1](#).

2.2. Foresight Trajectory stakeholders, partners, and participants

The Foresight Trajectory was coordinated by the UNEP Office of the Chief Scientist (OCS) in partnership with the International Science Council (ISC). In addition, two internal stakeholder groups were formed to foster a sense of ‘collective responsibility’ and ‘collective achievement’ (cf. [Mastio & Dovey, 2021](#)), specifically, the UNEP *Strategic Foresight Task Team* (SFTT) comprising personnel from across the organization and a *Steering Committee* (SC), a subset of the organization’s leadership. External perspectives and strategic partnerships were also sought to help formulate and deliver the Trajectory’s objectives, and to champion the tangible outputs of the project. This involved 10 additional external partners ([Table 2](#)), of which two joined the ICS in contributing to the global scope. One of these two partners supported scenario building and the other developed and prototyped the regional sensemaking process (see [Supplemental materials, Appendix A](#)). Eight other partners supported regional sensemaking (contextualization) workshops. The process was also supported by a Foresight Expert Panel (FEP), comprising 20 external experts – with at least one member from each of UNEP’s six regions – and the head of ISC and the UNEP Chief Scientist as ex-officio members.

The coordination team prioritized the inclusion of a wide range of external perspectives in terms of domain expertise, geographic location, gender and youth. To support this goal, a wide range of individuals within UNEP’s and ISC’s networks were invited to participate in a Delphi survey. International and multidisciplinary groups of experts that have regular engagement or an affiliation with UNEP or the ISC were curated and included. Input was also invited from member states, representatives of UNEP accredited Major Groups and Stakeholders’ organizations¹⁰, and staff, as well as personnel from other UN entities.

Altogether, an estimated 1500 people participated in the UNEP Foresight Trajectory. External participants included Delphi Round 1 respondents (N = 790); Regional Workshop organizers and participants (N = 288) and Youth Workshop participants (N = 46), and the Foresight Expert Panel (N = 22). Internally, input was received from the SFTT (N = 26) and approximately 120 personnel who served as ‘internal scanners’, as well as the organization’s leadership team, and Inception Workshop participants (N = 28).

3. Exploring contexts, perceived relevance and modes of anticipation

The Foresight Trajectory was positioned within the broader context of developing and enhancing UNEP’s foresight capacity. For the purposes of this reflection, the Foresight Trajectory was considered as a form of interventionist research—a methodology where methods for knowing are deeply linked to a setting ([Lukka & Wouters, 2022](#)). More specifically, it can be seen as a form of Participatory Action Research, where a group devises a change-oriented action within their own community (the organization and its networks) to arrive at shared understandings and renewed ways of doing and being ([Kemmis et al., 2014](#)).

To generate these insights, the authors have conducted a systematic methodological reflection. Methodological reflections can take many forms ([Bussey, 2014](#); e.g., [Géring et al., 2021](#); [Liu & Burnett, 2022](#); [Tarrant, 2017](#)). These processes aim to intentionally and transparently examine how a chosen approach and method (or ‘way of knowing’) functions in practice. Unlike conventional evaluations of ‘what worked’ and ‘what didn’t’, the goal of our reflection is to deepen our understanding of a methodology and approach in relation to its potential for significant knowledge co-creation and its alignment with conceptual frameworks.

This reflection operationalizes three key conceptual starting points. First, the Foresight Trajectory took form and was implemented within multiple levels of dynamically changing contexts, driving the characteristics of its implementation (cf. [Wiener, 2017](#)). Second, the perception of relevance and ‘potential value’ matters to engagement and learning within the foresight process ([Wenger-Trayner & Wenger-Trayner, 2020](#)). Lastly, *anticipation* is a phenomena happening in our world ([Groves, 2017](#); [Louie, 2010](#); [Miller et al., 2013](#)), people and organizations alike apply and engage in it ([Fuller, 2017](#); [Jabbour, 2022](#); [Pereira et al., 2021](#)), and it

¹⁰ The full list of accredited organizations and the work of its members as guided by UNEP’s Stakeholder Engagement Handbook: <https://www.unep.org/civil-society-engagement/major-groups-modalities> (Accessed 18 December 2024).

