



**International
Science Council**



GRID | In partnership with
WARSAW | UN Environment
Programme

A Future for Planetary Health and Human Wellbeing 2050

UNEP Regional Foresight Workshop, Europe
Organised by the European Commission's Competence Centre on
Foresight, in collaboration with the United Nations Environment
Programme and GRID Warsaw

Warsaw, Poland, 24 – 25 October 2023

22 APRIL 2024

Table of Contents

Foreword	2
Introduction	3
Background	3
Methodology	5
The Scenarios	5
Scenario A: The Sustainability Paradox	5
Scenario B: Post-Truth Division	6
Scenario C: Fortress Multipolarity	6
Scenario D: Global Awakening	7
Possible Policy Interventions	7
Governance, regulation and democracy	7
Public services and social contract	8
Behavioural change, education and labour dynamics	9
Economy and business development	9
Globalisation and multilateralism	10
Next Steps	10
Participants list	11

**A Future for Planetary Health and Human Wellbeing 2050
UNEP Regional Foresight Workshop, Europe**

Warsaw, Poland, 24–25 October 2023

Foreword

A note from the UNEP Chief Scientist: Reflections on the Regional Workshops

We are entering the final phase of our 2023-2024 Foresight Process. The first phase scoped a wide range of inputs including a Global Delphi survey and construction of four divergent scenarios of plausible futures to 2050. The next phase, the regional workshops, brought together over two hundred experts from six regions, to reflect on possible futures and crucially, to “reverse engineer” them: to walk backwards from them to the present, with respect to the interventions needed in 2023 to address the underlying causes of the triple planetary crisis and achieve planetary health and wellbeing. In doing so, we have identified some key issues, and perhaps more importantly, have signposted some of the pitfalls and cliff edges along the way.

Global issues require a global perspective, but also to consider the unique contexts of each region. That’s why UNEP’s Foresight Process incorporates this regional element. What surprised many of us, was how diverse the visions which emerged from each region were. While it would be unscientific to read too much into the issues raised – the groups were not selected to be representative and this was not a polling exercise – it was nonetheless fascinating and instructive to be reminded that visions of the future are, by necessity, extrapolations of the preoccupations and anxieties of the present.

In Europe, migration, fractured communities, resource scarcity and the rise of populism loomed large. But there was a sense that many of the solutions lay close to hand. Education, both scientific and civic, was a recurrent theme. Institutions, while in need of reform, were in the most part deemed capable of at least attempting to create a better future world. And there was widespread optimism about renewable energy resources.

Some themes emerged from all of the Regional Workshops. Multilateral cooperation between states, combined with increased localisation and lower-level democracy. The need to engage and involve youth, women, and Indigenous Peoples in decision-making. Modification of our consumerist habits, and a push towards sustainable, healthy lifestyles. These goals are feasible and pragmatic: an encouraging sign for the next step of the process, which is to consolidate and evaluate the inputs, and craft a tool which will help mainstream foresight thinking into environmental and social policymaking.

Andrea Hinwood, Chief Scientist, UNEP

January 2024

Introduction

UNEP's strategic foresight initiative aims to establish an institutionalised approach to foresight and horizon scanning. The goal is to develop an anticipatory and future-oriented culture, recognising the fact that tackling the global systemic challenges we are collectively facing requires integrating forward-looking knowledge and insights across disciplines, knowledge systems, and sectors of society.

The process described here comprises two distinct steps. The first was at the global level, bringing together a Foresight Expert Panel to interpret, analyse, and cluster a large amount of data, and providing insights to potential for disruption following an analysis of 29 emerging changes and over 1000 signals of change identified from a horizon scan survey. Following this global analysis, a set of global foresight scenarios was developed, exploring a range of possible evolutions towards a sustainable future. These scenarios served as a basis for a series of regional workshops providing necessary regional perspectives on these scenarios, providing information on regionally specific issues, risks, and opportunities as well as possible actions.

This summary report provides a snapshot of the key activities and takeaways from the Regional Foresight Workshop for the Europe Region.

The 2-day workshop in Europe was run in accordance with the Chatham House Rules. It consisted of a series of facilitated breakout sessions during which participants discussed emerging changes in context of the four UNEP scenarios and, shared their views on possible pathways through which those scenarios could hypothetically materialise and reflected on how this could affect the transition towards a sustainable future of improved planetary health and human wellbeing.

This report provides a brief overview of the main insights captured during the workshop. It is not intended to present the full set of contributions that took place. The knowledge and insights produced through the workshop – the collective intelligence generated through the discussions – together with the results of the Delphi survey and Global Sensemaking exercises, will ultimately culminate in a Global Report to be published in 2024 that aims to inform deliberations of the Summit of the Future.

Background

The vast expansion of human activities has exerted immense pressure on the Earth's ecosystems and breached the limits of planetary boundaries. A heavy emphasis on economic performance has encouraged unsustainable production and consumption¹.

In 2022, the European Union's (EU) consumption footprint, which factors in the environmental impacts embedded in trade, has risen by 4%². However, a substantial portion of the environmental impacts linked to consumption is transferred from Europe to other global regions. Available data from 2011 indicated that this percentage ranged from 31% (energy use) to 61% (land use), and recent assessments in 2020 suggest that just under one-third of the carbon footprint attributed to consumption in the EU occurs beyond EU borders³. Trade in natural resources underscores the EU's substantial reliance on metal ores and fossil fuels sourced from other regions across the globe⁴. Numerous drivers of change that impact planetary health and functioning ecosystems

¹ International Resource Panel (2019). Global Resources Outlook 2019: Natural Resources for the Future We Want. United Nations Environment Programme. Retrieved from <https://wedocs.unep.org/20.500.11822/27517>

² Lafortune, G., Fuller, G., Bermont-Diaz, L., Kloke-Lesch, A., Koundouri, P., Riccaboni, A. (2022). Achieving the SDGs: Europe's Compass in a Multipolar World. Europe Sustainable Development Report 2022. Retrieved from <https://eu-dashboards.sdindex.org/chapters/executive-summary>

³ Wood, R., Neuhoff, K., Moran, D., Simas, M., Grubb, M., & Stadler, K. (2020). The structure, drivers and policy implications of the European carbon footprint. *Climate Policy*, 20(sup1), S39-S57 <https://doi.org/10.1080/14693062.2019.1639489>

⁴ Eurostat, 2023, 'Material flow accounts statistics - material footprints - Statistics Explained'. Retrieved from https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Material_flow_accounts_statistics_-_material_footprints#:~:text=Material%20footprints%20are%20estimated%2C%20using,and%20physical%20imports%20and%20exports.

in Europe are often not environmental by nature, nor issues that are rooted in Europe⁵. The primary catalysts for change in Europe include the rise of a global middle class, growing resource demand, and expanded economic activity, which have significant consequences for the environment, climate, ecosystems, and biodiversity⁶.

Demographic shifts in Europe have also impacted the distribution of resources in specific geographic areas and among particular social groups, affecting the spatial scale, character and nature of inequality. While there was a notable decline in population in 2020 and 2021 due to the impact of the COVID-19 pandemic, the EU's population has been on an upward trend with 448.4 million people in 2023. This increase is largely a result of migration that can be attributed to the increased migratory movements post COVID-19 and to the mass influx of displaced persons from Ukraine who received temporary protection status in EU countries, as a consequence of the Russian invasion⁷ ⁸. People are increasingly migrating from rural to urban areas worldwide in pursuit of improved opportunities, including jobs, services, and education⁹. While this concentration of people in cities has been linked to higher productivity, contributing to 70% of GDP, it has also sparked issues tied to environmental degradation, public health, and inequality¹⁰. Inequalities within countries have been rising in Europe¹¹ and are closely linked to environmental inequalities and contributions to climate change. The wealthiest 10% of Europeans emit more than three times the per capita emissions compared to the rest of the population. Individuals with lower incomes frequently reside in the more polluted urban zones, rendering them more susceptible to the adverse impacts of pollution, particularly concerning their health¹².

Inequality persists among vulnerable groups, particularly within migrant and minority communities. In recent years, Europe has experienced significant migration flows resulting from conflicts in the Middle East and North Africa¹³. The surge in migration has often been instrumentalised by political parties, leading to populist movements with polarised debates and distrust in institutions. Although this trend has negatively affected discussions on environmental sustainability, it has also spurred the emergence of youth-led eco-movements, especially in view of heatwaves, droughts, and wildfires in Europe¹⁴. As an example, the Mediterranean region is experiencing an increasing occurrence of severe droughts¹⁵, leading to higher evapotranspiration rates and an increased risk of desertification in Southern Europe¹⁶.