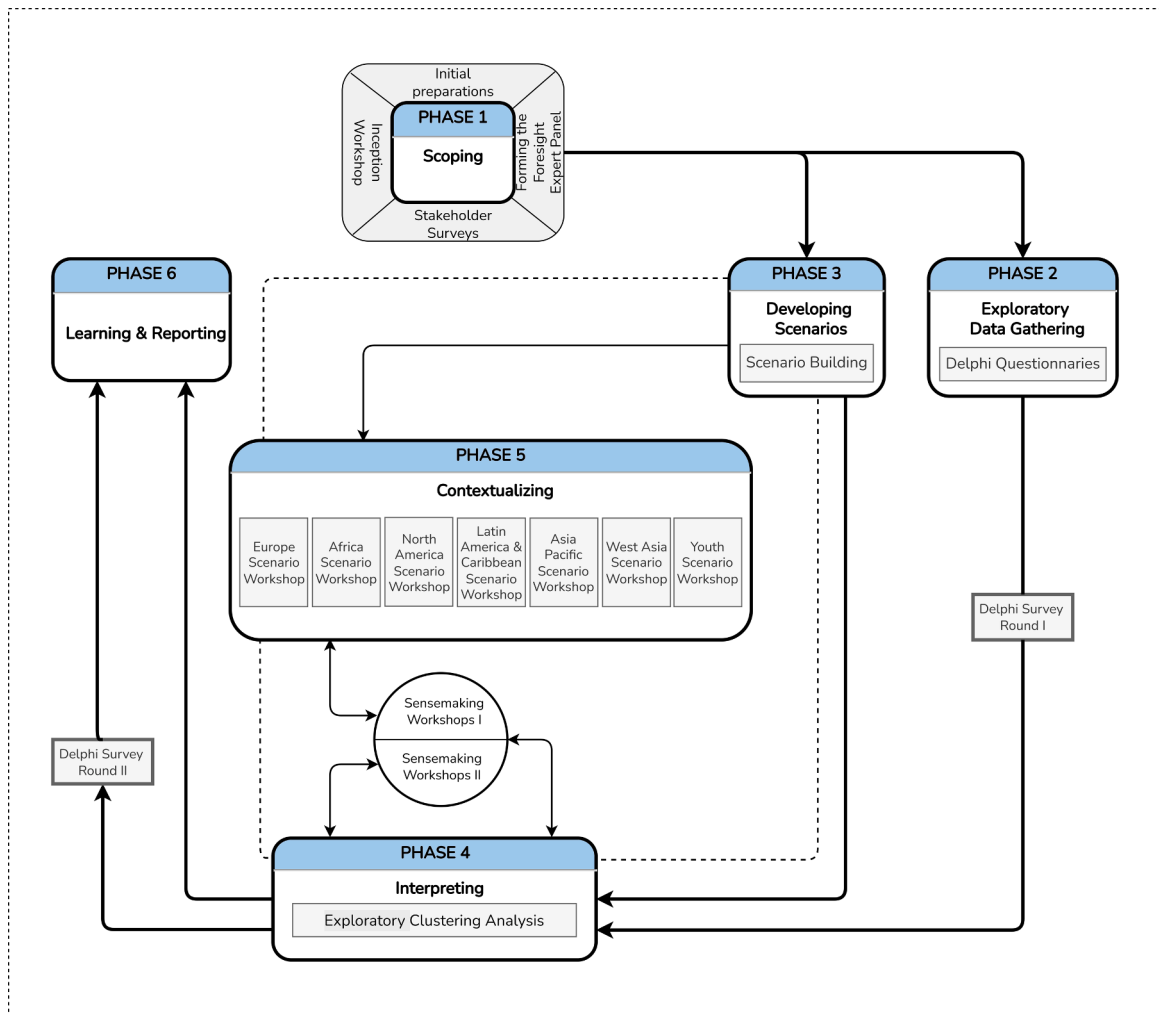


Fig. 1. The Foresight Trajectory – conceptual summary of the foresight process and methodological steps, highlighting the iterative and non-linear nature of the process.

comes in a variety of forms such as planning and preparation or tuning into novelty and making sense of emergence (see, ‘anticipation for future’ and ‘anticipation for emergence’ in Miller, 2018).¹¹ From these concepts, we conceptualize the Foresight Trajectory as a methodological apparatus feeding into pre-existing and ongoing anticipatory processes of the organization and its environment.

Connected to these conceptual starting points, the *reflection process* involved devising three pairs of reflection questions to apply to each phase of the Foresight Trajectory. They are designed to explore each phase’s contextual characteristics behind choices and parameters, drivers of relevance to stakeholders, and varying forms of anticipation (Box 1).

Each of the six phases of the Foresight Trajectory (Fig. 1 and Table 1) were analyzed in the context of the three pairs of Reflection Questions. Discussions were documented (Table B1). Through iterative conversation, interplays between the project’s evolving contexts, perceptions of relevance, and varying modes of anticipation were discussed, and cross-cutting themes were identified. This article proposes a set of Foresight Principles constructed from these broader insights. (See overview in Table B2.)

4. Reflections about the Foresight Trajectory

After applying the reflection questions, we found several areas of action which involved all three dimensions and cut across the phases. These areas were: developing the project’s relationships and community; clarifying its parameters, purposes and functions;

¹¹ *Anticipation for the Future (AfF)* and *Anticipation for Emergence (AfE)* can be further broken down into three types of Anticipatory Systems: preparatory, planning, and revealing complex emergence. Each can be applied in general or specific ways, resulting in six forms of Anticipatory Assumptions that describe how people imagine futures. For efficiency, our reflection remained at the broader level—using AfF to encompass preparatory and planning systems, and AfE for systems focused on making sense of complex emergence (see Fig. 1.1 in Miller, 2018).