The remaining challenges in Europe concern the need for a new economic model, focused on the wellbeing of people and nature¹⁷. As the growing connection between the economy and the environment becomes evident, it

⁵ European Environment Agency (2019). Drivers of Change of Relevance for Europe's Environment and Sustainability. Retrieved from <https://www.eea.europa.eu/publications/drivers-of-change>

⁶ European Commission (2023). Strategic Foresight Report 2023. Retrieved from https://commission.europa.eu/system/files/2023-07/SFR-23-beautified-version_en_0.pdf

⁷ Eurostat, 2023, 'Population and population change statistics'. Retrieved from https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Population_and_population_change_statistics

⁸ European Environment Agency (2019). Drivers of Change of Relevance for Europe's Environment and Sustainability. Retrieved from <https://www.eea.europa.eu/publications/drivers-of-change>

⁹ UNDESA (2022) Migration, Urbanization, and the Family Dimension. Retrieved from <https://www.un.org/development/desa/family/wp-content/uploads/sites/23/2022/04/Migration-Urbanization-and-the-Family-Dimension-by-Bahira-Trask.pdf>

¹⁰ European Commission (2023). Strategic Foresight Report 2023. Retrieved from https://commission.europa.eu/system/files/2023-07/SFR-23-beautified-version_en_0.pdf

¹¹ OECD, 2015b, In it Together: Why Less Inequality Benefits All, OECD Publishing, Paris.

¹² European Environment Agency (2019). Drivers of Change of Relevance for Europe's Environment and Sustainability. Retrieved from <https://www.eea.europa.eu/publications/drivers-of-change>

¹³ Lutz, W., Goujon, A., Ke, S., Stonawski, M., & Stilianakis, N. (2018). Demographic and human capital scenarios for the 21st century: 2018 Assessment for 201 Countries. Publications Office of the European Union.

¹⁴ Trott CD. Youth-Led Climate Change Action: Multi-Level Effects on Children, Families, and Communities. *Sustainability*. 2021; 13(22):12355. <https://doi.org/10.3390/su132212355>

¹⁵ IPCC, 2014, Climate change 2014 — Synthesis Report— Summary for Policy Makers: Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, Intergovernmental Panel Climate Change. Retrieved from http://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf

¹⁶ European Environment Agency (2017). Perspectives on Transitions to Sustainability. Retrieved from <https://www.eea.europa.eu/publications/perspectiveson-transitions-to-sustainability>

¹⁷ European Commission (2023). Strategic Foresight Report 2023. Retrieved from https://commission.europa.eu/system/files/2023-07/SFR-23-beautified-version_en_0.pdf

also raises questions of fairness across generations. Shifting the economic model will lay the groundwork for the well-being and material prosperity of future generations, impacting how economic benefits are distributed. Decoupling economic growth from resource consumption will be the central challenge for a novel economic model. The shift to sustainability also demands unparalleled investments, training, education, re-skilling and up-skilling, improving social cohesion and addressing inequality¹⁸.

Methodology

The Regional Foresight Workshop was co-designed and facilitated by UNEP's Office of the Chief Scientist and the European Commission Joint Research Centre (JRC) Foresight team in partnership with the International Science Council. The workshop was co-hosted and supported by GRID-Warsaw together with the Copernicus Science Centre and Saint-Gobain.

The participatory process for the foresight workshop was organised around 3 key exercises:

2. **Reviewing Scenarios:** Participants were presented with the four UNEP scenarios that are being used as a foresight tool to engage in systemic reflections and the exploration of potential challenges, opportunities, and options for action in the European region. Participants were invited to familiarise themselves with the four scenarios and consider how to contextualise each of the thematic areas for the region as well as to refine and validate the scenarios.
3. **Exploring Changes:** participants were invited to a second discussion on exploring what sequence of changes could lead us from the present to each of the four scenarios with the view to analysing the potential for disruption of the state of the environment, planetary health and human well-being.
4. **Identifying Policy Interventions:** Action oriented strategic reflection to identify how each of the main changes impact sustainable development in the region and to propose specific policy interventions that could be implemented to address changes that could negatively impact sustainable development.

The Scenarios

The four global scenarios were presented with the intention of representing extreme, yet feasible, visions of the world in 2050. They contain overlapping elements that were categorised under 8 thematic areas which are, in themselves, neither "utopian" or "dystopian" visions, but rather, representations of possible futures that are presented as tools to facilitate discussions with the view to allow the identifying themes, pathways and interventions which may occur in the future.

Below is a summary of the scenarios and how they were contextualised for the Europe region:

Scenario A: The Sustainability Paradox

Global Scenario Summary: Science and technology is actively used to successfully solve many environmental problems and resource scarcity. Therefore, society continues to believe that economies can grow exponentially, and people continue to consume without limits.

What will Europe look like in 2050 under this scenario?

- There is **tension** between the EU's role in regulating and moderating international capitalism, and national interests. Lack of a cohesive approach damages the continent's ability to deal with **disruptions** caused by technological change and environmental degradation. The transition to renewable energy has

¹⁸ European Commission (2023). Strategic Foresight Report 2023. Retrieved from https://commission.europa.eu/system/files/2023-07/SFR-23-beautified-version_en_0.pdf

lost momentum, and the temptation to turn to tech interventions to solve environmental problems brings **unintended negative consequences** for habitats and species.

- Excessive optimism about technological advancements leads to a lack of safeguards and disregard for ethical considerations. Risks of overreliance on AI, including a loss of human decision-making (agency, decision-making, , reduced critical thinking (cognitive laziness), and exclusion were raised.
- **Social tensions** and fragmentation are particularly evident among marginalised communities dissatisfied with socio-economic conditions.
- **Geopolitical instability** stemming from a nationalistic outlook enhances resource conflicts, potential wars, escalating tensions, and strain international relations.
- **Health risks** include the emergence of new viruses and antibiotic-resistant bacteria. Yet Intellectual Property protectionism limits access to vital medicines, and access to healthcare and medicine becomes increasingly divided, with a resultant decline in overall societal health.

Scenario B: Post-Truth Division

Global Scenario Summary: Trust in science is eroded and social groups choose their own truths, aligning by shared attributes and beliefs. Conflicts exist within and across states and newly forming entities, down to the local level.

What will Europe look like in 2050 under this scenario?

- There is a wide **digital divide**, with AI and social media algorithms used to sway public opinion and reinforce power of elites. Institutions and public bodies will **lose trust and authority**.
- Alongside the rise of **nationalism** to the mainstream, there is a rise in fringe beliefs including **religious extremism** and a return to “traditional” values around the **family and gender roles**.
- Global and continent-wide cooperation and institutions are replaced by bilateral agreements. Disputes increasingly result in conflict rather than mediation. **War** is a strong possibility.
- There is a **decline in the rule of law** and pro-mafia discourses become commonplace. Centralised decision-making has fallen out of favour and **localism** and communitarianism have risen, with many parallel and discrete communities formed along identity lines.
- There is a decline in **environmental and consumer standards** as weak enforcement leads to flagrant flouting of regulations.

Scenario C: Fortress Multipolarity

Global Scenario Summary: A future shaped by a ‘polycrisis’ forces humans to reorganise themselves into hybrid fortified enclaves with megacities, in competition and occasional cooperation with other megacities, and with an emphasis on internal security and surveillance.

What will Europe look like in 2050 under this scenario?

- Democracy and human rights have been eroded as multinational cooperation cedes to a new nationalism, regionalism and localism. **Authoritarianism** prevails, with a loss of equality, diversity, and inclusion. The new power structures require increased **surveillance** and **social control**.

- Traditional employment has shifted toward **automation**. Despite lower working standards and greater job scarcity, there is widespread **suppression** of movements and protests, leading to a more compliant society.
- Finance revolves around digital markets and **cryptocurrencies**, and gold has reemerged as a financial tool. The global trade landscape has been replaced with **protectionism** and exclusive bilateral cooperation. This, however, has also led to an emphasis on **resource efficiency** and **circular economy**.
- There has been a loss of transparency in business practices, and lines between public and private sectors are blurred (for example, the “privatisation” of space). Standards are diluted and confused. “Fortresses” **compete** for control of raw materials.