Table 1

UNEP Foresight Trajectory – steps/methods and their objectives, formats, participants, and timings.

Phase (from Fig. 1)	Step/Method	Objective/Rationale	Activities	Participants	Dates
1. Scoping	Internal Preparations	To gain buy-in, identify intended outcomes, map resource needs.	Convening taskforce, setting up guidance team, mapping possible process, stocktaking, and resourcing.	Leadership Team, SFTT	October 2022–March 2023
1. Scoping	Forming the FEP	To establish a globally representative panel from beyond UNEP's usual experts.	Open call for experts with ICS, and expert role definition	20 Experts selected + 2 ex-officio	Feb–March 2023
1. Scoping	Inception workshop	Frame the overarching process design/define Foresight Trajectory topic	Inception survey and workshop	SFTT	Feb. 2023
1. Scoping	Stakeholder Surveys	To set thematic direction based upon the experts' & leadership team's perspectives.	Online questionnaire	FEP, Leadership Team	April 2023
2. Exploratory Data Gathering	Delphi Survey (round 1)	To gather horizon scanning items (i.e., qualitative data on changes and potential disruptions).	Online questionnaire, invitation package, monitoring responses.	Sent to 790 experts	May–June 2023
3. Developing Scenarios	Scenario Building	To generate a set of global scenarios built from signals identified from the horizon scanning.	Desk research In-person and online workshops	Partner 2 26 external and internal experts	March– August 2023
4. Interpreting	Exploratory clustering analysis ^a	Identify structures within the data: key themes, patterns and clusters of emerging change from the survey.	Data analysis of emerging issues (N = 1256) and weak signals of change (N = 280).	6 Individuals from UNEP and ISC. 2 Assistants	June–Sept. 2023
4. Interpreting	Horizon Scanning Sensemaking Workshop	To further process horizon scanning items.	Workshop	FEP	21–22 Sept. 2023
5. Contextualizing: Probing, Feedback & Adjusting	Process development in co-creation	To build a robust foresight process to contextualize the global scenarios in a consistent way across regions.	Process development sessions	EU Policy Lab and UNEP	Sept.–Oct. 2023
5. Contextualizing: Probing, Feedback & Adjusting	Six regional sensemaking workshops	To contextualize and utilize the global scenarios to assess the relevance and potential impacts of signals identified and prioritize them according to specific regional circumstances.	Six Co-Hosted Workshops	EU Policy Lab and 288 experts, practitioners participated across the 6 workshops.	October– Dec 2023
5. Contextualizing & Probing	Youth Workshop	To fill the youth gap in the diversity of perspectives engaged up until this point.	In-person and online workshop	46 youth representatives	17–18 February 2024
5. Contextualizing & Probing	Sensemaking Workshop 2	To evaluate and select a narrow set of horizon scanning items for use in Delphi (Round 2).	Workshop (In-Person)	Foresight Expert Panel	19–20 March 2024
5. Contextualizing & Probing (Also Phase 2 and Phase 4)	Delphi Questionnaire (round 2)	To return to the Delphi respondents in Phase 2 for their assessments of the 20 signals distilled during Sensemaking Workshop 2.	Online questionnaire	Sent to the 790 experts who responded to Delphi (Round 1).	April–June 2024
6. Learning & Reporting	Reporting and Dissemination	To synthesize results by writing a Global Foresight Report and 3–4 academic articles, including internal and external peer review.	Report to UN Summit for the Future and its launch event, academic articles, internal presentations, and media interviews.	OCS and various co-writers	March–September 2024 (and after)

^a The Delphi (survey 1) data and clustering analysis were processed using online qualitative coding tool using Grounded Theory (cf. Glaser & Strauss, [1967] 2017), bottom-up clustering, and a priori codes adapted from PESTEL and constant comparative techniques

seeking emergent signals via a multi-perspective approach; growing familiarity with foresight approaches; and balancing the organization's convening power and institutional roles.

4.1. Developing the project's relationships and community

More than ever, strategic collaboration and reciprocal relationships at every scale are key elements of success for any UN organization in the formation of new initiatives (United Nations, 2021, 2024). This was also true for the Foresight Trajectory at UNEP. Internal and

Table 2
Partners of the UNEP Foresight Trajectory^a

Partner 1	International Science Council, a non-governmental organization for the natural and social sciences.	Global
Partner 2	A private consortium of foresight and strategy consulting firms applying participatory foresight, scenario building, and scenario-based strategy development.	Global (Scenarios)
Partner 3	The EU Policy Lab of the European Commission specializing in using foresight for policymaking.	Global/Regional
Partner 4	An independent non-profit scientific organization	West Asia
Partner 5	A pan-African, non-profit and public charitable organization promoting science and innovation in Africa.	Africa
Partner 6	A non-profit advancing sustainability forestry and agriculture active in Africa, Asia, and Latin America.	Africa
Partner 7	A global network of scientists, researchers, and innovators working with sustainability policies, strategies, and transformations.	North America
Partner 8	A university-based think tank active in sustainability policy contexts and digital equitability.	North America
Partner 9	An international non-profit research and policy organization specializing in participatory sustainability knowledge co-creation.	Asia Pacific
Partner 10	An independent think-tank specializing in multi-stakeholder dialogue regarding sustainable development.	Latin America & the Caribbean
Partner 11	A node in a global network of sustainability information services	Europe

^a Some names of partner organizations are withheld for purposes of research ethics and research integrity.

Box 1

Reflection Questions.

Contexts: General and Specific

Explores how the general context of the UN System and specific context of UNEP shaped the phase of the trajectory.

General: What contextual dynamics and influences on the design and implementation of the Foresight Trajectory might other UN agencies encounter when producing and implementing a similar project?

Specific: What contextual dynamics and influences are specific or even unique to UNEP? What specific characteristics of the organization played a role in how the foresight project was structured and conducted?

Perception of Relevance: Helping and Hindering

Probes why people had intrinsic motivation to engage in the phase of the Foresight Trajectory.

Helping: When did stakeholders, contributors, and participants indicate that they perceived the relevance of the process? What reasons did they implicitly or explicitly express when finding it relevant or irrelevant? What drove this perception?

Hindering: In which parts of the process was the relevance of participating in the foresight phase questioned by stakeholders, contributors, and participants? What kinds of objections did they raise? What about the phase that hindered people from perceiving its relevance?

Forms of Anticipation: Planning and Engaging Novelty

Opens instances when either key form of Anticipation — ‘for future’ or ‘for emergence’ – appeared (Miller, 2018) in the phases of the Foresight Trajectory.

Planning (Anticipation for Future): When in the process did the Foresight Trajectory stakeholders engage in planning and preparation – anticipating what probably would happen or what should happen? To what extent did the proceedings of the phase invite planning and preparation modes of thinking?

Engaging Novelty (Anticipation for Emergence): When during the process did the implementation team encounter novelty in the form of new phenomena, concepts, or potential paths? What happenings introduced novelty to such an extent that it was difficult to know what something should be called or what its implications were?

external relationships were key to building sustained support for the 18-month project. As external experts and partnerships formed, the perception of the projects’ significance increased internally. The internal community was motivated by its pre-existing interest in foresight and exploring how it could be integrated into the organization’s functions more effectively. The external community was motivated to contribute their expertise and perspectives to the larger objectives and direction of the organization.

Varying anticipation modes between a planning and noticing novelty fostered greater resonance around emerging issues. It ‘all clicked’ when the project’s community felt a sense of ownership toward the endeavor, a shared understanding of the potential value it could bring the organization, and an authentic interest in the proceedings and outcomes of the foresight work and an appreciation of the strategic interest in building long-term foresight capabilities.

Being as open and inclusive as possible with communication was critical to the successful formation of the Foresight Trajectory’s community. The formation of this community itself was important to the project and its characteristics will likely shape how foresight practices evolve at UNEP and how its foresight culture is further developed.

4.2. Clarifying parameters, purposes and functions

The Foresight Trajectory was scoped and formed in a mode of ‘building while using’. This approach had benefits of fitting the Foresight Trajectory meaningfully with its nested contexts and producing interest in ‘learning by doing’. It also introduced challenges from reconciling multiple objectives and critical success factors for the project. At times, conflicting priorities would work against a perception of relevance. The reward of staying with it, however, was a foresight project with objectives and configurations that matched well to the organization’s functions as well as its implicit and explicit culture change ambitions in relation to its own action plan and Secretary-General’s UN2.0.

To navigate the project’s exploratory nature and somewhat dynamic beginning, a mix of probabilistic inferences and attention to emergent factors and conditions was needed. This included being open and responsive to feedback. It also involved identifying opportunities and acting on them when appropriate.

Adding to the open communications which served to form a community around the Foresight Trajectory, workshops, focus-group sessions and surveys were used to elicit active involvement from the organization and its stakeholders in defining the Trajectory. Crucially, these interactions led to the parameters, gravitated around ensuring that emerging issues—especially those of wide international significance—received appropriate and adequate consideration. The topic of ‘planetary health and human wellbeing’ was also defined and elaborated through this process.

Throughout the project, desired outcomes were refined according to emergent conditions and needs. To do this, a mix of adaptive planning/management and regular reevaluation was required. The project’s flexibility became one of its strengths as it leaned into the challenge of gathering, interpreting, and contextualizing emerging issues and signals of change.

Working together to clarify the parameters, purposes and functions of the Foresight Trajectory boosted its perceived relevance to the organization. It was viewed as ‘made by us’ and eventually became to be seen by stakeholders as ‘for our benefit’ – internally as a demonstration of how foresight can integrate into the organization and externally as a pathway to addressing global environmental challenges. Collaboratively scoping and forming the Foresight Trajectory fostered broad agreement that the project was to find, process, and understand new signals of change.