Scenario D: Global Awakening

Global Scenario Summary: New generations recognise the interconnectedness of their actions and their impact on the health of the planet. Supported by artificial intelligence and technology, they unite to create a world of harmony between humans and nature.

What will Europe look like in 2050 under this scenario?

- A highly **rational, science-led and cooperative** Europe is able to deal with environmental concerns and the climate crisis, at the cost of **diminished democracy** and less scope for debate.
- Vulnerable groups benefit from a more equal society but lose opportunities to present their individuality in the face of a new consensus. Individuals are subject to **resource quotas** to keep consumption within sustainable limits. Extractive and materialist practices are phased out.
- A **circular economy** is in place, and a **universal basic income** reduces inequality. AI is regulated but is also used to regulate, being applied to adjudicate on constitutional and social disputes.
- The United Nations is strengthened, with a new emphasis on **global governance** and Europe works with other continents to mitigate the effects of climate change, reduce inequality, and curb migration.

Possible Policy Interventions

Having constructed and added depth to each of the scenarios, the participants were invited to consider interventions to address changes that could negatively impact sustainable development, focusing on:

- **What interventions would help improve** these 2050 scenarios in a perspective of transition towards sustainability?
- **How** could they be implemented? And **by whom**?

Interventions were considered in the context of a series of distinct thematic clusters. There were significant overlaps between the various interventions suggested across the scenarios, indicating that interventions can be successful in generating critical leverage points at system level.

Governance, regulation and democracy

- **In the search for a sustainable future, governing technology is of utmost importance.** In addition to accelerating innovation through solid financial support for scalability and capacity building, emphasising the ethical use of technology for societal well-being is essential. A human rights-based and context-specific approach to technology can ensure equitable access and ethical practices. In addition, the leadership of local communities in the use of technology proves essential for the ownership of

transformation they wish to pursue. This community-driven strategy could promote a balanced framework in which technology serves as a catalyst for positive change and promotes inclusivity and resilience at the grassroots level. To achieve this, technology companies need to work with other organisations, including non-profit organisations, local communities, universities and schools.

- **A comprehensive approach is essential to enable the way for the socially responsible use of AI and social platforms.** This includes the gradual withdrawal and "unlearning" of problematic technologies, possibly through educational institutions. Robust international regulations, especially on data protection, can play a key role in safeguarding ethical practices. Effective regulation of social media algorithms is essential to curb the spread of disinformation. The development of countermeasures against information warfare is equally crucial to maintaining societal stability and integrity. By integrating these measures, multiple actors could work together to create a coherent framework in which the benefits of AI and data-driven technologies could be realised while ensuring responsible use and protection from potential harm, enabling the way to a human-centred approach for the use of technologies. It is also envisaged that an independent panel of experts would be responsible for ethical AI and data security.
- **An investment model targeting sustainability is essential.** This can include the development of financial instruments and decentralisation to encourage investment in sustainable initiatives. Better monitoring and conservation of global public goods is essential to maintain ecological balance. Greater community governance of natural resources could enhance local responsibility and resilience. Strong social partnerships and regulatory pressure on investment mechanisms are essential to prioritise the health of the planet at both global and European levels. By prioritising these strategies, the region could move towards climate neutrality and sustainable development, ensure equitable distribution of resources and promote resilience in the face of environmental challenges. Public-private partnerships and new forms of cooperation are crucial for the implementation of these measures.

Public services and social contract

- **A holistic approach is key for guaranteeing wellbeing and equality.** Human and planetary health is a cornerstone to ensure the wellbeing of citizens and ecosystems. Addressing inequalities in resource allocation in the energy sector should be prioritised to promote equitable access to sustainable resources. Efforts to curb carbon emissions and decarbonise energy sources are central to mitigating the effects of climate change. At the same time, income redistribution measures could contribute to social equality and resilience. Maintaining robust social protection mechanisms also ensures that all people have access to essential services and promotes wellbeing and equality across communities.
- **Critical initiatives are needed on promoting health and sustainable lifestyles.** Enhancing the work of consumer protection authorities ensures accountability and control. Implementing preventative measures and optimising healthcare systems through technology integration will increase efficiency while ensuring robust protection of health data. In addition, the use of nature-based solutions and ecosystem management strategies could be reinforced to promote resilience and environmental sustainability. The key actors important for bringing about this change range from multi-level regulators and regional institutions to social organisations, the financial sector and a growing role for regions and cities as the promotion of health at the local level is of critical importance.
- **Democratic practices especially transparency, inclusivity and agency play a central role in creating a resilient society.** Prioritising collective benefit over individual advantage can foster unity and shared responsibility. Enabling activism can also empower citizens to advocate for environmental and social justice. Promoting deliberative democracy could ensure inclusive decision-making processes. Adherence to strong social and environmental standards combined with robust accountability measures can protect against exploitation and promotes transparency. By applying these democratic principles, regional actors could cultivate a framework in which the voices of its citizens are heard and collective action drives progress towards sustainability.