4.3. Seeking emergence via a multi-perspective approach

The Foresight Trajectory included a ‘networks of networks’ engagement strategy for the input gathering Delphi questionnaire, the prioritization of diverse fields of study and geographical diversity in the Foresight Expert Panel, interest in reaching beyond the domain of environmental science, and planning to run contextualization workshops. Most UN organizations – including UNEP - have existing and beneficial relationships to partners and experts. In alignment with its goal of encountering emergent signals of change, the Foresight Trajectory was interested in actively engaging with a diverse range of actors and receiving inputs from beyond the usual actors and knowledge systems.

Taking a multi-perspective approach aligns well to the UN’s institutionalized core values and the challenges of addressing inclusion and diversity (Mingst et al., 2022; Sorooshian, 2024). The Foresight Trajectory placed emphasis on including views from UNEP’s global regions and from youth. The convening power of the UN, mixed with attention to where contributions were coming from and adjusting accordingly, was instrumental in addressing the potential dominance of any one worldview.

Championing a multi-perspective approach was important to the variety of inputs received, quality of interpretation, and ability to re-contextualize the issues raised by different regions and youth. For example, the mix of insider and outsider perspectives during the interpretation of signals fostered bi-directional learning as UNEP’s taken-for-granted terminology and assumptions were met by the framings of the external experts. During the Contextualization stage, this could be seen in the regional and youth workshops. Examples include, the ‘food security’ of the European Region, reframed as ‘food sovereignty’ in the African Region workshop; and the notable boldness of proposed actions at the Youth Workshop compared to the regional workshops.

Monitoring the number of submissions by region and age group of the respondents along with their feedback led to the identification of some obstacles to fuller participation. During data gathering, the invitation was in English, and it was an implicit expectation that responses should be in English too. In the context of the UN, there are many examples of multi-lingual dialogues, and it is an open question if a larger foresight project can do the same. Some recipients of the data gathering questionnaire such as a medical clinician and an AI expert were beyond the usual domains consulted by UNEP and were surprised to be asked for their inputs. This feedback received quick responses to ensure that their input mattered too.

Championing a multi-perspective approach featured similar benefits and challenges as any intercultural transdisciplinary projects. Not only was there a need to bridge language and terminology, but there was also a need to bridge diverse ways of knowing. This bridging required attention to emergent signals in group discussions and dynamics of miscommunications or productive differences. This was especially true with the Foresight Expert Group during their two sensemaking workshops to process materials received from data gathering.

Reaching beyond the usual actors introduced to UNEP many previously unconsidered domains and themes such as outer-space, mental health, and military conflict. For some stakeholders, it was challenging at first to perceive the relevance of these themes. This is one way that taking a multi-perspective approach sought to increase the quality of the Foresight Trajectory proceedings by welcoming a more holistic and systems view of potential changes which could affect the environment. It also produced a multiplying effect as several regional partners and participants reported that they were able to use insights-in-progress from the contextualization workshops to inform their own priority-setting processes.

4.4. Growing familiarity with foresight approaches

Several observations from this reflection process were about practices of framing how specific foresight engagements fit into the larger trajectory and organizational context. These observations were focused on the input gathering questionnaires and workshops for scenario building and regional contextualization, as well as teamwork to interpret submitted horizon scanning signals.

In these observations, there was a link between mixed understandings of the purpose of an activity and the perception of its relevance. There were also mixed modes of anticipation, demanding some level of planning combined with an openness for emergence. Regarding the input gathering questionnaire, some participants needed responses clarifying what was expected from them and how they should answer in relation to their official roles. In the scenario-building workshops, facilitators needed to help some participants step back from problem-solving mode – identifying issues and jumping into their answers – to allow the scenario-making to unfold. In the regional workshops, it became important to align the purpose of the engagement with host partners, even while customizing workshop elements to fit local context and support participants in authentic contributions. When interpreting data, discussions about how to code it were often about what would matter most to later phases of the project – building common ground on what counted as novel and how to thematically sort the signals.

The project's community and its participants, as could be expected, had a mix of members who were familiar, less familiar, or unfamiliar with foresight and futures literacy. However, all participants shared an appreciation of experiential learning – increasing foresight experience and capability by 'doing it, not just talking about it.' The nested contexts supported this modality, at the broader UN level through several initiatives to foster foresight cultures across UN organizations (e.g., Quintet of Change), and at the more specific context of an organization with pre-existing interest in foresight and earlier test runs with cross-organizational foresight and futures literacy workshops. There was a build up to the Foresight Trajectory which led to an awareness of the potential benefits of consolidating and allocating resources to growing the foresight culture of the organization. These insights paint a larger picture of learning happening in overlapping and nested contexts each with varying levels of readiness for foresight. The trajectory itself was seen as a step in a larger journey toward building capability. It became a vehicle for experiential learning about the tools, value, and benefits of foresight.

Reflections on the role of familiarity with foresight on extra communication attention needed for framing Foresight Trajectory activities and outcomes raised a productive tension into view. While foresight drives toward exploration of diverging ideas, UN organizations drive toward consensus-seeking and making agreements. This tension could be why foresight can be uncomfortable for actors in the UN context – whether they are staff, leaders, member state representatives, or external experts. Yet, experiences with foresight – combined with a reflexive stance – can lead to greater awareness of its purposes and value for strategic thinking.

4.5. Balancing UNEP's convening power and responsibility to institutional roles

All UN organizations, including UNEP, must fulfill their core missions, mandates, and member-state-approved work programs (e.g., [UNEP, 2021](#)). These institutional roles come with an expectation for inclusive decision-making and structures to support it.

Due to their functions, structures and relationships, UN organizations are uniquely positioned to convene diverse perspectives from around the world. Several observations in this reflection were about how positively external actors responded to invitations to engage with the Foresight Trajectory.

Managing the institutional role emphasizes guessing how various stakeholders will react while preparing communications, as well as asking directly for feedback. Preparing the primary report from the Foresight Trajectory required balancing institutional responsibilities with faithfully reporting the findings of the foresight project. Some of the topics covered were met with heightened scrutiny by some stakeholders due to concern for the implications to their own interests. To address this scrutiny, some draft text needed to be restated or framed more carefully.

UNEP's convening power was key to implementing a truly multi-perspective approach. Due to its institutional roles, UNEP could produce the characteristics, objectives and meaning of the Foresight Trajectory in ways other plausible non-international foresight hosts could not. Working with the primary partner ICS enabled the Foresight Trajectory to reach beyond the organization's typical networks, while attracting external interest in the project drove enthusiasm for the project within the organization.

4.6. Synthesizing these insights

The above insights into action areas of the Foresight Trajectory surface how the project was shaped and conducted in a dynamic and adaptive way. The process of forming and implementing it mattered to the people who engaged in it for its potential to contribute to the organization's foresight culture. The project also demonstrated UNEP's remarkable convening power and the benefits of exploring broader perspectives than the environmental domain in fulfillment of its mission. Altogether, these insights underpin the way the Foresight Trajectory was able to attract a variety of internal and external experts, facilitate the gathering of diverse perspectives, and orchestrate a sophisticated interpretation of 'signals of change', awareness of framings, and venues for recontextualization (see [Supplemental materials, Appendix B](#), for further details of themes and cross-cutting insights that emerged).

5. Toward principles for building foresight culture

Based on the authors' careful reflection and deliberation about the Foresight Trajectory, seven principles for building and operationalising an organizational foresight culture at UNEP are proposed. These principles are crafted to fit the specific situation and

needs of the organization and are intended to inspire ongoing efforts to build its foresight culture. Given their resonance with wider foresight literature, we believe they may also be useful to other UN entities—and even non-UN organizations—engaged in foresight and seeking to cultivate similar capacities.

Discovery – Designing foresight processes to uncover, notice, and make sense of novelty enables stakeholders to identify new patterns, opportunities, choices, and priorities. Moving between ‘preparation and planning’ (or ‘problem solving’) and ‘appreciating novelty’ modes can widen the perception of potential transformations. Internal engagement in the interpretation and discovery process can enable important shifts in perspective, open-up valuable insights and reveal previously unconsidered risks and opportunities applicable to the organization. Having a new idea does not always mean launching new initiatives – innovation can also mean phasing out existing framings, processes, or activities. Direct participation in discovery processes can help stakeholders reconsider priorities and identify where future resources and support may be insufficient to address the scale and interconnectedness of key environmental issues.

Foresight Readiness – Some unreadiness can always be expected and it is important to start when the organization is ‘ready enough’ rather than wait for the situation to become perfect. Assessing the organization’s readiness for foresight helps in fostering buy-in from leadership and peers. Open probes, such as cross-organizational foresight workshops, can help ascertain the organization’s awareness, familiarity, and interest in foresight before embarking on a larger project. Relational trust and situational honesty are key to ascertaining this readiness. Readiness can fluctuate; therefore continuous ‘pulse taking’ and adaptation is important for long-term commitment. The foresight readiness of the organization requires continual nurturing through highly relevant experiences with foresight and recognition of their value.

Complementarity – Effective foresight does not happen in isolation and benefits from engagement up and down hierarchies, within and outside of the organization, and with awareness of foresight activities of peer entities. Because larger foresight efforts are time and resource intensive, direct engagement and support from senior management is important to their formation, uptake and relevance. When this engagement includes leadership-supported organizational intentions to integrate the foresight into larger strategic processes, the learning potentials strengthen. When organizational stakeholders guide definition of parameters and intended outcomes, the fit to context is refined, and the likelihood of the foresight becoming a systematic and integrated part of the organization culture improves.