Behavioural change, education and labour dynamics

- **Reimagining education models and enhancing skills is imperative.** Education is key for developing a deep understanding of the planetary health to inform citizen engagement on global challenges. Promoting media literacy, information literacy and critical thinking from early education is essential to tackle the complexity of the modern information landscape. In addition, educational reforms should be implemented to embed sustainability into all curricula and ensure that future generations are equipped with the knowledge and skills they need to contribute to a sustainable society. By embracing these principles, the region can nurture a population that is able to make informed decisions and drive positive change for the benefit of people and the planet.
- **A nuanced approach to labour dynamics and reskilling labour force is critical to enable sustainability transition.** Strategic investment in technology and skills development not only increases productivity, but also promotes adaptability to changing labour markets. The introduction of shorter working time enhances work-life balance, potentially contributing to reducing energy consumption. At the same time, promoting upskilling and learning new technologies can ensure that the labour force is ready for emerging industries. All actors involved in education, including teachers, vocational trainers and ministries of education, together with civil society, are important in driving these changes forward.
- **Incentives for behavioural change through social interventions.** Structural adjustments that promote sustainable options in transport, affordable accommodation and local goods can support environmentally conscious choices. The introduction of pricing and economic incentives further can have a critical role in promoting sustainability. Governments at different levels and their partnership with the private sector and civil society should play an important role in taking the related initiatives forward.

Economy and business development

- **Strategic economic governance and innovative business models as critical areas of transformation.** Fostering new relationships between governments, public and private sectors can promote collaboration and opens space for innovation. For example, public-private partnerships (PPPs) could provide a platform to share and manage risks effectively. Furthermore, foresight and comprehensive modelling enable the proactive identification of challenges and the development of effective solutions. Mitigating technology risks through comprehensive risk assessment is essential for sustainable development. By combining these approaches, a resilient economic framework can strike a balance between innovation and risk mitigation, paving the way for sustainable development while addressing complex societal challenges. As far as the relevant actors are concerned, a shift of power and mandate to local governments in line with stronger public-private partnerships is very important.
- **The introduction of new economic models is necessary for a sustainability transition.** This should include addressing the security of resource supply and moving away from GDP as the primary indicator of progress. Shifting to holistic metrics that include social, environmental and well-being aspects can significantly increase policy effectiveness. Strengthening environmental and social governance standards and reporting should be encouraged to promote accountability and transparency of economic activities. Mainstreaming the circular economy should go hand in hand with material use reduction and resource efficiency. Harmonising global customs rules, standards and taxes and trade with sustainability ambitions could promote international cooperation.

Globalisation and multilateralism

- **The development of a strategic approach to global trade, macro-economic transformation and geopolitics is essential.** Aligning trade deals with sustainability goals would help to promote fair and environmentally responsible practices. Improving resource security and efficiency contributes to mitigating supply chain disruptions, contributing to stability and resilience, especially at national level.

Embracing localised value chains should go hand in hand with implementing macro-economic transformations and addressing geopolitical challenges.

- **Promoting global cooperation and multilateralism is essential to maintain a relevant role for the region in international affairs.** The reform of the UN Security Council promotes more inclusive decision-making processes and strengthens international peace and security. The integration of public goods into the human rights framework could support equitable access to key resources and services. Strengthening informal alliances and dispute resolution mechanisms could promote cooperation and conflict resolution. Additionally, access to reliable and comprehensive data facilitates evidence-based policymaking and increases transparency in international affairs. Environmental multilateralism could take place through global actors such as the Global Covenant of Mayors, UN organisations such as UNEP and UNECE, the European Commission and other regional leaders. However, support from other networks that bring the perspective of the locality and the perspective of civil society organisations is essential.