Community Effort – Foresight as a collective endeavor is most effective when driven primarily by internal champions and organizational leaders who are prepared to take risks. Community formation and commitment can propel the growth of a foresight culture. ‘Embers’ – people who are intrinsically motivated to discover with others how the organization can make better use of foresight – can be found across among leadership teams and peers: gathering them is a vital source of energy for foresight efforts, both now and later. Continuous engagement of leadership in this community is key. Foresight competence grows with experience and experience prepares the ground for follow-on applications of foresight.

Flexibility from Reflexivity – Foresight processes happen in unfolding conditions. Thus, expecting the need for course corrections, agility and flexibility with prevailing models and assumptions helps adapt the foresight to changing contexts. While any major project needs defined starting and ending points, building a foresight culture may not. Holding a reflexive stance allows for this fuzziness to be used to drive learning, insights, and value. Reflexivity is also important for recognizing that when a group is doing foresight, they are engaging in various forms of anticipation, often emphasizing identifying probable outcomes or setting visions for what should happen while support is needed to appreciate novelty born from complexity and work together to make sense of it. Awareness of this fact can help groups better understand what they are doing, and why, which allows them to stay open to both expected outcomes and unexpected potentials.

Responsive Communication – Communication that welcomes and responds to feedback is essential when conducting organizational foresight. Openness - to the extent that it is possible without causing or introducing risk or harm to the organization or others - is also valuable as it can support internal and external learning, help grow trust in the process, and add room for hearing concerns or critical feedback early enough so that it can be addressed or integrated into how the project is conducted. Meanwhile, communicating about foresight and the value of futures thinking is challenging. Stories based on experience, as a form of cultural knowledge transmission, are a valuable way to foster understanding of what foresight is, what it can (and cannot) do, and why it’s valuable to the organization and its larger context.

Plurality Amplifying Potential – Foresight tools aim to explore and structure conversation about important issues. These conversations benefit when they invest time for exploring multiple, diverse perspectives in terms of knowledge domains, worldviews, positionalities, and lived experiences. Interpretations and meanings produced while doing foresight depend on individual positions in overlapping and nested contexts. Engaging a plurality of voices in every stage of a foresight process can help layer, expand and diversify these interpretations and meanings, rather than to skew and inflexibly lock-in on unproductive ones. This principle supports encounters with new topics and framings of issues which are valuable to expanding the range of framings available for an existing topic. In this way, doing foresight can feel dissimilar to the typical consensus-seeking of the UN system. While this can be uncomfortable, being willing to discuss and explore differences can lead to more transformation-oriented insights. Bringing together diverse views has a multiplying effect as insights gained from internationally conducted foresight can immediately begin to change how significant topics are seen, prioritized and understood in multiple regions or networks simultaneously.

6. Discussion and conclusion

In this reflection, we explored an implementer’s perspective on an intensive foresight initiative, with the aim of sharing key learnings within UNEP, across the UN System and with the broader foresight and futures community. While this paper offers a methodological reflection rather than an evaluation of the Foresight Trajectory, it contributes to ongoing conversations about

cultivating a foresight culture within UNEP and the wider UN system, as well as the broader development of futures studies and foresight more broadly.

6.1. Implications for UNEP and the wider United Nations

The reflection on the formation of the Foresight Trajectory, which builds on UNEP's prior experiences with foresight, can help the organization further develop and deepen its foresight culture. Early applications of insights from the Foresight Trajectory have informed planning, major engagements, and publications. These include guiding the leadership team's 2025 prioritization session, increasing programmatic teams' focus on emerging issues, fostering new collaborations with regions and other UN entities through the Global Foresight Report, and supporting theme selection for UNEP's publication pipeline. Noting these early effects, the proposed principles are designed to support current and future UNEP stakeholders in advancing the Foresight Trajectory, to grow and benefit from a wider organizational foresight culture.

Proposing principles, rather than issuing directives, leaves room for UNEP foresight communities to access diverse modes of anticipation and conduct foresight projects of various scales to inform the organization's strategic planning and operations. The principles provide for ways of engaging, while leaving open how future foresight initiatives are implemented. Based on practical experience, these principles 'pass forward' key learnings which can be used in UNEP's next chapters of its Foresight Trajectory and beyond.

While these principles are primarily proposed for UNEP, other UN entities and international organizations may find value in using them. There is heightened interest in building organizational cultures of foresight, in line with the UN2.0 Quintet of Change (UN 2.0 Quintet of Change, 2024). These principles could serve as 'practical wisdom' for those organizations starting or continuing their journeys. These proposed principles are broad enough to fit cross-cutting characteristics the organizations of the UN system yet can be customized to any organization's unique contextual parameters. These principles could support cross-organizational learning by serving as a basis for comparability of designs and outcomes from the diverse and unique foresight cultures across the UN family.

6.2. Contributions to futures studies and foresight

Claims about the value of foresight permeate the field of futures studies and foresight (e.g., Rohrbeck & Schwarz, 2013). Efforts to build organizational foresight cultures are inspired by such claims. However, methodological reflection – as in other disciplines – can help take distance from a deployment of specific foresight approaches, methods, and tools to consider how they function to co-create knowledge in a specific setting. The three pairs of questions devised for this reflection draw attention to how the work of growing a foresight culture is situated in changing nested, overlapping contexts, supported by foresight's perceived relevance, and composed of various forms of anticipation. This reflection's systematic consideration of contexts demonstrates an application of 'contextual literacy' in foresight processes (Mastio & Dovey, 2021). Exploring factors which help or hinder people from fully engaging in foresight adds to discussions about what drives buy-in, participation, and organizational capacity-building in foresight processes (Janzwood & Piereder, 2019). Including reflection on how varied modes of Anticipation appeared throughout the Foresight Trajectory phases demonstrates a systematic approach to considering organizational foresight processes in terms of Anticipation (cf. Fuller, 2017) and the value of adopting an 'Anticipatory Systems and Processes' perspective from the Futures Literacy Framework (Miller, 2018).¹²

This reflection and its proposed principles join existing literature about foresight conducted as part of United Nations contexts such as the development of foresight tools (e.g., Sweeney, 2017), specific regional cases (e.g., Cespedes Quiroga & Martin, 2017), foresight approaches for development (e.g., Krishnan & Robele, 2024), among others. It augments these contributions by opening some innerworkings of a significant project where a primary aim was fostering a foresight culture for a UN organization. It offers ground for other futures studies scholars and foresight practitioners interested in organizational foresight in to grow further understandings about how organizational foresight cultures can form and develop in international organizations.

Collaborating with the European Commission in the contextualization phase of the process has also led to the development of a foresight methodology that has been applied beyond UNEP (Matti et al., 2025), showing the broad benefits of the approach.

6.3. Conclusion

Through robust reflection, this article proposes experience-based principles for growing a culture of foresight in UNEP. These principles are synergistic toward each other. By applying them when implementing future foresight efforts, UNEP can build from its prior efforts to foster its culture of foresight and attendant capabilities. Furthermore, these principles could help UNEP, the larger UN system and other supranational bodies develop interconnected cultures of foresight – across agencies – and an embedded capability to dynamically imagine and discuss futures. It is our hope that this contribution supports UNEP and the wider United Nations in fostering dialogue on our collective futures and in rethinking our relationships with one another and with the ecosystems on which we depend. In doing so, we may strengthen our shared capacity to anticipate and prepare for the challenges ahead, for the benefit of all.

¹² It would be interesting to integrate a more detailed application of the Futures Literacy Framework (Miller, 2018)— specifically by using its six types of anticipatory assumptions and their parameters. This may help identify which forms of Anticipatory Systems and Processes (ASP) were present and their functions in the foresight process or organizational culture.

CRedit authorship contribution statement

Jason Jabbour: Writing – original draft, Writing – review & editing, Visualization, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Nicolas A Balcom Raleigh:** Writing – original draft, Writing – review & editing, Visualization, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Anne-Sophie Stevance:** Writing – review & editing, Validation, Methodology, Formal analysis, Data curation. **James Waddell:** Writing – review & editing, Validation, Formal Analysis. **Andrea Hinwood:** Writing – review & editing, Supervision, Project administration, Formal analysis, Data curation, Conceptualization.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Disclaimer

The findings, interpretations, and conclusions expressed in this paper [work] are entirely those of the authors and do not necessarily reflect the views of their affiliated organizations including the United Nations Environment Programme. The opinions and proposals expressed in this article, including the identified principals and proposed recommendations for actions do not reflect whatsoever on the part of the Secretariat of the United Nations.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

We take this opportunity to express our deepest appreciation to the hundreds of experts, survey respondents, workshop participants, and other stakeholders who generously lent their valuable time, patience and informed views to the Foresight Trajectory. We are grateful to distinguished members of the independent Foresight Expert Panel.¹³ for their expertise and guidance in developing the Trajectory. We wish to thank the EU Policy Lab at the European Commission's Joint Research Centre for their support in co-designing the facilitated regional workshops. And finally, we acknowledge with gratitude Cristian Matti, Anne-Katrin Bock, Laurent Bontoux, Maybritt Jill Alpes, Sarah Cheroben, Maria Caballero Espejo, Katriina Siivonen and Dina Abdelhakim and anonymous reviewers for their insightful and valuable comments on this reflection and manuscript.

Appendix A. Supporting information

Appendix A and Appendix B referenced in this article can be found in the online version at [doi:10.1016/j.futures.2025.103673](https://doi.org/10.1016/j.futures.2025.103673).

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¹³ The acknowledged Foresight Expert Panel can be found here: <https://www.unep.org/ocs/foresight-expert-panel> (Accessed 6 March 2025).

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