In considering **how** each of these factors need to be addressed, participants pointed to a variety of traditional policy intervention methodologies. This included the use of coordinated multi-level, adaptive governance and evidence-based policymaking to address the emerging issues that were discussed during the workshop. There were also calls for stronger stakeholder engagement that is accompanied by a stronger consideration of behavioural insights along with improved capacity-building and training for the development of the skills and capabilities of relevant stakeholders. This ensures that those responsible for implementing policies have the knowledge and resources needed for effective execution.

In considering **who** needs to engage in the implementation of these policy interventions, participants indicated that it not only necessitates strategic and targeted engagement from UNEP but also the active engagement of a diverse array of stakeholders, including Governments, businesses, non-governmental organisations, scientists, local communities, and individuals. All these actors play integral roles in crafting and implementing effective solutions. It was also noted that the interconnectedness of these stakeholders is essential, whereby their collaborative efforts, shared responsibilities, and transparent communication are keys to successfully addressing planetary health and human wellbeing.

Next Steps

The outcomes of the regional workshops will serve to inform the second round of the Delphi Survey. This second round aims to prioritise the 259 signals and over 50 issues submitted during the first round of the survey, to the top 18 (three from each region). The original 6000 experts invited to take part in the original Delphi survey, in addition to all those who participated in the regional workshops, will be invited to rank the top 18 issues based on their potential for being most disruptive. Survey respondents will also be invited to give their thoughts on whether and how UNEP should be involved in each issue.

Ultimately all the data gathered during this foresight exercise will contribute to the final Foresight Report, to be presented at the Summit of the Future in New York in September 2024, and UNEP's strategic long-term outlook.

Participants list

Name	Institution
Participants	
Aleksandar Macura	RES Foundation - Partnership for Resilience
Anita Lazaruko	UK Centre for Ecology and Hydrology
Benno Werlen	Friedrich Schiller University Jena, Germany
Bolesław Rok	Kozminski University, Department of Entrepreneurship and Ethics in Business
Elvis Ahmetović	University of Tuzla, Faculty of Technology Department of Chemical Engineering
Fioralba SHKODRA	DCO, ECA, Istanbul
Franjo Mlinarič	Kozminski University
Klaus Kubeczko	AIT-Austrian Institute of Technology
Krzysztof Paturej	International Centre for Chemical Safety and Security (ICSS)
Laszlo Pinter	Central European University; IISD
Mark Burgman	Imperial College London
Muhabbat Turdieva	CGIAR - Consortium of International Agricultural Research Centres
Nadejda Komendantova	International Institute for Applied Systems Analysis
Nita Mishra	University of Limerick
Prof Franjo Mlinaric	Kozminski Business Academy
Richard Filcak	Slovak Academy of Sciences
Sergiy Zibtsev	National University of Life and Environmental Sciences of Ukraine; Director of the Regional Eastern European Fire Monitoring Center (REEFMC)
Somya Joshi	Stockholm Environment Institute
Tatjana Peric	OSCE Office for Democratic Institutions and Human Rights (ODIHR)
Till Kellerhoff	The Club of Rome
Yulduz Alimova	Kozminski University
European Commission's Competence Centre on Foresight	
Anne-Katrin Bock	Policy Analyst
Laurent Bontoux	Senior Foresight for Policy Expert
Cristian Matti	Policy Analyst
Tommi Asikainen	Policy Analyst
UNEP	
Andrea Hinwood	UNEP Chief Scientist
Jason Jabbour	Senior Programme Management Officer
Janyl Moldaliev	Programme Management Officer

Dina Abdelhakim	Programme Management Officer
Sarah Cheroben	Programme Assistant
Richard Crompton	Consultant Writer
Regional Facilitators	
Aaron Williamson	Lead facilitator for the North America Workshop
Alicia Lozano	Lead facilitator for the LAC Workshop
Layla Al-Musawi	Lead facilitator for the West Asia Workshop
International Science Council	
Anne Sophie Stevance	International Science Council
James Waddell	International Science Council
GRID-Warsaw	
Maria Andrzejewska	GRID-Warsaw
Zofia Pawlak	GRID-Warsaw
Copernicus Science Centre	
Henryk Kwapisz	Copernicus Science Centre
Joanna Kalinowska	Copernicus Science Centre